

Public Responses Received for Request for Information 85 FR 9488: *Public Access to Peer-Reviewed Scholarly Publications, Data, and Code Resulting from Federally-Funded Research*

February 19, 2020 – May 6, 2020

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<https://www.federalregister.gov/documents/2020/02/19/2020-03189/request-for-information-public-access-to-peer-reviewed-scholarly-publications-data-and-code>

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University of Pittsburgh Library System Response to RFI on Open Access to Publicly Funded Research Output

Submitted by Kornelia Tancheva, Hillman University Librarian and Director of the University Library System

4/26/2020

Thank you for taking an interest in this issue, and for the opportunity to comment on Open Access to Publicly Funded Research Output. I am writing from the University of Pittsburgh, as the Hillman University Librarian and Director of the University Library. I will address the questions from the Request for Information in order below.

“What current limitations exist to the effective communication of research outputs (publications, data, and code), etc.?”

At the University of Pittsburgh, we are fortunate to be able to subscribe to most journals that our researchers need, but we know that most research outputs cannot be accessed by all of those who truly need them. This creates an uneven playing field where those with the right affiliations can access research outputs that could improve their lives or their work, excluding a huge portion of the population from this opportunity.

Data is an important aspect of access to research outputs. Unfortunately, too often the data underlying a publication are unavailable, because the authors have not deposited them in an online, publicly accessible repository. In some cases, the data have been deposited online, but are difficult to find or access because their descriptive metadata is inconsistent or incomplete. Readers also need to be able to find underlying data via citations in publications. Robust practices of data deposit, description, and citation are needed to improve the availability and accessibility of research data. In addition to these issues around observational data, text- and data- mining of article text—for meta-analysis or machine learning, for example—is often prohibited by publishers, even in cases where we pay for a subscription.

At Pitt, as in most research libraries, we regularly make difficult decisions about how to use our collections budget. When we choose to provide access to some resources, we may then need to cancel access to others. If our scholars need research published in journals we do not subscribe to, they either have to wait for interlibrary loan or use their network of contacts to find colleagues at institutions that do subscribe to these journals. This can potentially slow down the pace of research and hamper progress. It is a well-documented fact that sometimes researchers feel compelled to resort to risky and unauthorized access to scholarly papers when they are not available from their libraries. We would rather the research outputs that our scholars need be easy to access, immediately available, and without time or price barriers for anyone. This is especially true for government-funded research. Not only do researchers deserve access, but so do taxpayers and the public, at large, including high school teachers, students, and start-ups.

The urgent need for open access to publicly funded research becomes even more tangible in global crises such as the current COVID-19 pandemic. The University of Pittsburgh is one of the institutions working on a vaccine, testing, and antibody detection for COVID-19. Many major publishers (for example, Springer/Nature) are making research related to COVID-19 openly available, and researchers across the world are sharing data in order to enable rapid research into solutions for the crisis. While this accommodation is welcome, it is a solution only for this particular situation—such an unprecedented level of access is needed across many subjects and disciplines in order to continue innovative scientific advancement. A strong national open access policy from OSTP would move research substantially toward a better, faster, and more open future.

“What can Federal agencies do to make taxpayer funded research results, freely and publicly accessible? etc.”

The federal government should implement a strong national policy to ensure that taxpayers have immediate, barrier-free access to the full results of the scientific research that their tax dollars have funded. The current 12-month embargo needs to be eliminated so that the final peer reviewed manuscripts or published articles are available immediately upon publication. Furthermore, articles produced from taxpayer-funded research need to be licensed openly to ensure full utility, which means making them available either under a Creative Commons – Attribution license or in the public domain. To enable productive reuse, articles should be published and shared in open, machine-readable formats. This policy should not be limited to articles -- data to validate, replicate, and build on these studies should also be made immediately available. Other data related to the study should be made available under FAIR principles (Findable, Accessible, Interoperable, Reusable).

Libraries have a crucial role in supporting broad and open access to research outputs; at Pitt, our services and infrastructure are ready to help put federal access policies into place at the local level. We offer: an institutional repository for hosting articles and small datasets; assistance with writing data management plans that comply with funder mandates; and training and guidance around publishing and copyright, data sharing, and replicability. The University is also home to a government open data portal, the Western Pennsylvania Regional Data Center, that supports data-driven research and development projects to improve our region. We hope to work more closely in the future with other stakeholders on campus, particularly those providing IT infrastructure, to craft a robust data-sharing system. We also hope to see an increase in open access and data sharing practices across Pitt; however, encouraging adoption may prove difficult without national leadership.

The demand created by a strong national policy from OSTP would provide a top-down complement to current bottom-up efforts in advancing cultural change towards a research ecosystem that is open to all. We encourage OSTP to include both a timeframe of adoption for libraries to support these services, as well as guidance, funding, and resources to support the large-scale restructuring of services that contribute to the execution of these policies and the creation of infrastructure.

We are also ready to help other scholarly and research organizations share open access content. For example, through our Open Access Publishing program at the University Library System, University of Pittsburgh, we work with societies and journals to support open and equitable sharing of research outputs. We subsidize fully-open journal publishing for journals in a variety of fields from medicine to

cultural studies to law and technology. We are ready to deploy our Open Access publishing options to help scholarly societies and other academy-aligned players to enable full, immediate open access to articles and their associated data.

The University of Pittsburgh is already doing work in these areas in collaboration with researchers who are the vanguard of open science. A strong national policy would broaden the scope of open science and we are eager to engage with federal agencies and other stakeholders to explore new opportunities.

“How would American science leadership and American competitiveness benefit from immediate access to these resources? etc.”

Strong national Open Access policies are becoming the global norm, as evidenced by the collection of funder mandates tracked by the Registry of Open Access Repository Mandates and Policies (ROARMAP). The U.S. is being left behind as other countries adopt Open Access policies that accelerate their scientific research capacity by providing immediate access to the outputs of their research. According to ROARMAP, the European Commission has a full Open Access policy for its articles and data, the National Research Council of Canada just announced a similar policy, and many other nations including India, Australia, China, and Brazil have committed to Open Access for their funded research. Private funders like the Gates Foundation and the Wellcome Trust also have strong Open Access policies for their funded research, further encouraging an open ecosystem for research. With immediate access, other researchers, industries, and companies can build on those discoveries to make new products, advance knowledge, and help people flourish. Open Access to research boosts innovation, increases national competitiveness and provides a better return on taxpayer investments in research.

At the University of Pittsburgh, we have a long history of improving the world by making our work openly available. When Dr. Jonas Salk created his polio vaccine at the University of Pittsburgh, it was supported by donations from more than 80 million people. Salk did not patent the vaccine, but rather shared it with the world, free of patent restrictions. When Edwin R. Murrow asked Dr. Salk who owned the polio vaccine, he famously replied, “Well, the people, I would say.” Today, millions of people support research funded by the United States government through their tax dollars. We believe that more scholars should follow in Dr. Salk’s footsteps and make the products of that research – whether they are life-saving vaccines, analyses of human behavior and psychology, or new interpretations of historical events – available to and usable by the people.

Beyond this argument, it is also true that the United States cannot play a leadership role in science if our scientists routinely cannot access critical research articles and data. Not even the most well-funded libraries can afford to subscribe to all of the journals that researchers could need. We cannot conduct cutting-edge research or train the next generation of scientists this way. At the University of Pittsburgh School of Pharmacy, Dr. Ravi Patel is working to assemble a data science course for pharmacy students to augment their training with data analysis techniques. Datasets he could use to help students learn the latest skills in data science are often proprietary, locked behind paywalls, or incomplete. If these students had access to datasets prepared for NIH-funded research they could not only learn and practice data science on real-world data, but could contribute to the ongoing research in these areas immediately while learning valuable skills for future research.

At Pitt, we have demonstrated the potential of American leadership on a global level by showing the impact of data sharing infrastructure above and beyond what is currently mandated by federal policy. In one example, our colleague Dr. Wilbert Van Panhuis leads the Coordination Center of the NIH-funded Models of Infectious Disease Agents Study (MIDAS), which was funded to establish U.S. modeling capabilities against infectious disease threats. The Pitt MIDAS Center is described as “a global infectious disease data matchmaking service”, and right now, many MIDAS members are conducting modeling research on COVID-19 and contributing their data information regarding the outbreak to help researchers unravel the causes and solutions to this pandemic. Another example of globe-spanning research is that done at the University of Pittsburgh’s World History Center, which has received funding from the National Endowment for the Humanities to create and synthesize datasets that reveal the forces that have shaped our global past and present. By compiling large datasets from around the world into a World-Historical Gazetteer, our researchers are creating a linked data ecosystem, standards, and user tools to support collaborative digital and data-driven historical scholarship at the global scale. To do this work, they need data to be available and reusable so that they can transform the datasets to be interoperable in order to analyze historical trends and events that cross national and continental divides. A strong national policy on openly accessible datasets for all disciplines would enable this kind of work.

In closing, we believe that all federally-funded research outputs should be discoverable, accessible, and usable – including data that are immediately urgent, and those with impacts yet to be known. An open access policy with immediate access and reusability to all research products, including data, will improve the rigor and reliability of taxpayer funded research by providing more transparency and the ability to verify results. This accessibility and transparency improve the public trust in science, and in US government funded science in particular. We thank OSTP again for facilitating this discussion, and encourage a strong, immediate open access policy for all results of publicly funded research.

Thank you again for this opportunity.

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Lisa Nichols, Assistant Director for Academic Engagement
Office of Science and Technology Policy
Re: RFI Response: Public Access

23 April 2020

Dear Asst. Dir. Nichols,

Thank you for opening up public comment on the topic of public access. We appreciate the opportunity to provide our thoughts about ensuring broad public access to the peer-reviewed scholarly publications, data, and code that result from federally funded scientific research.

Our comments reflect our mission as a professional organization of scientists and engineers, our responsibility to the membership, our desire to defend the integrity of our scientific publications, and our need to maintain the financial viability of our organization.

Fundamentally, the Society of Environmental Toxicology and Chemistry (SETAC) fully supports open science. It is inherent to our mission and intrinsic to our strategic goals of advancing science and promoting science-based decision making. Scientists should be able to verify the research of their peers, and then build upon that work to advance the field. It is imperative that all stakeholders should be able to judge the quality of the science to enable science-based decision making. Currently, our journals offer both green and gold open access options for authors. Our decision to shift to full open access will be predicated on our ability to ensure that access to reading content in the journal does not come at the expense of an author's ability to publish, and on the financial security to continue operations.

Specific to the questions posed by the Office of Science and Technology Policy, please find our feedback below:

What current limitations exist to the effective communication of research outputs (publications, data, and code) and how might communications evolve to accelerate public access while advancing the quality of scientific research? What are the barriers to and opportunities for change?

We believe that the current academic culture and value system poses a major limitation to public access.

First, academic researchers are rewarded—research is funded, they receive tenure and promotion, work is deemed successful—when they publish in “high-impact” journals. However, they are seldom acknowledged or supported for publishing 1) failed experiments and 2) their data or code. Were OSTP and important science funders to lean on research institutions to push for a culture where the prestigious research product includes all three—research publication, data (irrespective of whether they approve or disprove a

hypothesis), and if applicable, code—it could enhance communication of complete research outputs and advance the quality of scientific research.

Additionally, a move from a 12-month embargo to immediate open access will require smaller journals or those publishing in more niche areas of research to publish significantly more content in order to maintain their operations financially. This could result in a relaxation of standards, which does not benefit the community it serves. And, it could have a detrimental effect on the journal impact factor, which would therefore reduce the number of submissions and undermine the journal's ability to support their operations. Funding bodies could help change the culture by placing less urgency and pressure for funded authors to contribute their publications to journals with high impact factors.

And finally, effective scientific communication to the public is not necessarily through peer-reviewed scholarly journals or databases. Requiring and rewarding public synopses of the work might be a good interim step to accelerating public access. It is certainly an initiative in which scientific societies would be willing partners.

What more can Federal agencies do to make taxpayer funded research results, including peer-reviewed author manuscripts, data, and code funded by the Federal Government, freely and publicly accessible in a way that minimizes delay, maximizes access, and enhances usability? How can the Federal Government engage with other sectors to achieve these goals?

For the great majority of research, the current policies where US federally funded works and supporting data or code are made freely available through CHORUS and data repositories are likely sufficient.

It would certainly be beneficial if all publicly funded works were immediately available upon publication. However, publication, indexing, archiving and related tasks of publishing articles have real costs, and to make a large fraction immediately available for free could make the cost model unsustainable, especially if other countries and funders make similar demands. SETAC journals, like those of most professional and scientific societies, provide options for authors to have their research published under open access arrangements. The open access fees at our journals and most other reputable journals are modest, in the \$2400 to \$3000 range, which is probably on the order of 1% of the total budget to actually complete the research in the first place.

While much has been made of open access fees, it is important to note that many federally funded research products are published as agency technical reports, and the cost to funding agencies to produce these reports can greatly exceed that of the fees. Should OSTP determine that federally funded research should be published as open access without delay, that would be within its prerogative, but additional guidelines would be helpful in this instance (see final question).

And, finally, it is important to note that requiring federally funded work to be published under an open access model (that is to say, immediately without embargo) will certainly open up the literature to the public, but it may prohibit smaller projects from publishing at all. Implementing a policy with cost implications could discriminate against less funded research labs.

How would American science leadership and American competitiveness benefit from immediate access to these resources? What are potential challenges and effective approaches for overcoming them? Analyses that weigh the trade-offs of different approaches and models, especially those that provide data, will be particularly helpful.

The importance of national leadership and competitiveness varies among research areas. In our arena, better understanding and mitigating risks of chemicals industry is of global value. In addition to a stronger culture that supports scientists making data and code available with the research publication (rather than just a pdf report about the research data), science would benefit from community-owned, curated databases, which are expensive. In addition to physically accessible data, it is important that data corresponding with published research are complete. Access would also be more immediate if the data were appropriately linked and tagged.

Any additional information that might be considered for Federal policies related to public access to peer-reviewed author manuscripts, data, and code resulting from federally supported research.

Clear definitions of what constitutes "federally supported research" are important. A lot of research results from complex collaborations of private, other non-federal, and federally funding support. For example, if a university laboratory was built with partial support from a federal grant, is all research data from that laboratory "federal" forevermore? We suggest that "greater than 50% direct funding" constitutes "federally supported research."

Thank you again for the opportunity to comment. This response has been endorsed by the SETAC World Council.

Respectfully,

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April 23, 2020

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The American College of Cardiology (ACC) appreciates the opportunity to respond to the Request For Information on *Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research*, originated within the White House Office of Science and Technology Policy (OSTP). This policy considers opportunities for federally funded research to be made publicly available upon publication, potentially instituting a policy shift away from the current system that allows all research to be made publicly available after a twelve-month embargo period. As the professional home for the entire cardiovascular care team, the mission of the College and its more than 54,000 members is to transform cardiovascular care and to improve heart health. The ACC bestows credentials upon cardiovascular professionals who meet stringent qualifications and leads in the formation of health policy, standards and guidelines.

The ACC continually strives for a world where knowledge optimizes cardiovascular care and has concerns the current proposal actually may impede the scientific process, as we will discuss below. The ACC believes policy changes in this area could apply to all research manuscripts receiving federal funding that are submitted, peer reviewed, and accepted in our respective journals. We are concerned such a change could disrupt the research ecosystem in a manner that would create entry cost burdens to researchers in the publication of their scientific manuscripts, potentially delaying or diminishing improvements in the care of cardiovascular patients. Such a mandate could also inadvertently diminish physician-led research that is initiated by questions in the clinical setting that are most relevant to the patient, but oftentimes not funded by industry nor federal grants.

Immediate research deposits to preprint servers prior to the peer review process could be a potential pathway to satisfy the desire for public access to government-funded research. Preprint servers are freely available and accessible online, with scientific manuscripts posted by authors prior to peer-review and publication in an academic journal. The benefits of preprint servers include rapid dissemination of academic work, open access, establishing priority or occurrence, receiving feedback, and facilitating collaborations.

In 2013, the Holdren memorandum directed federal agencies that spend more than \$100 million a year to fund research and development to establish "clear and coordinated policies" to make the results of research they support publicly available within a year of publication. This 1-year mandate is the industry standard within science, technology, and medical publishing. The standard allows professional societies and publishers to recoup the expenses involved with supporting a rigorous peer review system with editorial boards of the

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Cathleen C. Gates

The mission of the American College of Cardiology and the American College of Cardiology Foundation is to transform cardiovascular care and improve heart health.

highest academic excellence, ensuring the highest quality research is disseminated to the cardiovascular clinician and researcher, and protects the public health.

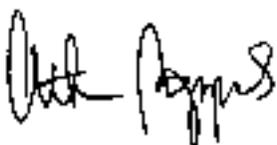
The Holdren memorandum allows medical societies and publishers to offer exclusive content to their physician members and institutional subscribers for one year, after which all content becomes freely available to all online readers. The leading general medical and cardiovascular peer-reviewed journals, including *New England Journal of Medicine*, *Journal of the American Medical Association*, *Journal of the American College of Cardiology*, *Circulation*, and *European Heart Journal*, among many others, adhere to this model. Within this construct, these entities advance research that improves care and eases the tremendous burden of cardiovascular disease in the United States and around the world.

While a potential shift to immediate public access could have a negative impact on publishers, it also has the potential to create significant downstream effects on cardiovascular patients, clinicians, and researchers. For example, an Executive Order requiring immediate availability would impact 20-40% of the research published in cardiovascular journals, forcing major clinically focused peer-reviewed journals to orient toward an Open Access model. Moving to an Open Access model shifts fixed publishing costs associated with rigorous peer review to the researchers and authors through article publishing charges (APCs), imposing significant financial burden to researchers and authors publishing manuscripts of clinical relevance. This would also negatively influence the number of researchers who pursue an academic career, consequently impacting the viability of the research enterprise and discoveries that improve population health. Another anticipated effect is an increase in the amount of grant monies requested of public funders, such as the National Institutes of Health, in order to cover the cost of publishing in an Open Access environment. Such a shift would effectively diminish the amount of funding available to the research and scientific community in the United States.

The ACC is deeply concerned by the potential negative ramifications to scientific research clinical practice, population health, and the publishing ecosystem that would result from such a precipitous shift. We are thankful to OSTP for holding stakeholder meetings and espousing a collaborative, iterative public discussion to avoid harm to the scientific publishing ecosystem. We encourage the Administration to continue this productive engagement and prioritize ongoing feedback to avoid sudden and disruptive change and collaboratively ensure openness and reliability in research development, which is a goal we all share.

Thank you for your time and attention to this important issue. We stand ready to participate in ongoing discussions to ensure our scientific community and our nation continue to lead the world in the development and delivery of cutting-edge research. Please contact Sarah Cartagena at scartagena@acc.org for any additional information.

Sincerely,



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The mission of the American College of Cardiology and the American College of Cardiology Foundation is to transform cardiovascular care and improve heart health.



We, the Coalition of Open Access Policy Institutions (COAPI) Steering Committee, thank the Office of Science & Technology Policy for requesting stakeholder information on this extremely important and timely topic. Our membership consists of librarians at over 110 colleges and universities that have implemented or are actively pursuing open access policies, requiring faculty to make a version of each of their peer-reviewed articles openly available for all to read. As active participants in the movement to make products of research more available and reusable, we submit our responses to your questions.

What current limitations exist to the effective communication of research outputs (publications, data and code) and how might communications evolve to accelerate public access while advancing the quality of scientific research? What are the barriers to and opportunities for change?

Federal agencies have the power to set new best practices, standards, and/or behavioral norms for researchers that will allow for more open and transparent sharing of research outputs. As representatives from colleges and universities whose faculty have decided to adopt open access policies, we can attest to the fact that barriers to research outputs and publications are a constant frustration for these faculty members. When researchers cannot easily and affordably exchange knowledge about new developments in their fields, the quality and efficiency of the research enterprise suffers. These barriers to publicly funded research are especially frustrating for our authors who have chosen careers in higher education--careers that are largely motivated by an interest in sharing scholarly knowledge. At the same time, faculty working at our institutions are keenly aware of an uneven playing field for researchers. Those working at large, well-funded universities are more likely to have access to subscription resources; while researchers in largely rural states, hospital systems, and many state-funded colleges and universities are less likely to have ready access to important research findings and resources. Even among some of our larger and better funded members, our faculty are aware of financial burdens carried by their libraries. As the cost of subscribing to resources continues to outpace library budgets, scholars know that

they are likely to lose access to an increasing number of journals and other resources in the future.

It is for these reasons that the faculty at our member institutions have decided to adopt open access policies. These policies enable authors to make their accepted, peer-reviewed articles freely available in open access repositories. Some of our members have successfully implemented their policies for over a decade; the benefits to their faculty (increased readership, exposure to potential collaborators, and satisfaction in fulfilling a mission to share the fruits of scholarship) have compounded, as has their faculty's support for the immediate open access to research. Our member institutions have demonstrated that authors can flourish when their research data and works are made freely available for others.

What can Federal agencies do to make taxpayer funded research results, freely and publicly accessible?

The COAPI Steering Committee encourages the Federal Government to implement a strong national policy that provides immediate, barrier-free access to the full results of taxpayer-funded research. Such a policy would align with efforts at our member institutions. We would welcome Federal policy that has the following characteristics:

- 1) Immediate access to published articles without embargoes
- 2) Articles should be openly licensed and made available in open and machine-readable formats that fully enable productive reuse including text/data mining and computational analysis
- 3) Data (and code, software, etc.) needed to validate/replicate the conclusions of articles should be made immediately available
- 4) Other appropriate data should be FAIR (Findable, Accessible, Interoperable, Reusable)
- 5) Free public access to and long-term preservation of these research outputs should be provided via either a digital repository maintained by the funding agency or in an appropriate institutional or disciplinary repository.

A clear statement from Federal funding agencies requiring immediate public access to research outputs would strengthen existing institutional policies by eliminating embargo periods and developing a national standard for managing and sharing data. Our member institutions already have workflows that streamline the process of complying with existing policies, and are poised to implement a new Federal policy. Using existing repository infrastructure provided by universities, funders, and scholarly societies would be a cost-effective method to immediately provide access and preservation to these research outputs, with no additional cost to authors or funders.

How would American science leadership and American competitiveness benefit from immediate access to these resources?

Open access to outputs of publicly funded research is a widely accepted international policy strategy to increase the government's return on investment in research. The U.S. is being left behind; other countries including China, Canada, EU members, India, and Brazil are adopting open access policies to accelerate their scientific research, boost innovation and increase competitiveness. Furthermore, private funders such as the Gates Foundation and the Wellcome Trust also have policies mandating open access of their funded research

Open access to research boosts innovation, increases national competitiveness and provides a better return on taxpayer investments in research. America cannot play a leadership role in science if our scholars routinely cannot access critical research articles and data.

A government-wide open access policy will support informed, transparent, federal budget and policy decision-making. It will increase Federal agency accountability and provide agencies with an improved accounting on the outcomes of their research. It will help appropriators, and authorizers more accurately assess the value of existing expenditures, and to target funding on the most promising research areas. An open access policy will improve the rigor and reliability of taxpayer-funded research by providing more transparency and the ability for easier verification of results. This will in turn improve the public trust in science and in research funded by the Federal Government in particular. Now, as the country works to address the COVID-19 pandemic, the transparency, rigor, and speed that open access policies facilitate are vitally important. Open research practices have benefited the responses to Ebola, H1N1, Zika, and other public health crises. A Federal policy with the characteristics supported in this response would position our country to best address similar challenges in the future.

Thank you for your time, consideration, and attention on this important topic. The COAPI Steering Committee is ready to address any questions you might have about our support for an expanded public access policy.

Respectfully,

Anali Maughan Perry, COAPI Steering Committee Chair,
on behalf of the Coalition of Open Access Policy Institutions

Abilene Christian University
Allegheny College
Amherst College

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Stanford University
State University of New York at Oneonta
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Request for Information: Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research

<https://www.federalregister.gov/documents/2020/02/19/2020-03189/request-for-information-public-access-to-peer-reviewed-scholarly-publications-data-and-code>

Wikipedia is one of the ten most popular websites in the world. Each month 200,000 editors improve over 6 million articles. This vital public information is viewed on 1 billion unique devices as our pages are loaded by people around the globe 7,000 times per second.

Wikipedia is the "free encyclopedia", both in its open CC-BY-SA licensing as well as the unpaid contributions of its volunteer editors. Yet Wikipedia's hundreds of thousands of editors struggle to access scholarly research. And, if they are able to read and cite it, then hundreds of millions of readers cannot verify or explore it for deeper research.

Citations are the bridge between Wikipedia articles and a broader landscape of reliable, secondary sources. Citations not only allow readers to verify the reliability of the facts they find in Wikipedia; through citations readers can also deep-dive into any given topic by exploring the books, scholarly publications, and news stories referenced in an article.

A recently released dataset of all citations with identifiers in Wikipedia found that less than half of the official versions of scholarly publications cited with an identifier in Wikipedia are freely available on the web. This chasm of for editors and for readers is a tragedy of public education and digital literacy.

Just look at the most recent global catastrophe with Coronavirus. By April 2020 the main articles on COVID-19 had received 50 million views. Wikipedia's medical content--made up of more than 155,000 articles and 1 billion bytes of text across more than 255 languages--has been ranked as one of the top-3 most viewed sources for medical information on the entire internet.

References are essential to the public's trust in Wikipedia. Indeed, Wikipedia's medical content is supported by 757,855 references in English and 1,596,528 in other languages, for a total of 2,354,383 across all languages. In English 168,985 have a [PMID](#) while 261,850 do in other languages. This means at least 430,835 references are journal articles.

What happens when those journal articles lie behind a paywall? The public suffers from a dearth of good information to make decisions about their lives as independent citizens and members of a global community.

As founder of *The Wikipedia Library*, I arranged partnerships with dozens of leading scholarly journals, to give Wikipedia editors free access to their reliable content and so they would be able to do effective and rigorous research. This time-intensive process took 6 years to amass access to only 1/5th of the most highly regarded academic publications. Frankly, Wikipedia editors--volunteers who selflessly give of their intelligence and passion to educate--should not have to beg and borrow to access publicly-funded research. Readers should not hit paywalls when they are seeking citizen-supported knowledge.

I implore you to make the bold but entirely reasonable decision and ensure that taxpayers have access to the vital scientific and scholarly studies that *they themselves fund*. This is not only sensible, it is essential to societal progress and human flourishing.

Sincerely,
Jake Orlowitz
Founder of The Wikipedia Library

These comments are provided on behalf of the American Library Association (ALA) and its division the Association of College and Research Libraries (ACRL), which serves nearly 10,000 academic and research librarians and interested individuals working in institutions of higher education, in response to a Request for Information issued by the White House Office of Science and Technology Policy. Our associations are in favor of public access to peer-reviewed scholarly publications, data, and code resulting from federally funded research. Public access to the results of federally funded research benefits all Americans, far beyond students and researchers.

There are more public libraries than Starbucks in the U.S. (16,568),ⁱ and the average American adult visits the library ten times a year—more than movie theaters, live sporting events, concerts, or museums.ⁱⁱ As such, librarians are uniquely positioned to understand the information needs of the U.S. population. Librarians help users learn the difference between a web search and research. For example, with so much health information online—much of it unreliable—librarians help their communities find health resources that are scientifically accurate and thoroughly vetted, playing a key role in promoting health literacy. Greater access to publicly funded research not only helps the general public understand health concerns but also provides access to critical research to those fighting the COVID-19 pandemic, as discussed later in these comments.

As reflected in our previous support for governmental policies and legislation that facilitate open access and open education—including the NIH Open Access Policy, the 2013 Office of Science and Technology Policy Memorandum, and the Fair Access to Science & Technology Research Act and Federal Research Public Access Act bills—ACRL is fundamentally committed to the open exchange of information to empower individuals and facilitate scientific discovery. Public access to taxpayer-funded research is a responsible measure to control library costs. The status quo of placing federally funded research behind a paywall is untenable and keeps libraries from providing equitable access.

In response to the specific question in the RFI, ACRL and ALA offer these comments.

- 1. What current limitations exist to the effective communication of research outputs (publications, data, and code) and how might communications evolve to accelerate public access while advancing the quality of scientific research? What are the barriers to and opportunities for change?*

Lack of access is the most significant limitation to the effective communication of research outputs, which acts as a barrier to scientific advancement and inhibits U.S. global leadership. The U.S. government spends billions of taxpayer dollars on research, but access to the results of that research is unnecessarily restricted. Costs to access the resulting literature (through subscriptions and through the purchase of individual articles) are so high that no researcher or research institution is able to afford to subscribe to all published research, and therefore no library can provide access to all publicly funded research until public access is a mandate. The cost of access is rising, creating an increasingly uneven playing field. Both subscription costs and article processing charges

(APCs; fees many journals charge authors to publish their work open access) continue to increase at unsustainable rates. Libraries' expenditures for scientific journals and similar ongoing resources increased 160% between 1998 and 2018; by comparison, the Consumer Price Index increased only 54% during the same period.ⁱⁱⁱ A second limitation to the effective communication of research outputs relates to how our current laws do not keep pace with technology. The power of artificial intelligence (AI) applied to machine-readable formats to machine-readable formats to discern patterns, identify trends, and otherwise analyze large data sets is limited by the availability of open access publications. This RFI frames the question of limitations around public access instead of open access. Public access provides a copy of the article in any format; open access to machine-readable formats is needed, especially to support U.S. Federal Government initiatives such as the American AI Initiative created through a 2019 Executive Order.^{iv} The federal government should advance policies not just for public access, but for open access.

Lack of access to research data also poses great challenges to scientific research. Scientists are reluctant to share data while waiting for papers to be published. But even once the paper is published, there is little incentive to make their data public. Data is often in proprietary formats that make it difficult or impossible for others to use, and the work that goes into making such data available and usable is not typically recognized by scientists' institutions or publishers, even though many journals do require sharing the data underlying a paper. Journals do not incentivize the replication of studies; thus, there are few reasons to use other researchers' data, resulting in little effort to ensure the reproducibility or replicability of findings.^v A federally mandated open access policy, with reasonable exceptions for human subjects research and research with national security interests, would require making this data more accessible and protect taxpayer investments in research and development.

2. What more can Federal agencies do to make tax-payer funded research results, including peer-reviewed author manuscripts, data, and code funded by the Federal Government, freely and publicly accessible in a way that minimizes delay, maximizes access, and enhances usability? How can the Federal Government engage with other sectors to achieve these goals?

Libraries have actively supported the 2013 Office of Science and Technology Policy memorandum requiring public access to research results.^{vi} We educate and provide assistance to our researchers in complying with this policy. However, the 12-month embargo still limits timely access to the vast majority of taxpayers—those who do not have access to the journals in which those results were published. As noted in a recent op-ed, “open access publication enhances transparency and public knowledge, and thus is crucial for fostering patient and public engagement with academic endeavors.”^{vii} Federal funding agencies can take further action to improve access by removing the 12-month embargo on access to articles and making all taxpayer-funded work openly available upon publication. This would level the playing field and enable everyone to have the best information to use in making critical decisions.

Technical restrictions inhibit scientific progress as well. Open licensing and machine-readable formats enable text mining and AI applications to drive more rapid discovery and advancement. Now is the time to bypass the obstacles and make research outputs

widely available in machine-readable formats to leverage this knowledge and foster further inventions and innovations. We can use existing technologies to improve how research is disseminated, evaluated, and communicated. By reinforcing the research community's commitment to sharing research data and information, and by eliminating the obstacles that hamper progress, we can accelerate economic development and improve accessibility.

Certain federal agencies have already taken steps to improve the accessibility of taxpayer funded research. For example, NIH's draft policy for data management and sharing would require scientific data resulting from research conducted using federal funding to be shared.^{viii} The policy's definition of scientific data goes beyond just making available the data underlying publications (indeed, as mentioned, many journals already require the sharing of this type of data), but also any recorded factual data material required to validate and replicate research findings. Adopting this policy across all federal agencies would improve the accessibility of federally funded research.

- 3. How would American science leadership and American competitiveness benefit from immediate access to these resources? What are potential challenges and effective approaches for overcoming them? Analyses that weigh the trade-offs of different approaches and models, especially those that provide data, will be particularly helpful.*

Immediate open access to federally funded research publications, data, and code would provide opportunities to advance quality research, ensuring America retains its place as a leader in scientific innovation and development. The importance of immediate open access to research is evident in the current COVID-19 pandemic. On March 13, 2020, the OSTP announced that President Trump's Science Advisor and government science leaders from around the world are calling on publishers to make all COVID-19-related research publicly available. The announcement also said that "research and data is more important than ever as we combat the COVID-19 outbreak."^{ix} Open access would allow quicker development of effective vaccines and treatments, better understanding of how the virus operates in the body and in populations, and quicker turnaround from science to public health policy.

Immediate open access should be the norm for all scientific papers and underlying data. Open access research will improve the responsiveness of the scientific community and reduce the consequences for all subsequent disease outbreaks—not just for community-transmitted pandemics, but also for vector-borne illnesses like Zika and West Nile. This will not be the last pandemic. A zero-embargo open access policy will improve American and global security in the face of future public health crises.

Lack of access and rising costs also hinder start-ups and small businesses. While academic libraries serve their university and its community, when students graduate they often lose access to scientific publications entirely. Many land-grant universities and other public institutions allow anyone from the community into the library to access subscribed resources, but not everyone lives near such a library, meaning that access is not equitable, especially in rural areas with lower population density.

The Human Genome Project is commonly cited as an example of the successful translation of government-funded research into increased economic activity. The federal government invested \$3.8 billion between 1988 and 2003. The project directly and

indirectly returned an economic impact of \$796 billion and an estimated 3.8 million job-years of employment.^x Similarly, investment in research at NASA has enabled commercial inventions, products, and businesses. In 2019, NASA's annual technology *Spinoff* reports cited over 2000 inventions, products, and businesses in areas as varied as health and medicine, public safety, and industrial productivity resulting from their initial research.^{xi}

Other parts of the world have explored the economic impact of increasing access to government-funded research results and have found significant benefits to providing immediate access. For example, the European Union conducted a study on the reuse of information that public bodies produce, collect, or pay for and found that the direct economic value of public sector information was estimated to be €52 million. Projections for the value in 2028 ranged from €150 billion to €215 billion, depending on the policy implemented.^{xii} U.S. science leadership will be at a disadvantage if it does not adopt similar policies.

As OSTP Director Droegemeier wrote in 2019, "Our Nation leads global scientific progress by example, promoting core principles of freedom of inquiry, scientific integrity, collaboration, and openness."^{xiii} However, in the 2018 Science and Engineering Indicators report, the National Science Board noted that although the U.S. is currently the global leader in science and technology, our global influence is decreasing.^{xiv} Open sharing leads to innovation and drives scientific advancement, and the U.S. scientific leadership position will be bolstered by expanding openness.

Beyond business interests, state and local governments need timely access to research to solve the problems they are facing. Doctors, teachers, and practitioners across all sectors need timely access to the best research to inform their treatments and practices.

4. Any additional information that might be considered for Federal policies related to public access to peer-reviewed author manuscripts, data, and code resulting from federally supported research.

We are preparing this letter in the midst of the outbreak of COVID-19. This public health crisis is wreaking havoc on economic markets and causing most sectors to drastically alter operations. The crisis also provides a clear and timely example of the dysfunction of the closed scholarly communication system. While several of the largest commercial publishers signed onto a Wellcome Trust statement to ensure that research findings and data relevant to the COVID-19 outbreak are openly available, it is not sufficient. One analysis found that more than half of articles on coronaviruses remain behind paywalls. Even if those articles were opened, researchers would still not have access to all cited sources.^{xv} Elsevier has deposited its published COVID-19-related research into a new COVID-19 resource center and granted temporary permission to make this research available with provisional rights for unrestricted research reuse and analyses in any form and by any means with acknowledgement of the original source. However, these permissions are only "granted for free by Elsevier for as long as the COVID-19 resource center remains active."^{xvi} The legal ambiguity created in this language is counterproductive and Elsevier has claimed that it can revoke permission, thus breaking any systems that were built on the data set. There is a clear need for immediate unrestricted access to scientific articles and data. The American scientific community will accomplish so much more if immediate access to published research became the default.

Conclusion

To advance scientific progress, student learning, U.S. global leadership and competitiveness, and quick and informed response to health threats such as COVID-19, we urge the Administration to provide for immediate open access to taxpayer-funded research. Thank you for your consideration.

ⁱ<http://www.ala.org/aboutala/sites/ala.org.aboutala/files/content/QuotableFacts2017.ANNOTATED.FINAL.01.06.17.pdf>

ⁱⁱ<https://news.gallup.com/poll/284009/library-visits-outpaced-trips-movies-2019.aspx>

ⁱⁱⁱ<https://www.arl.org/wp-content/uploads/2019/10/expenditure-trends.pdf>.

^{iv}<https://www.whitehouse.gov/ai/>.

^v<http://blogs.nature.com/naturejobs/2016/10/21/why-dont-scientists-always-share-their-data>.

^{vi}<https://obamawhitehouse.archives.gov/blog/2013/02/22/expanding-public-access-results-federally-funded-research>.

^{vii} Open to the public: paywalls and the public rationale for open access medical research publishing. <https://researchinvolvement.biomedcentral.com/articles/10.1186/s40900-020-0182-y>.

^{viii}<https://www.federalregister.gov/documents/2019/11/08/2019-24529/request-for-public-comments-on-a-draft-nih-policy-for-data-management-and-sharing-and-supplemental>.

^{ix}<https://www.imagewiki.nibib.nih.gov/content/ostp-president-trumps-science-advisor-and-government-science-leaders-around-world-call>

^x Economic Impact of the Human Genome Project. (2011).

https://web.ornl.gov/sci/techresources/Human_Genome/project/economics.shtml.

^{xi}<https://spinoff.nasa.gov/Spinoff2019/pdf/Spinoff2019.pdf>.

^{xii} European Commission. Study to support the review of Directive 2003/98/EC on the re-use of public sector information. 2018. <https://ec.europa.eu/digital-single-market/en/news/impact-assessment-support-study-revision-public-sector-information-directive> .

^{xiii}<https://www.whitehouse.gov/articles/america-leading-world-science-technology>.

^{xiv} Science & Engineering Indicators 2018. <http://www.nsf.gov/statistics/2018/nsb20181/>.

^{xv} Lariviere et al., (2020). The Coronavirus (COVID-19) outbreak highlights serious deficiencies in scholarly communication.

<https://blogs.lse.ac.uk/impactofsocialsciences/2020/03/05/the-coronavirus-covid-19-outbreak-highlights-serious-deficiencies-in-scholarly-communication/>.

^{xvi}<https://www.elsevier.com/connect/coronavirus-information-center>.

Response OSTP RFI

4.17.2020

HHMI believes that free and immediate open access of research articles and associated data maximizes the potential use of research findings. For these reasons, HHMI is working toward immediate open access for all scientific research, including our own. We believe that transforming publishing has the potential to transform science itself, making it faster, better, and more impactful.

In response to the specific questions posed by the RFI:

1. What current limitations exist to the effective communication of research outputs (publications, data, and code) and how might communications evolve to accelerate public access while advancing the quality of scientific research? What are the barriers to and opportunities for change?

The most significant limitation in the communication of research outputs is lack of access by humans and also computers. Today, 75% of research articles are locked behind subscription paywalls that restrict usage, limiting data-mining and -remixing which is an integral part of generating new scientific knowledge. In addition, we would argue that these limitations are unacceptable for research funded by the Federal Government: research supported by the public should be accessible to all. After all, science and society benefit when humans and machines have free access and use rights to the latest scientific advances. The Federal Government and other research leaders, including HHMI, have the opportunity to work together with the research community, university leadership, libraries, and publishers to make research communications more efficient, cost-effective and sustainable beyond open access.

At HHMI, we are considering a future state in which dissemination of research articles is separated from evaluation. In such a publishing ecosystem, when they are ready to do so, scientists could share their work on open-access repositories like preprint servers (such as bioRxiv or medRxiv) and data repositories. This would significantly accelerate access to scientific research because these platforms can disseminate research much faster and more cost-effectively than journals. A collection of organizations (including journals) could organize peer review and provide curation by evaluating, selecting and highlighting various features of a publication for different audiences. Authors would respond to the feedback they receive in revised versions of the article uploaded to open-access repositories. We and others envision that this process which we refer to as ‘publish-review-curate’ or PRC, could become the default publishing mode in the future ([Stern and O’Shea, 2019](#); [Sever et al. 2019](#)).

There are three significant barriers that stand in the way of improving scientific communications:

- The established journal-based publishing system reports above average profits and therefore has few economic incentives or other motives to change.

- The academic hiring and promotion system relies on flawed journal metrics as a proxy for quality and impact. In so doing, it supports the established journal-based publishing system, especially those that publish high impact factor journals.
- A new evaluation ecosystem needs to be created to replace journal-based metrics – one that takes advantage of a distributed, digitally connected scientific community to certify trustworthiness of research outputs.

The Federal Government has unique opportunities to catalyze change right now:

- Open access publishing is growing. Successful open access journals demonstrate that an open access business model works; preprint servers are growing in popularity and offer a preview of how open dissemination can happen faster, more easily and more cost effectively than ever before.
 - The COVID-19 pandemic makes clear the importance of open access and open science to develop diagnostics, treatments and vaccines. This administration is positioned to take a bold step for science, by recognizing the power of this moment and setting a new standard for open and immediate communication of all research.
 - Experiments in article-level (as opposed to journal-level) evaluations are springing up, highlighting an appetite to explore new ways to evaluate research outputs. A call for immediate open access of federally funded research would promote these efforts.
2. What more can Federal agencies do to make tax-payer funded research results, including peer-reviewed author manuscripts, data, and code funded by the Federal Government, freely and publicly accessible in a way that minimizes delay, maximizes access, and enhances usability? How can the Federal Government engage with other sectors to achieve these goals?

The Federal Government can mandate that all taxpayer-supported research be made freely available upon publication, under a CC BY license that has been used by major open access publishers for nearly two decades. Making research outputs immediately and freely available under this license minimizes delays and maximizes access for people and computers. An open access requirement should apply, at minimum, to the article version that authors submit to the journal after peer review (the so-called author accepted manuscript). It should not be limited to the initially submitted version (the ‘preprint’) which does not include author revisions that often improve scholarship and clarity of the article.

The Federal Government can engage with technology developers, other scientific funders and leaders, and scientific societies to develop and support common infrastructure required for a ‘publish-review-curate’ world such as publishing repositories like bioRxiv and medRxiv as well as data/code repositories. Providing such an infrastructure would allow scientists and service providers to focus on customized overlay services – such as peer review and curation – that could be tailored to the needs of the different stakeholders they serve. Stakeholders include funders, universities and institutions, researchers, scientific societies, teachers, patient advocacy groups, etc.

3. How would American science leadership and American competitiveness benefit from immediate access to these resources? What are potential challenges and effective approaches for overcoming them? Analyses that weigh the trade-offs of different approaches and models, especially those that provide data, will be particularly helpful.

American science leadership and competitiveness lies in its ability to innovate and design new services and products. The free flow of information among scientists, research institutions, and industry will accelerate the discovery process and commercialization of scientific research. It will decrease duplication of research efforts, encourage interdisciplinary interactions, and open up possibilities for knowledge to be used in unexpected, creative and innovative ways.

Some challenges exist, for example for scientific society publishers which have already lost market share to commercial publishers and lack resources to take full advantage of digitization. Most society journals will find it challenging to transition from subscription to open access income because the latter, at least in its current form of article publishing charges, is best suited for high volume publishers that society journals typically are not.

But approaches for overcoming these challenges exist as well. Annual Reviews, a not-for-profit publisher, is experimenting with an idea known as 'subscribe to open' where existing library subscription payments continue so that the journal content can be open access. The 'publish-review-curate' process described above also offers a diversity of business models. Society publishers may find these attractive because they could leverage the expertise of their communities to organize peer review in exchange for a peer review service fee; or they could curate the literature to help readers find the content they are most interested in. Such curation services could be monetized with subscription fees since only primary research articles and data would fall under funder requirements for immediate open access of research results.

We are not aware of analyses that weigh trade-offs of different approaches. In part that may be because it is hard to predict what exact path scientific publishing will take over the coming years in response to the push for immediate open access. It does seem likely that we won't have (and won't need) tens of thousands of journals in the future. These uncertainties should not stop funders from pursuing universal open access but they point to a need for a transition period of perhaps several years to allow publishers to adapt. Proponents of open access, such as cOAlition S, have developed a transition plan for hybrid and full subscription journals to transition to immediate open access. This plan includes (i) gradually increasing the share of open access content, (ii) offsetting subscription income from payments for publishing services (to avoid double payments), and (iii) committing to an agreed timeframe.

4. Any additional information that might be considered for Federal policies related to public access to peer-reviewed author manuscripts, data, and code resulting from federally supported research.

Over time, the Federal Government could incentivize institutions and researchers to practice all forms of open science (articles, data and code). This would encourage academic institutions to realign incentive and reward structures to value open science, expanding the gains of open communication to benefit the practice of science more broadly.



AMERICAN
PSYCHOLOGICAL
ASSOCIATION

April 17, 2020

Lisa Nichols
Assistant Director for Academic Engagement
Office of Science and Technology Policy (OSTP)

Submitted electronically at publicaccess@ostp.eop.gov

RE: Public Access to Peer-Reviewed Scholarly Publications, Data, and Code Resulting From Federally Funded Research (Document Number 2020-03189)

Dear Dr. Nichols:

As CEO, I write on behalf of the American Psychological Association (APA), a scientific and professional association of almost 121,000 members, affiliates, and students. APA's mission is to promote the advancement, communication, and application of psychological science and knowledge to benefit society and improve lives.

APA's recommendations, discussed more fully below, include the following:

1. Protect the freedom to publish without payment. Federal intervention that pushes for a mandatory pay-to-publish model (e.g., Gold Open Access) discriminates against researchers from various underrepresented groups, in particular early career researchers.
2. Preserve a healthy and diverse research ecosystem to best serve the American public. Rather than taking an ideological view that Open Access is the one and only model, federal policy should support all models that advance the scientific enterprise of the United States.
3. Engage and collaborate with APA and funders to develop psychology-specific solutions that not only make the data and code in our field accessible but that also make them structured and standardized enough to be useful and applicable in other scenarios while ensuring appropriate privacy and intellectual property (IP) safeguards.

Below we offer comments on each of your requested topics, followed by additional comments on APA's longer term direction.

Effective Communication of Research Outputs in Scientific Journals

What current limitations exist to the effective communication of research outputs (publications, data, and code) and how might communications evolve to accelerate public access while advancing the quality of scientific research? What are the barriers to and opportunities for change?

The topics addressed in this section are at the heart of APA's unique role as a publisher of scientific journals, and APA supports the scope and direction of open science as a collaborative effort among many players to ensure the development, curation, and promotion of quality science that benefits society. APA strongly believes that the ultimate objective of funders, researchers, and publishers should be advancing the quality and pace of scientific research. Improving the availability of peer-reviewed articles, data, and code is one of many means to that end, but "openness" should not be treated as an end unto itself. Doing so potentially creates a number of unintended consequences that will actually harm the quality and pace of scientific research. We all need to work together to ensure the development, curation, and promotion of quality science, not just open science. If funder mandates, such as the elimination of the 12-month embargo for federally funded research, undermine the viability of the subscription model in journal publishing, both psychological research, with its relatively minimal levels of funding (3.2% of federal research funding in 2016 per the National Science Foundation), and psychological researchers, with their positive impact on addressing many of society's challenges, will be harmed. Subsequently, the American public will derive fewer benefits from the research that they are funding with their tax dollars.

The February 22, 2013, Office of Science and Technology Policy Memorandum [Increasing Access to the Results of Federally Funded Scientific Research](#) stated, "It is also important that Federal policy not adversely affect opportunities for researchers who are not funded by the Federal Government to disseminate any analysis or results of their research." APA strongly supports a continuation of that provision of the 2013 policy. APA believes the elimination of the 12-month embargo would lead to the demise of the subscription model of journal publishing that allows all researchers to publish in the journals of their choice even if they do not have the funds to publish. Elimination of the current embargo could result in some publishers rushing to publish as many Gold Open Access articles as possible in an effort to maximize revenues at the expense of publishing quality research. The demise of the subscription model would in turn adversely affect the majority of psychological researchers and, therefore, the field of psychology itself.

Currently, under the subscription model, the only barrier to publication for psychological researchers is the quality of their research and the resulting article. In effect, the elimination of the 12-month embargo would create a new barrier: Researchers would have to secure funding to be published. We need to protect the freedom to publish without payment. In a pay-to-publish model, only those with significant levels of funding can continue to publish. The resulting inequalities have been described by Professor Jefferson Pooley on the London School of Economics Impact Blog (<https://blogs.lse.ac.uk/impactofsocialsciences/2020/02/21/read-and-publish-open-access-deals-are-heightening-global-inequalities-in-access-to-publication/>). This unintended but very real discrimination would affect the following communities:

- Members of underrepresented groups (e.g., racial or ethnic minorities), who are less likely to receive grants—in effect, homogenizing psychology at a point when the discipline is striving to be more representative of diverse viewpoints and more representative in participant recruitment
- Early career psychologists, who typically struggle to get funding
- Researchers at private liberal arts colleges and community colleges
- Researchers in the Global South, with whom American researchers need to collaborate to advance the field and study of psychology

In APA’s view, it is not possible to have quality science if the scientific process and ecosystem are not inclusive. We cannot afford to go back to a time when science was dominated by a small and privileged group. We have come too far for that.

Championing diversity and inclusion is one of APA’s core values. Funders and publishers need to work together to evolve scholarly communications, but we need a transparent dialogue where we think holistically about how to advance quality science in a way that is nondiscriminatory. APA has already made significant progress in incorporating Open Science principles into psychological research, and we welcome the opportunity to further enable progress with the broader research community.

Bolstering Public Access to Federally Funded Research Results

What more can Federal agencies do to make tax-payer funded research results, including peer-reviewed author manuscripts, data, and code funded by the Federal Government, freely and publicly accessible in a way that minimizes delay, maximizes access, and enhances usability? How can the Federal Government engage with other sectors to achieve these goals?

Research results have significantly more impact after publishers bring quality standards, peer review, curation, version control, linking, and community building into the scientific process. A robust publishing process also greatly increases the likelihood that erroneous research conclusions are identified and addressed. Publishing activities require both time and investments to ensure quality science. We need to develop a model that ensures their continuation.

Recently, we saw clear and distressing evidence of what can happen when effective peer review and a careful publishing process are lacking. U.S. policymakers based their decision to reject WHO COVID-19 testing kits on a flawed research article that had already been retracted but that was sitting, freely available, in PubMed (<https://www.wired.com/story/the-science-of-this-pandemic-is-moving-at-dangerous-speeds/>). If journal publishers are weakened, stories of this kind will become more and more commonplace.

You will agree with us that much of the data and code resulting from federally funded research, in its raw form, is not particularly useful. APA is eager to work with OSTP and funders on developing solutions that not only make data and code accessible but that also make them structured and standardized enough to be useful and applicable in other scenarios. APA sets the standards for psychological research through important initiatives such as our Journal Article

Reporting Standards (JARS) for quantitative, qualitative, and mixed methods research (for more details, see <https://apastyle.apa.org/jars>). We have made significant progress within psychology, and we want to continue this progress in alignment with federally mandated standards.

Science and access to science must be equitable and nondiscriminatory. Mandates that have the effect of discriminating against less well-funded and underrepresented groups are a step backward for U.S. science. We cannot advance quality science without being inclusive. We need a solution that works for all disciplines, including psychology. It is critical that psychology and disciplines from all areas of research remain part of the conversation.

APA as Global Research Collaborator

How would American science leadership and American competitiveness benefit from immediate access to these resources? What are potential challenges and effective approaches for overcoming them? Analyses that weigh the trade-offs of different approaches and models, especially those that provide data, will be particularly helpful.

APA has embraced a global perspective because we believe that psychological research can be advanced only through international engagement and collaboration. We consider it part of our role to build a global community of psychological researchers.

Part of being a global science leader is making a genuine attempt to understand the perspective of other countries and cultures. APA, in collaboration with many partners in the publishing industry, makes our journal content available at low or no cost to institutions in developing nations via programs such as Hinari and Research4Life. To advance the field of psychology, researchers from these countries must also have the freedom to publish without payment. Increasing access to content from well-funded communities only, at the expense of lesser funded researchers and disciplines, is not progress. We must, therefore, protect the viability of the subscription model, particularly for researchers in disciplines such as psychology that receive relatively lower levels of funding.

If we impose solutions that work for only the privileged few, America is not a true global leader, and we risk harming our competitive position in the world. Rather than taking an ideological view that Open Access is the one and only model by which we can advance scientific research, we must be open to a world where mixed models are available and supported by federal policy. The American public will be better off as a result.

Closing Comments

Any additional information that might be considered for Federal policies related to public access to peer-reviewed author manuscripts, data, and code resulting from federally supported research.

APA strongly urges OSTP to consider the potential negative consequences of an Executive Order eliminating the 12-month embargo. APA already engages with a broad set of stakeholders to advance access to research content, including data and code. We welcome engaging OSTP in these efforts.

It would be a mistake if unilateral federal action undermines the very research communications ecosystem that has advanced U.S. science for decades. The general public will not be served if OSTP actions erode the freedom for psychologists to publish in the journals of their choice without payment. The strength of psychological research is grounded in its diversity and breadth. We urge OSTP to protect the freedom to publish without payment and support all models that advance the scientific enterprise.

Sincerely,

A handwritten signature in black ink, appearing to read 'Arthur C. Evans, Jr.', with a long horizontal flourish extending to the right.

Arthur C. Evans, Jr., PhD
Chief Executive Officer
American Psychological Association

April 16, 2020

Office of Science and Technology Policy
Executive Office of the President
Eisenhower Executive Office Building
1650 Pennsylvania Ave
Washington DC, 20504

OSTP Request for Information: Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research

To The Office of the President for the Office of Science and Technology Policy (OSTP):

Thank you for taking the time to consult with stakeholders regarding the potential update to existing U.S. policy on access to research outputs.

As the University of California, Los Angeles Academic Senate's Committee on Library and Scholarly Communication (COLASC), we are pleased to comment on the Office of Science and Technology Policy (OSTP) Request for Information (RFI) regarding Public Access to Peer-Reviewed Scholarly Publications, Data and Code, Resulting from Federally Funded Research.

Lack of access to publicly-funded research is a big problem. The United States government spends billions of taxpayer dollars on research, and the public has a right to access and use those results.

UCLA's Committee on Library and Scholarly Communication supports the zero-embargo policy for author-accepted manuscripts. The committee believes that the government should implement a strong national open access policy to ensure that taxpayers get immediate access to the results of scientific research that their tax dollars have funded. Such a policy would represent a move that would align with the University of California mission to serve society and provide long-term benefits through the transmission of research and knowledge.

Internationally, zero-embargo policies are becoming the norm. Countries in Europe, Asia and South America are adopting Open Access policies to accelerate scientific research, and the United States is falling behind. Our scientists need to quickly access critical research articles

and data to play a leadership role in science. Moving to a zero-embargo model is critical for higher education institutions, particularly a public institution such as ours. Not even the most well-funded campus libraries can afford to continue to pay subscription fees for all of the journals that their researchers need. Moving toward zero-embargo policies may help move publishers to pay-to-publish models of payment, in which a fee (often called an “Article Processing Charge”) is charged to publish in a journal, rather than the current model in which people pay to read articles.

We thank you for giving the University of California, Los Angeles, Committee on Library and Scholarly Communication the opportunity to provide feedback on this important issue. We encourage the federal government to immediately implement a strong open access policy for the results of publicly funded research.

Sincerely,

A handwritten signature in black ink, appearing to read 'Derjung' followed by a long horizontal flourish.

Derjung “Mimi” Tarn, Chair
UCLA, Committee on Library and Scholarly Communication

cc: Dennis J. Ventry, University Committee on Library and Scholarly Communication, Chair
Michael Meranze, Academic Senate, Chair
Shane White, Academic Senate, Vice Chair/Chair-Elect
Joseph Bristow, Academic Senate, Immediate Past Chair
April de Stefano, Academic Senate, Executive Director
Members of the Committee on Library and Scholarly Communication

April 10, 2020

TO: Dr. Lisa Nichols
Assistant Director for Academic Engagement
Office of Science and Technology Policy
Submitted via email: OpenScience@ostp.eop.gov

FROM: Marta Margeta, MD, PhD, Chair, and Keith Mostov, MD PhD, Vice Chair, UCSF
Committee on Library and Scholarly Communication

CC: Todd Giedt, Executive Director, UCSF Academic Senate

RE: Docket ID [OSTP-2020-0004](#) Request for Information: Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research (RFI Response: Public Access)

Dear Dr. Nichols:

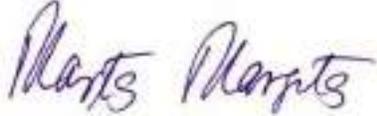
We write on behalf of the University of California, San Francisco (UCSF)'s Committee on Library and Scholarly Communication with regard to the *Request for Information (RFI): Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research*, issued on February 19, 2020.

UCSF has long been a leader in supporting open access. In May 2012, the UCSF Academic Senate [unanimously adopted a faculty open access policy](#), becoming the largest scientific institution in the nation and among the first public universities to do so. With UCSF leadership, the systemwide Academic Council adopted the [2013 Academic Senate Open Access Policy](#) that endorsed the [Declaration of Rights and Principles to Transform Scholarly Communication](#). UCSF and UC faculty remain deeply engaged in directing systemwide open access initiatives in partnership with the UC Libraries.

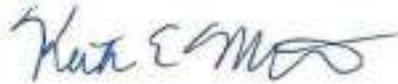
UCSF's Committee on Library and Scholarly Communication strongly supports the provision of "broad public access to the peer-reviewed scholarly publications, data, and code that result from federally funded scientific research" through a zero-embargo policy for the author's accepted manuscripts. Such a policy would represent a significant step toward eliminating the barriers created by the paywall of subscription journals, allowing for the free flow of scholarly information, the vast majority of which is supported through public and philanthropic funding. Immediate online access to the research funded and published with federal support is fundamental to fulfilling the full potential of public investment in science. As critical leaders in open access transformation, UCSF faculty affirm the benefits to society that will result from this policy, supporting the UCSF mission of *advancing health worldwide*.

Transformation of the scholarly ecosystem will undoubtedly bring disruption to scholarly societies, many of which depend on subscription revenue to support their activities. In collaboration with the UCSF Library, UCSF faculty are committed to supporting societies in making a successful transition to open access. The adoption of a zero-embargo policy will push societies and their publishers to develop open and sustainable scholarly publishing models.

Sincerely,



Marta Margeta, MD, PhD, Chair



Keith Mostov, MD, PhD, Vice Chair

Committee on Library & Scholarly Communication, 2019-2020

Annette Carley, RN, DNP, NP, School of Nursing

Charles Hart, PhD, School of Pharmacy

Arthur Hill, MD, School of Medicine

Cristin Kearns, DDS, MBA, School of Dentistry

Bridget O'Brien, PhD, School of Medicine

Bryan Marsh, Graduate Student in Developmental and Stem Cell Biology

Min-Lin Fang, MLIS, Ex Officio, Representative of the Librarians Association of the University of California

Christopher Shaffer, MLIS, Ex Officio, University Librarian



c/o Phoebe Grigg
600-16th St Ste N312E MC2200
San Francisco, CA 94143-2517
asapbio.org

2020-04-10

Dr. Lisa Nichols
Assistant Director for Academic Engagement
OSTP
publicaccess@ostp.eop.gov

Re: Request for Information: Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research ([85 FR 12949](#))

Dr. Nichols,

ASAPbio is a biologist-driven 501(c)(3) working to promote transparency and innovation in life sciences publishing. Specifically, we organize convenings, generate resources, and build community capacity to advance the use of preprints and open peer review.

We believe that open access to peer-reviewed publications, code, and data is necessary to maximize the benefits from American investment in science and technology, advancements in which depend on access to existing knowledge. In order to preserve American scientific leadership and competitiveness, taxpayer-funded research must be openly available to researchers and entrepreneurs. Furthermore, physicians and patients should not be barred from accessing the latest peer-reviewed findings so they can stay up-to-date on health conditions as they are today.

The current COVID-19 pandemic highlights this point. Recent decisions by subscription-based publishers to [make related work temporarily available](#) for the duration of the emergency demonstrate the broad consensus that open access serves the public good and can accelerate science. Now is the time to build on this momentum, so that for all federally-funded research programs, all publications are immediately accessible for all time.

We therefore support proposals that federal agencies eliminate the twelve-month post-publication embargo period, ensuring immediate access to research outputs. ASAPbio also supports the development of funder policies to strongly encourage or require preprint deposition, especially when integrated with complementary changes in assessment practices. However, we also emphasize that preprint mandates are a supplement, not a substitute, for making final, peer-reviewed articles publicly accessible.

We are happy to provide further information or participate in discussions concerning any of these topics.

Sincerely,

A handwritten signature in black ink, appearing to read 'JP' or similar initials, positioned below the word 'Sincerely,'.

Jessica Polka, PhD
Executive Director, ASAPbio



FLORIDA STATE UNIVERSITY
LIBRARIES

Gale Etschmaier
Dean of Libraries
Florida State University Libraries

March 26, 2020
Office of Science and Technology Policy (OSTP)
NSTC Subcommittee on Open Science (SOS)

Florida State University Libraries Response to Request for Information: Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research

Background

Florida State University Libraries in Tallahassee, Florida, would first like to thank the Office of Science and Technology Policy (OSTP) and the National Science and Technology Council's (NSTC) Subcommittee on Open Science (SOS) for taking an interest in the issue of public access to scholarly publications, data and code. The time that members of the OSTP take to consult with impacted constituents and organizations is deeply appreciated.

FSU Libraries services support 1,915.3 filled FTE full-time faculty positions and 41,717 student enrollment (FSU 2018-19 Institutional Research Report). Researchers and scholars at FSU include Nobel Laureates, Fulbright Scholars, John Simon Guggenheim Memorial Foundation Fellowship Award Winners, members of the National Academy of Sciences, and American Academy of Arts and Sciences.

Responses

“What current limitations exist to the effective communication of research outputs (publications, data, and code), etc.?”

Many limitations exist with respect to scholarly articles. The U.S. government spends billions of taxpayer dollars on research, and the public has a right to access and use those results. Taxpayers paid for the research, but the only way to see the results is through expensive journal subscriptions or article pay-per-view access. These paywalls effectively prevent the majority of U.S. taxpayers from accessing publicly funded research findings, even in academic disciplines where free access would be enormously beneficial, such as public health, education, and science, technology, and mathematics, to name a few examples. Further, even when articles are accessible, they are typically not made available with open copyright licenses that would permit researchers to use computational approaches such as text and data mining - efforts which could greatly improve the value of these research outputs.

The Florida State University Libraries have experienced the challenges and inherent unsustainability of this model first hand. First in 2016 and then again in 2019, we were forced to cancel big deal journal

subscription packages (with Springer and Elsevier, respectively), simply because we were no longer able to afford access. This prevented all FSU researchers - from freshmen undergraduate students to tenured faculty members - from accessing articles published in thousands of academic journals and almost certainly slowed the pace of research and discovery on our campus. If the situation does not change, we will inevitably be forced to cut additional journal packages as the publishers continue to increase prices. Of course, our experience at FSU is just a microcosm of a much larger phenomenon: academic libraries across the U.S. are being forced to confront exactly the same challenge.

There are also significant limitations regarding the availability of data and code associated with research endeavors. A 2016 survey revealed that over 70% of researchers have tried and failed to reproduce the experiment of another scientist. The same survey also revealed that over half of the researchers considered the reproducibility of science to be a significant crisis (<https://www.nature.com/news/1-500-scientists-lift-the-lid-on-reproducibility-1.19970>). Around the same time period, the FAIR Data Principles, which aim to make all research data findable, accessible, interoperable, and reusable, were established. In order to meet these standards, data and supplementary materials should have significantly rich metadata that is understandable to humans and machines and be deposited in a trusted repository. Data and metadata should also use an accessible and broadly applicable language, have clear usage licenses, and contain sufficient information for provenance.

However, a significant portion of research data associated with scholarly publications currently does not meet the FAIR standards, which limit public access to data associated with federally funded research. For example, the data and information presented in scholarly articles are typically summary figures and lack sufficient metadata that would allow researchers to reproduce experimental results. This data is often hidden behind paywalls and only available in proprietary file formats, which greatly hinders the ability of researchers and the general public to access the results of research studies. Also, there is limited infrastructure (such as data repositories) available for researchers to freely publish the data and code required to reproduce the results of their research. Furthermore, a major limitation inhibiting the widespread adoption of FAIR data standards by researchers is the lack of enforcement and consideration of current data sharing mandates from federal funding agencies. Not only would increased policy enforcement and increased investment in data infrastructure alleviate many of these issues, it would reduce barriers to access to scientific information that can be leveraged for future research. These reduced barriers can streamline scientific discovery and enhance innovation.

Since 2015, librarians at FSU have been supporting Principle Investigators' [PIs] efforts to comply with federal data management requirements. The most common issues that the researchers we work with encounter are either the potential costs associated with depositing a data into a repository or the lack of an appropriate subject repository to deposit their data in. Increased investment in funding opportunities for research communities or academic institutions to develop data repositories and other infrastructure that facilitates data sharing would go far in alleviating these issues. Furthermore, equal effort should go toward investing in the sustainability of existing data infrastructure, considering the significant costs associated with supporting these systems.

“What can Federal agencies do to make taxpayer funded research results, freely and publicly accessible? Etc.”

Federal agencies are arguably the best placed stakeholder to make a difference in improving access to taxpayer-funded research outputs. The other actors - authors, publishers, and libraries - have shown over the past 20 years that they are either unwilling or unable to transform the subscription model to

accommodate free and open access - at least not without help. Action on the part of federal agencies would make an enormous difference in realigning incentives to precipitate real and lasting change.

Specifically, the federal government should implement a strong national policy to ensure that taxpayers finally get immediate, barrier-free access to the full results of the scientific research that their tax dollars have funded. This policy should require:

- 12-month embargo period on articles should be eliminated. Final peer-reviewed manuscripts or published articles should be made available immediately upon publication.
- Articles need to be openly licensed to ensure full utility. (CC-BY or similar license, or public domain designation)
- Data (and code, software, etc.) needed to validate or replicate the conclusion of an article should be made immediately available.
- Other appropriate data should be FAIR (Findable, Accessible, Interoperable, Reusable).
- Final peer-reviewed manuscripts or published articles should be made available in open and machine-readable formats that fully enable productive reuse including text/data mining and computational analysis.
- Free public access to and long-term preservation of final peer-reviewed articles or published versions and supporting data should be provided via either a digital repository maintained by the Federal agency or in any repository maintained by the academic institution(s) with which the PI is affiliated.

A strong, national policy of the kind described above would dramatically improve access to scholarly articles and supporting data and code not only at research universities but also across all sections of U.S. society. By requiring open licensing on all taxpayer-funded research outputs, this policy would also increase the feasibility of text and data mining large corpora of these outputs, which in turn would increase U.S. competitiveness. Of course, this policy would also help to make the current subscription access model more sustainable by exerting downward pressure on publisher pricing, correcting a decades-long tradition of annual price increases that has proven utterly unsustainable. Perhaps most importantly, this policy will also work to change the culture among researchers themselves, encouraging them to adopt practices that will enhance U.S. research competitiveness by speeding up the process of scientific discovery.

A strong, national policy would dramatically enhance our Libraries' efforts to promote and educate our campus about the importance and benefits of open access to scholarly articles, data, and code. We know this because the 2013 OTSP memo on public access and data sharing helped us facilitate necessary partnerships (e.g. Research Computing Center's High Performance Computing Cluster, Office of Research, etc.) that previously did not exist at FSU. We have also grown our data services and education for faculty and student researchers due to the forward motion of the 2013 memo and need for updated research practices.

As an academic library, we appreciate that our journal subscriptions in some cases support the operations of scholarly societies, and we are committed to working with scholarly societies (and other academy friendly players) on financial risk-mitigation strategies to smooth their transition to open access. We want to work with societies to develop new models to support open and equitable sharing of research outputs of all kinds across the full research lifecycle.

Our libraries are also committed to working in partnership with research administrators in our institutions to support efficient, cost effective research support services to improve data management and sharing, and to reduce the compliance burden on investigators. Our research librarians often work with principal investigators to ensure that their data management and public access plans are in compliance with federal funder mandates.

“How would American science leadership and American competitiveness benefit from immediate access to these resources? Etc.”

American Science leadership and competitiveness will gain enormous benefits from public access to research outputs from federally funded agencies. This can be seen even as recently as the response to COVID-19, in which immediate public access to publications shaped best practices for taxpayers, researchers and educators (<https://www.washingtontimes.com/news/2020/mar/14/us-researchers-must-share-results-to-quickly-combat/>). We saw the effects of the immediate availability of these resources on the FSU campus, among the common experiences of those across the world for global public health. Not only were studies published in 2020 on the virus necessary for daily and even hourly updates to the American taxpayers, it also became necessary as FSU campus moved all classes online for the remaining semester within the course of a week and could no longer offer Interlibrary Loan of print materials, normal in-person research support, etc. There were several publishers that made their materials temporarily available, but it is not sustainable to rely on the optional social responsibility of those companies in events that affect the public good. Many of our campus partners looked to the Libraries for solutions, including existing quality public resources. We cannot stress enough how immediate access to research quickly became an issue concerning public health, education and labor at our university and surrounding community, in addition to advancing American innovation in science.

In the long-term, these policies are becoming the global norm. American leadership in this area is comparatively behind our information professional counterparts in Europe, Asia, and Latin America. The U.S. is being left behind; other countries are adopting Open Access policies to accelerate their scientific research, boost innovation and increase competitiveness. The European Commission has a full Open Access policy for its articles and data. Canada just announced a similar policy. Countries including India, China, and Brazil and foundations from the Gates Foundation to the Wellcome Trust also have Open Access policies.

While Florida State University has a Harvard-style Open Access Policy, it is inconsequential compared to the larger initiatives seen in other countries. Our campus has many researchers from other countries and participates in national as well as international research initiatives. Often in our work, managing the institutional repository, we see that FSU is chosen to host publications from large multi-institutional projects. However, there is still much to be desired in our capacity and infrastructure to support the exponential volume of research publications at the campus level alone.

A national public access policy can be realized in an efficient and cost-effective manner. The NIH reports it costs ~\$4.6 million per year to run PubMed Central (PMC) and provide public access to 100,000+ articles reporting on its funded research each year. This represents a tiny fraction (only 1/90th of 1%) of the NIH's annual \$40+ billion operating budget. (<https://tinyurl.com/lipmantestimony2010>). 9 other U.S. Federal Agencies are currently utilizing PMC to provide public access to articles resulting from their funded research – greatly extending its value. Relative to these expenditures, a national policy would provide tremendous return on investment, accelerating the pace of scientific discovery in the U.S. and placing us on a footing to not only compete but exceed the output of other developed nations.

Again, we would like to thank you for your time and the opportunity to provide a response. We hope to see OSTP follow through with this initiative and look forward to engaging with federal agencies and other stakeholders to explore new opportunities to leverage open taxpayer-funded research outputs.

Sincerely,

DocuSigned by:
Gale Etschmaier
CD71BE43EE89430...

4/13/2020 | 11:34 AM EDT

Gale Etschmaier



Date: 8 April, 2020
To: Lisa Nichols, Assistant Director for Academic Engagement, OSTP
Subject: RFI Response: Public Access

[cOAlition S](#) welcomes the opportunity to respond to the [Request for Information: Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting from Federally Funded Research](#) issued by OSTP on February 12, 2020.

cOAlition S represents 24 research funders worldwide – including the British UKRI, Norway, The Netherlands, France, the African Academy of Sciences, the South African MRC, the Bill and Melinda Gates Foundation, the European Commission, the World Health Organization and many more – who wish to work towards a world where all research articles are freely available for anyone to access and re-use.

We would like to formulate the following recommendations to the four questions formulated in the RFI. The original questions in the RFI are in italics.

- *What current limitations exist to the effective communication of research outputs (publications, data, and code) and how might communications evolve to accelerate public access while advancing the quality of scientific research? What are the barriers to and opportunities for change?*

Current digital technology allows research results to be available worldwide as soon as they are published. Nevertheless, academic publishers still use paywalls and 12-month embargoes to block access to scientific research for those lacking a subscription. This excludes not only unaffiliated researchers, but more generally all taxpayers who have often paid for that research via federal grants. Full and immediate Open Access to research results without paywalls and embargoes accelerates science, since comprehensive access to research outputs (articles, data, code) allows the largest possible audience worldwide to comment, criticize, and improve on research results. In the context of the Covid-19 crisis, it is distinctly odd that science advisors from the US and 11 other countries even had to ask scientific publishers on March 13, 2020 in an [open letter](#) to make all research related to the coronavirus and Covid-19 more freely available, since a large number of these research results had already been paid for via federal research grants. The Covid-19 pandemic is no doubt the best example of the need for full and immediate Open Access.

'Native' Open Access publishers have shown that the quality of scientific research can be fully preserved under an entirely profitable Open Access business model. The subscription model, with its paywalls and embargoes, is no longer appropriate for academic publishing. It is only kept alive by

the archaic operational practices of legacy publishers and the attachment of researchers to the journals they derive prestige from. Opportunities for change lie in an overhaul of the reward system for academics along the lines of [DORA](#) and the [Hong Kong Principles](#), incentives for academic-owned Open Access infrastructure, and more transparent accountability of the prices charged by academic publishers.

- *What more can Federal agencies do to make tax-payer funded research results, including peer-reviewed author manuscripts, data, and code funded by the Federal Government, freely and publicly accessible in a way that minimizes delay, maximizes access, and enhances usability? How can the Federal Government engage with other sectors to achieve these goals?*

Aligning with cOAlition S funders, Federal agencies could mandate their researchers to publish in full and immediate Open Access with a CC-BY license, and require researchers to retain copyright to their publications. This allows for the greatest impact, reach, and reusability of publicly funded research results. The goal should be full and immediate Open Access without embargoes. If authors choose to publish in a subscription journal, they should be required to immediately deposit the Author Accepted Manuscript (AAM) or the Version of Record (VoR) in an open institutional repository. A number of publishers (e.g. Sage, Emerald) already allow for this option, with no negative results for sales. Federal agencies could also take measures to discourage publication in so-called 'hybrid' journals and subscription journals, and support transparent publication fees of their researchers in Open Access journals. The federal government should engage with university repositories and academic-owned infrastructures to enhance the visibility of Open Access publications, data, and code. The federal government could also incentivize library consortia and scientific societies to enter into Transformative Arrangements that help transition subscription journals to Open Access journals.

- *How would American science leadership and American competitiveness benefit from immediate access to these resources? What are potential challenges and effective approaches for overcoming them? Analyses that weigh the trade-offs of different approaches and models, especially those that provide data, will be particularly helpful.*

American competitiveness and American science leadership will stand to be the greatest beneficiaries of full and immediate Open Access. As far as American science leadership is concerned, the USA is the largest and most efficient academic power in the world, with a tradition of scholarship that is virtually unrivaled. If American academics obtain immediate and full access to global research results, they will be in a unique position to make use of that resource much faster and much more efficiently than any other academic community. Regarding access to research data, PwC EU Services wrote a [report](#) in 2018 calculating that the annual cost of not having FAIR research data costs the European economy at least €10.2bn every year. Since research articles most often function as the

cOAlition S

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gateway to research data, their availability in Open Access is crucial for avoiding that needless and wasteful cost.

American competitiveness also stands to gain from Open Access to research results: America leads the world in the creation of new and innovative companies. Immediate access to the latest global research will boost that leadership in company creation even further. This will largely outweigh the relatively minor adjustments that are necessary in the academic publishing industry, which has already been changing its business model to adapt to Open Access.

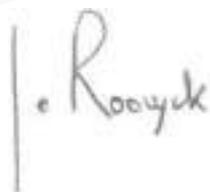
- *Any additional information that might be considered for Federal policies related to public access to peer-reviewed author manuscripts, data, and code resulting from federally supported research.*

We refer to the [Plan S principles and implementation](#) for further information.

For the Executive Steering Group of cOAlition S,

Prof. dr. Johan Rooryck

Open Access Champion, cOAlition S

A handwritten signature in black ink that reads "J. Rooryck". The signature is written in a cursive style with a vertical line to the left of the name.

cOAlition S

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May 1, 2020

BY ELECTRONIC SUBMISSION

Dr. Kelvin K. Droegemeier
Director, Office of Science and Technology Policy
Eisenhower Executive Office Building
1650 Pennsylvania Avenue, NW
Washington, DC 20504

Response to OSTP Request for Information – FR Doc. 2020-06622 – “Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research”

Dear Dr. Droegemeier,

The Society of Critical Care Medicine (SCCM) is grateful for the opportunity to respond to this request for information. In particular, we write to caution OSTP against adopting a policy mandating the free distribution of peer-reviewed manuscripts earlier than one year after publication.

Founded in 1971, the SCCM embraces its mission to secure the highest quality care for all critically ill and injured patients. SCCM envisions a world where all critically ill and injured persons receive care from a present, integrated team of dedicated and fully trained intensivists and critical care specialists. Multiprofessional teams use knowledge, technology, and compassion to provide timely, effective, safe, efficient, and equitable patient-centered care.

To support our members and all critical care medicine professionals around the globe, SCCM produces three journals: *Critical Care Medicine*, *Pediatric Critical Care Medicine*, and *Critical Care Explorations* – SCCM’s open access journal. These journals present critical care practitioners with guidelines and clinical breakthroughs that lead to better patient care, cutting-edge and promising research, as well as advances in equipment and techniques.

Ultimately, we strive to support scientific progress by producing and broadly disseminating the highest quality peer-reviewed journals possible. Publishers and societies have worked to strengthen scholarly communication and promote open science. At the SCCM, we have demonstrated our commitment by publishing an open access journal—*Critical Care Explorations*—which rapidly disseminates articles and is available to all readers free of charge.

However, it is critical that these efforts occur within a framework that respects intellectual property rights, supports our ability to invest in high-quality publications, and that does not hinder researchers from communicating their discoveries.

Our organization is currently deeply engaged in responding to the COVID-19 pandemic. SCCM provides resources and education to those working on the frontlines of this global crisis as well as promotes advocacy initiatives, all of which are available through our COVID-19 Rapid Resource Center. As part of

Dr. Kelvin K. Droegemeier

May 1, 2020

Page 2

this effort, the SCCM's journals are also fast-tracking peer-reviewed articles related to COVID-19. We are concerned that OSTP's significant new regulatory proposal would divert efforts away from responding to the current crisis. Moreover, the proposal would undermine our stability and undercut our ability to respond to future health crises to support high quality patient care and clinician education.

As you are aware, federal agencies currently require that peer-reviewed manuscripts be made freely available online—within one year of publication—if they discuss research funded at least in part by a government grant.¹ The current policy represents a significant compromise that balances our shared goals of providing broad access with the need for our organization to recoup the substantial investments we make in the peer-review, editing, publication, and distribution processes of these high impact articles. This one-year compromise contrasts with the length of a full copyright term of life-of-the-author plus 70 years. Importantly, this compromise reflects Congress' guidance (in the authorizing legislation for the current policy) that the Administration must "take into consideration the role that scientific publishers play in the peer-review process in ensuring the integrity of the record of scientific research, including the investments and added value that they make."²

Reducing or eliminating the current one-year embargo would significantly jeopardize our organization's ability to invest in producing the high-quality peer-reviewed journals on which our readers in the critical care community rely. In so doing, such a policy would contravene Congress' clear guidance to take our role and investments into consideration. Furthermore, such a policy would directly result in a reduction in either the quantity or quality (or more likely, both) of peer-reviewed journal articles produced by hundreds of organizations like ours.

These untoward consequences would not only be harmful to the research enterprise, but would also be harmful to the patients for whom our readers care. Indeed, patients and their families are the ultimate beneficiaries of the scholarly journals we produce and the new knowledge we share.

We urge you not to disrupt our ability to support advancing research and patient care in critical care medicine. Instead, we look forward to working together to identify solutions that advance the goals of open science while preserving the integrity and flow of the research findings and analyses communicated world-wide through peer-reviewed journals such as those of the SCCM.

Thank you again for the opportunity to submit these comments.

Sincerely,



Lewis J. Kaplan, MD, FACS, FCCP, FCCM
President, Society of Critical Care Medicine

¹These policies were developed pursuant to OSTP's requirement that agencies "shall use a twelve-month post-publication embargo period as a guideline for making research papers publicly available . . ." See OSTP Memorandum on "Increasing Access to the Results of Federally Funded Scientific Research" (Feb. 22, 2013).

²America COMPETES Reauthorization Act of 2010, Section 103(b)(9), available at: <https://www.congress.gov/111/plaws/publ358/PLAW-111publ358.pdf>.



April 30, 2020

BY ELECTRONIC SUBMISSION

Dr. Kelvin K. Droegemeier
Director, Office of Science and Technology Policy
Eisenhower Executive Office Building
1650 Pennsylvania Avenue, NW
Washington, DC 20504

Response to OSTP Request for Information – FR Doc. 2020-06622 – “Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research”

Dear Dr. Droegemeier,

The American Association for Anatomy (AAA) is grateful for the opportunity to respond to this request for information. In particular, we write to caution OSTP against adopting a policy mandating the free distribution of peer-reviewed manuscripts earlier than one year after publication.

AAA is one of the oldest scientific membership organizations in the United States, founded in 1888. Our mission is to advance anatomical science through research, education, and professional development for those in the anatomy community who teach in medical, dental, allied health, and university environments. AAA disseminates a broad variety of scientific knowledge and research in 3 different journals we publish; *The Anatomical Record* publishes new discoveries in the morphological aspects of molecular, cellular, systems, and evolutionary biology. The journal focuses on major new findings in the anatomical consequences of gene disruption, activation, or over expression upon cell, tissue, or organ architecture and recognizes the importance of descriptive studies in contemporary research, particularly when framed in the context of experimental models or questions. *Developmental Dynamics* provides an international forum for publishing novel discoveries, using any model system, that advances our understanding of development, morphology, form and function, evolution, disease, stem cells, repair and regeneration. *Anatomical Sciences Education* provides an international forum for the exchange of ideas, opinions, innovations and research on topics related to education in the anatomical sciences of gross anatomy, embryology, histology, and neurosciences at all levels of anatomical sciences education including, undergraduate, graduate, post-graduate, allied health, medical (both allopathic and osteopathic), and dental. Each journal provides quality research to help the broader anatomy community stay abreast of developments to help better educate students as well as contribute to new discoveries for medical therapies and advances in how we understand the human form.

Ultimately, we strive to support the progress of science by producing and broadly disseminating the highest quality peer-reviewed journals possible. Publishers and societies have worked to strengthen scholarly communication and promote open science. However, it is critical that these efforts take place within a framework that respects intellectual property rights and our ability to

invest in high-quality publications, and that does not hinder researchers from communicating their discoveries.

As you are aware, federal agencies currently require that peer-reviewed manuscripts be made freely available online—within one year of publication—if they discuss research funded at least in part by a government grant.¹ This policy represents a significant compromise that balances our shared goals of providing broad access with the need for our organization to recoup the substantial investments we make in the peer-review, editing, publication, distribution, and long-term stewardship of these articles. This one-year compromise contrasts with the length of a full copyright term of life-of-the-author plus 70 years. Importantly, this compromise reflects Congress' guidance (in the authorizing legislation for the current policy) that the Administration must “take into consideration the role that scientific publishers play in the peer review process in ensuring the integrity of the record of scientific research, including the investments and added value that they make.”²

Reducing or eliminating the current one-year embargo would significantly jeopardize our organization's ability to invest in producing the high-quality peer-reviewed journals that our readers in the anatomy community rely on. In so doing, such a policy would contravene Congress' clear guidance to take our role and investments into consideration. Furthermore, such a policy would directly result in a reduction in either the quantity or quality (or more likely, both) of peer-reviewed journal articles produced by hundreds of organizations like ours.

This would not only be harmful to the research enterprise, it would also be harmful to the scientists, medical professionals, and students who are the ultimate beneficiaries of the scholarly journals we produce.

We urge you not to disrupt our ability to support the advancement of research in anatomical sciences, and we look forward to working together to identify solutions that advance the goals of open science without undermining the communication of research findings and analyses through peer-reviewed journals.

Thank you again for the opportunity to submit these comments.

Sincerely,



D. Rick Sumner, PhD
President, American Association for Anatomy
Professor and Chair, Department of Cell & Molecular Medicine
Rush University Medical Center

¹These policies were developed pursuant to OSTP's requirement that agencies “shall use a twelve-month post-publication embargo period as a guideline for making research papers publicly available . . .” See OSTP Memorandum on “Increasing Access to the Results of Federally Funded Scientific Research” (Feb. 22, 2013).

²America COMPETES Reauthorization Act of 2010, Section 103(b)(9), *available at*: <https://www.congress.gov/111/plaws/publ358/PLAW-111publ358.pdf>.

Lindsay Davis, Linzi5@aol.com, 216-926-7947

April 30, 2020

RE: RFI Response: Public Access

Lisa Nichols

Assistant Director for Academic Engagement

OSTP

publicaccess@ostp.eop.gov.

Dear Ms. Nichols,

To begin, I want to thank you and the rest of the OSTP for taking the time to listen and consult with stakeholders on this matter.

My name is Lindsay Davis, I am a former Miss Ohio, a current heart patient and a patient advocate. I have passed a namesake legislation called "Lindsay's Law" that protects student athletes from sudden cardiac arrest. I write for various national and international publications on my genetic heart condition, Hypertrophic Cardiomyopathy (HCM).

I am also a member of patient advisory boards for biotech companies. I lobby for policy change for the American Heart Association and The American College of Cardiology, including for the funding of their various research initiatives. Yet the very research I sit in Congressional meetings to advocate funding for, I am unable to access myself without having to go through significant workarounds or paying exorbitant fees.

1. My heart disease HCM, has attracted a lot of interest in recent years. It was the first condition that researchers CRISPRed in embryos in the US. There are also multiple US biotech companies trialing drugs that were created using precision medicine that essentially cures my disease. Up until now doctors were only able to treat HCM symptoms, not cure.

With the landscape rapidly changing for HCM patients, we are seeking knowledge. We should be able to access the sum total of medical knowledge on these treatments with just a few clicks of our mouse especially when as taxpayers, we have funded this research. Yet it has proven to be an experience of bureaucratic intransigence.

One of the first things people do when facing a health crisis is go online to find the

latest/best information available. Much of this is found in articles in scientific journals.

When trying to learn if a therapy is right for me, explaining these new treatments to fellow patients or writing about them, I always want to have the most current data to back up my statements. I hit many walls. When trying to locate them I found the only way to get these articles is through subscriptions to prohibitively expensive journals, or by paying upwards of \$30 an article for 24- hour pay-per-view access.

Cutting edge treatment is available to me and other HCM patients, but it's next to impossible for us to learn about them except if we know someone who can help us access these journals or reach out directly to the authors themselves like I have done in the past.

The patient voice matters and should be included in development of treatments, but it's difficult for us to have a voice unless we are able to learn and collaborate on research as it is released. This not only impedes our ability to contribute in a timely manner to new therapies and cures, this limits the value of our investment in science. Our tax dollars paid for the research that these articles report on, yet we are routinely shut out of accessing them.

2. The federal government should implement a strong national policy to ensure that all taxpayers finally get immediate, barrier-free access to the full results of the scientific research that their tax dollars have funded.

All final peer-reviewed articles reporting on taxpayer funded research should be made freely available online to the public immediately upon publication in a peer- reviewed journal. Access to the underlying data and tools needed to validate the results of these papers (e.g. software or software code) should also be made available.

All other data should be made available to under findable, accessible, interoperable and reusable terms and conditions. Articles should be made available in formats that support text/data mining and computational analysis. Articles should carry an open license or be published as part of the public domain so that they can be easily shared and fully used.

Such policy would facilitate access to patients like me trying to navigate our newest options in treatment. Many of our healthcare providers don't have access to this research either so they will be less likely to prescribe new therapies on their own without

it being brought to their attention, potentially by us. We would be able to find new treatments and cure our diseases working side by side.

For me personally it would help me explain these cutting edge advancements to other patients and present it in a more digestible manner. Working side by side with researchers, I would also be able to give input from a patient perspective and help these fields pertaining to HCM faster progress. It will also help me make more informed decisions with my family about my own health.

3. America can't play a leadership role in science if our scientists routinely cannot access critical research articles and data. Not even the most well-funded libraries can afford to subscribe to all of the journals that their researchers need. Researchers outside of the university environment - in disease specific research organizations and foundations – struggle even more.

Even as recently as this month, I was writing a piece for an HCM website and wanted to cite the most up to date research on genetic testing in HCM. The disease can oftentimes be mistaken for other conditions so genetic analysis helps to better identify the cause of hypertrophy in the heart. I found a paper in *Circulation: Genomic and Precision Medicine* that discussed the causative variants in genes that cause conditions that can mimic HCM. For patients to know if they positively have HCM or have something else, could mean the matter of a cure, it could even be a matter of life or death for them. Yet to access this particular piece, I had to pay \$35 to access it for 24 hours.

HCM is not a rare disease anymore either. Ironically I had to learn a couple years ago via paying for access to a paper that the disease is prevalent in up to 1/200 people not 1/500 like it was previously reported. Many patients would benefit from the access to research and data. We're at an inflection point in the history of medicine, where patients are taking charge of not just their present medical treatment, but also of the scientific research guiding their future potential treatment. They are building alliances and foundations. They are raising funds. They are directing research. They are comparing notes and records to generate novel hypotheses. In a handful but growing number of cases, they are crossing over to become scientists themselves.

An Open Access policy will allow more people to stay abreast of cutting-edge research. It will generate new uses and applications for research, and ensure that U.S. higher education institutions provide the best possible education to all students

America is being left behind as other countries adopt Open Access policies that accelerate their scientific research. Open access to the results of publicly funded research is at the center of innovation and competitiveness policies around the world.

With the ongoing COVID-19 pandemic, we have seen rapid changes in policy on data sharing and we are seeing how a collaborative effort among science, academia, and patients can garner better results for treatments in not just the US but also the world.

Thank you for facilitating a robust discussion of this important issue, I encourage you to follow through by implementing a strong immediate open access policy for the results of publicly funded research. I'm grateful the OSTP is seeking to expedite access to research and reaching out to hear voices of those directly impacted, including patients like me.

Sincerely,

Lindsay Davis



John Haynes, Chief Executive Officer
Tel + 1 516 576 2253
publishing.aip.org
jhaynes@aip.org

May 1, 2020

Lisa Nichols, Assistant Director for Academic Engagement
Office of Science and Technology Policy
Eisenhower Executive Office Building
Washington, DC 20504

Via email to: publicaccess@ostp.eop.gov

Dear Dr Lisa Nichols,

As a leading mission-driven scientific society publisher of high quality peer-reviewed journals, AIP Publishing shares OSTP's commitment to advancing access to research outputs. We appreciate the opportunity for open dialog and the opportunity to provide a response to Document 85 FR 9488 (Request for Information: *Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting from Federally Funded Research*).

AIP Publishing is a wholly owned subsidiary of the American Institute of Physics (AIP), a 501(c)(3) non-profit organization whose mission is to advance, promote, and serve the physical sciences for the benefit of humanity. AIP plays an active role in advancing policy matters including scientific publishing:

- 1) AIP was involved in the first Scholarly Publishing Roundtable with the Committee on Science and Technology of the United States House of Representatives and OSTP that predicated the 2013 OSTP memo (*Increasing Access to the Results of Federally Funded Scientific Research*).
- 2) AIP Publishing is a founding member of CHORUS, a non-profit organization that monitors and reports on public accessibility, the availability of reuse license terms, relevant datasets and code, and long-term archival and preservation arrangements related to published research outputs.
- 3) AIP participated at the recent Society Publisher Meeting with OSTP on February 28, 2020.

AIP Publishing embraces open access and author rights. Open Access is an important and growing part of our support for the scientific enterprise. In 2019, we published approximately 17% of our content under a CC-BY license, and we publish six gold open access journals. For AIP Publishing's subscription journals, our policy is that authors retain copyright in their version of their article, are able to post the accepted (unpublished) version anywhere without embargo on acceptance.

A scholarly ecosystem where researchers are incentivized and recognized by depositing not only the results and conclusions of their work (research article) but, also all the elements that went into the creation of that work (grants, research data, code, methods, protocols, equipment, prior version of the work (i.e., preprints), etc.) will benefit research substantially and speaks to what Newton said:

'If I have seen further it is by standing on the shoulder of giants' – Sir Isaac Newton 1675

In the sections that follow, we set out AIP Publishing's responses to the questions raised in the RFI.

What current limitations exist to the effective communication of research outputs (publications, data, and code) and how might communications evolve to accelerate public access while advancing the quality of scientific research? What are the barriers to and opportunities for change?

Researchers, including faculty and students, have an excellent understanding of the incentives in publishing their research in the most appropriate journal, seeking the widest audience of their peers. Adopting experimental mandates across the scholarly communications ecosphere is likely to have unintended consequences. There is an opportunity for funders, publishers, institutions, and researchers to approach the challenge together with an open mind geared towards incentives, for example:

- How can we enable a more rapid uptake of open initiatives such as credit for sharing data?
- How can institutions, funders and publishers move academic assessment away from journal impact factors?
- How can the US government seed/support innovation to help drive the development of new products, services and standards that benefit science?

There is a delicate balance between the many different versions of an author's research before, during and at the point of publication:

- Author Submitted Manuscript (ASM) also normally known as a preprint. This is the version of research that the author has created themselves and is widely shared with their community, for comment, prior to submission to a journal.
- Author Accepted Manuscript (AAM) is the version of the manuscript that has successfully navigated the validation of the peer-review process. This version of the manuscript has benefitted from a publisher's investment in the peer review process through the input of referees and journal editors.
- Version of Record (VOR) is the final published manuscript which has been developed and crafted, via a publisher's investment, into a formal part of the scientific literature. The VOR also benefits from the investment a publisher makes to ensure the content is perpetually available in both print and electronic formats for the community to access now and in the future.

Focusing on just the peer-reviewed author manuscript both overlooks the importance of the ASM and unreasonably ignores the intellectual property and investment the publisher has made into the peer-reviewed Author Accepted Manuscript (AAM) and the final published Version of Record (VOR).

In 2018 AIP Publishing's average cost to process and publish an article (the VOR) was \$3000. Roughly a third of that cost was for peer review, including payments to academic editors running the peer-review process. Our costs break down into four relevant categories (figures in parenthesis are percentage of cost):

1. Peer review – submission of an article through to acceptance (30%)
2. Production – acceptance through to the article being published (30%)
3. Overhead – costs to run AIP Publishing (20%)
4. Community investment – a return to the American Institute of Physics to support its mission (20%)

In addition to investing in the publication of high-quality peer-reviewed research resulting from federally funded science, AIP Publishing adds value to an author's published work by investing in innovations to ensure this research is disseminated to the widest audience. For example:

- In 2017 AIP Publishing introduced a new service called [Scilight](#) that summarizes new research, emphasizing its significance to a particular field and amplifying the impact of that research to a broader audience. Each Scilight is written by a professional science writer and is published under a CC-BY license.
- For every journal article published, AIP Publishing has invested in creating structured content with tags that aid in knowledge discovery and learning. This includes the recent development of a novel 13,500+ term thesaurus for the physical sciences.

What more can Federal agencies do to make tax-payer funded research results, including peer-reviewed author manuscripts, data, and code funded by the Federal Government, freely and publicly accessible in a way that minimizes delay, maximizes access, and enhances usability? How can the Federal Government engage with other sectors to achieve these goals?

We would ask OSTP to consider the role of the preprint as an established means of communicating research results. In the physics community, a value culture has been long established around the preprint, with preprints on [arXiv](#) serving to complement peer-reviewed scientific journals. We would encourage OSTP to consider asking Federal agencies to require the deposition of preprints of federally-funded research to an appropriate repository. Preprints would then provide immediate access to research results while supporting peer-reviewed journals to fulfill their role of registration, certification, dissemination, and preservation. We would consider this 'preprint first' route as a more sustainable approach than OSTP's proposed policy of reducing the embargo on the Version of Record from 12 months to zero.

In terms of policy, assessment and metrics are important. We would suggest that OSTP conduct an independent study to quantify the impact of the 2013 OSTP memorandum *Increasing Access to Results of Federally Funded Scientific Research*. What has been the impact of the current 12-month embargo? What are the costs and benefits of the current policy? Can we quantify implementation across the different funding agencies? As a scientific society publisher, we support evidence-based and data-driven approaches and encourage OSTP to do likewise when considering the impacts and policy responses to the 2013 memorandum".

AIP Publishing is experimenting with text and data mining initiatives in partnership with libraries and institutions around the world (for example, the National Institute for Materials Science in Tsukuba, Japan). We encourage the Federal Government to continue to support research and projects in these areas and to involve all key stakeholders.

How would American science leadership and American competitiveness benefit from immediate access to these resources? What are potential challenges and effective approaches for overcoming them? Analyses that weigh the trade-offs of different approaches and models, especially those that provide data, will be particularly helpful.

AIP Publishing believes in enhancing access, increasing researcher productivity, and providing knowledge and insight to help all stakeholders solve the global challenges we face in the 21st century. Fostering a vibrant and self-sustaining scholarly communications ecosystem is critically important to the progress of science and the benefits it will continue to bring to American scientific leadership and American competitiveness.

As part of the research communities we serve, the investments AIP Publishing makes in ensuring scientific quality is significant, and we encourage the Federal Government and its agencies to continue to find ways to take this into account as new policy is developed that balances sustainable business models with the need for innovation.

Any additional information that might be considered for Federal policies related to public access to peer-reviewed author manuscripts, data, and code resulting from federally supported research.

In addition to assessing how preprints can be more closely integrated with funder and publisher policies, public access to research data and code is an emerging topic and one where experimentation to understand and validate systems, processes, standards and different community norms and behaviors will be important. There is a role for key stakeholders including funders, publishers and others, with OSTP possibly taking a coordinating and convening role.

AIP Publishing publishes two data journals, one in partnership with the National Institute of Standards and Technology (NIST) and the other with AVS. We are experimenting with making data actionable and interoperable, for example, taking spectra from PDFs published in the journal *Surface Science Spectra*, extracting the data and developing a new tool, [eSpectra](#).

We would actively welcome opportunities to coordinate with the Federal Government and research agencies in further experimentation to validate effective and cost-efficient ways to enhance access to research data and code.

AIP Publishing would be pleased to provide additional information and to collaborate with OSTP, federal agencies, and other organizations to discuss and develop sustainable solutions that advance open science.

Sincerely

A handwritten signature in black ink, appearing to read "John Haynes". The signature is written in a cursive, flowing style.

John Haynes, PhD
Chief Executive Officer
AIP Publishing

Note: The views and perspectives expressed herein are those of AIP Publishing and do not necessarily reflect those of AIP Publishing's publishing partners, the American Institute of Physics or AIP's Member Societies.

April 30, 2020
Re: 85 FR 17907 2020-06622

Lisa Nichols, PhD
Assistant Director for Academic Engagement
Office of Science and Technology Policy
Executive Office of the President
Eisenhower Executive Office Building
1650 Pennsylvania Avenue
Washington, DC 20504

Dear Dr. Nichols,

On behalf of the Endocrine Society, thank you for the opportunity to comment on your Request For Information on “Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research.” Founded in 1918, the Endocrine Society is the world’s oldest and largest organization dedicated to research on hormone biology and the clinical care of patients with endocrine diseases. We are committed to increasing access to research products; however, we have serious concerns about the effects that a policy mandating immediate open access publishing for all federally funded biomedical research would have on research, the scientific community, and the country as a leader in science. We believe a mandated open access policy would reduce the quality of research, decrease the speed at which results are reported, and create barriers to the dissemination of validated results (see discussions below). **We caution OSTP against adopting a policy mandating the free distribution of peer-reviewed manuscripts earlier than one year after publication and urge OSTP to follow the official rulemaking process for any policy changes that will affect scientific publishing.**

1. What current limitations exist to the effective communication of research outputs (publications, data, and code) and how might communications evolve to accelerate public access while advancing the quality of scientific research? What are the barriers to and opportunities for change?

We are not aware of any limitations to access and communication of research results under the current system. Anyone may request a copy of a scientific article from the author of a publication in our journals for noncommercial use. We make abstracts for biomedical research publications available immediately on Pubmed, and the full paper is made available on Pubmed Central after a 12-month embargo. Endocrine Society journals and others support free public access to practice-changing research discoveries that improve health. For example, our clinical practice guidelines are freely available immediately; we provide patients with free access to breakthrough studies related to their endocrine disease immediately upon request; we participate in initiatives to provide free or



low-cost access to scientific research for individuals, libraries, and other institutions in developing countries; and we provide feature articles, including scientific statements, immediately without charge. On average, our journals publish over 150 open access articles each year. We also provide access to resources such as an antibody table and require authors to deposit research datasets in appropriate public repositories for free access.

Nonprofit scientific societies such as the Endocrine Society use subscription revenues from their journals to further advance the dissemination of highly technical and specialized information for the broader scientific, clinical, and patient community. These include educational activities, professional development programs, patient resources, and travel grants for early career researchers. We also employ media relations professionals that assist reporters with the communication of technical scientific information to broader audiences. Approximately 40% of our revenue is derived from publications-related activities. Abruptly changing from a subscription-based business model would jeopardize not only our ability to continue to publish journals, but also these and other vital educational and public engagement activities. By acutely decreasing subscription-related revenue, mandating immediate open access for research would, in fact, limit the ability of the Endocrine Society and similar nonprofit organizations to share information and overall diminish scientific communication.

We request that OSTP clearly articulate what barriers have been identified to the efficient dissemination of scientific results, so that we may collectively work together to address any issues without disrupting the world-class US research enterprise.

2. What more can Federal agencies do to make tax-payer funded research results, including peer-reviewed author manuscripts, data, and code funded by the Federal Government, freely and publicly accessible in a way that minimizes delay, maximizes access, and enhances usability? How can the Federal Government engage with other sectors to achieve these goals?

The current publishing system in the United States effectively balances access with quality control and other activities that enhance the usability of scientific information. An important component of the cost of publishing is to ensure rigorous and ethical peer review which the public rightly expects and relies upon. Immediate open access would endanger the quality and accuracy of peer review, introduce the potential for the publication of incorrect information, conflicts of interest, and benefit predatory “pay to publish” journals at the expense of specialist societies and other learned-societies who provide publications with independent control of standards and content. Researchers might also need to exclusively submit to pre-print servers to make their work accessible and forego peer review processes that incur associated higher costs. Without peer review by individuals with appropriate discipline-specific expertise, the overall quality of published research would decrease, making it more difficult to ensure the reproducibility of published studies. A less-rigorous research foundation would ultimately result in more delays and fewer effective treatments and cures for patients.



To ensure that scientific content is accurate and well-curated in an immediate open-access environment journals like ours would need to recoup the loss of revenue from subscriptions through additional article processing charges (APCs). For the Endocrine Society, the cost of publishing a single journal article would increase by at least 500% on average to a total of ~\$5,000 with the potential for additional charges depending on the type of open access license mandated by the policy. These publication charges are usually paid from the same federal grant for the research project and higher charges would further erode research budgets that are already overstretched.

Because publications are a key measure of academic success and a critical component for promotions and competitive grant applications, researchers might need to reduce personnel or cede projects and research resources in order to offset anticipated publication fees. The loss of laboratory personnel would raise unemployment and negatively impact overall productivity, inhibiting the timely reporting and distribution of scientific results. Moreover, early-career investigators with already limited resources would be particularly vulnerable to these changes, which would further widen the gap between aspiring and established investigators. Subsequently, such measures are likely to lead to the collapse of an already thin pipeline of young investigators.

Instead of a blanket mandate, the federal government could consider establishing dedicated pools of money separate from existing grant budgets to cover APCs. Grants could also be made directly to scientific societies to support additional open-access publications and other dissemination activities. The Federal Government could also the adoption of standardized tools or other resources to make datasets more user-friendly.

3. How would American science leadership and American competitiveness benefit from immediate access to these resources? What are potential challenges and effective approaches for overcoming them? Analyses that weigh the trade-offs of different approaches and models, especially those that provide data, will be particularly helpful.

We are unaware of any evidence that the current model of publication negatively impacts American scientific leadership and American competitiveness. Pharmaceutical companies and universities maintain subscriptions to necessary journals and share resources through inter-library loans. However, there is some evidence from the experience of other countries that policies mandating free and immediate open access have resulted in challenges for researchers and obstacles to publishing. For example, some countries have centralized grant authorities that provide targeted funds to support APCs for open-access publications. When these limited funds run out, researchers are unable to publish their work and must wait until the next fiscal year to report their findings. These experiences demonstrate that mandating immediate open access will slow the publication and broader dissemination of research, despite assurances suggestions to the contrary.



4. Any additional information that might be considered for Federal policies related to public access to peer-reviewed author manuscripts, data, and code resulting from federally supported research.

The COVID-19 crisis illustrates the importance of ensuring that scientific information is communicated accurately, professionally, rapidly, and has been vetted by individuals with discipline-specific expertise. Implementing a change to the publishing marketplace will severely disrupt well-established methods for disseminating important and reliable scientific information that benefits public health. Abruptly changing our publishing business model will jeopardize our Society and journals by creating further financial loss at a time when we have already suffered economically and have no margins to absorb.

We implore OSTP to refrain from any policy changes and instead continue a dialogue with all stakeholders including medical specialty societies and nonprofit publishers to understand the problem the Administration is trying to correct and then, if policy change is necessary, to move through the official rulemaking process.

We would be happy to meet with you and provide additional information and data. Please do not hesitate to contact Joe Laakso, PhD, Director of Science Policy at jlaakso@endocrine.org if we can be a resource.

Sincerely,

Gary D. Hammer, MD, PhD
President
Endocrine Society



April 30, 2020

Dr. Lisa Nichols
Assistant Director for Academic Engagement
Office of Science and Technology Policy

Sent electronically to: publicaccess@ostp.eop.gov

RE: RFI Response: Public Access

Dear Dr. Nichols:

The comments below are provided on behalf of the American College of Medical Genetics and Genomics (ACMG) and our official scientific journal, *Genetics in Medicine (GIM)*. We appreciate the opportunity to provide feedback on approaches for ensuring broad public access to peer-reviewed scholarly publications, data, and code that result from federally funded scientific research.

ACMG is the only nationally recognized medical professional organization solely dedicated to improving health through the practice of medical genetics and genomics, and the only medical specialty society in the US that represents the full spectrum of medical genetics disciplines in a single organization. ACMG is the largest membership organization specifically for medical geneticists, providing education, resources, and a voice for more than 2,400 clinical and laboratory geneticists, genetic counselors, and other healthcare professionals, nearly 80% of whom are board certified in the medical genetics specialties. Part of ACMG's mission is to educate the medical community on the significant role that genetics and genomics plays, and will continue to play, in understanding, preventing, treating, and curing disease.

To help fulfill our mission, ACMG also maintains a scientific journal, *GIM*, which offers an unprecedented forum for the presentation of innovative, clinically relevant papers in contemporary genetic medicine. The journal provides cutting-edge advances in all realms of clinical genetics and official ACMG guidelines for practitioners and laboratory geneticists. It is intended to be an accessible and authoritative resource for the dissemination of medical genetics knowledge to all medical providers through

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appropriate reviews, discussions, commentaries, recommendations, standards, and guidelines.

Maintaining a high-quality, unbiased, peer-reviewed journal comes with many expenses, such as an appropriately staffed editorial office, software to support anonymized peer review, and professionals to manage the dissemination of published research through social media channels, podcasts, and news articles. If all content is made immediately freely available upon publication, and the authors aren't charged, there would be no mechanism to cover peer-review or publishing costs. Hybrid journals allow authors to choose to publish their article free of charge but place their article behind a paywall, or pay a fee to publish through open access which licenses the work to be freely accessible at the time of publication as well as allowing reuse of the work itself. *GIM* is a hybrid journal and relies heavily on subscriptions and site licenses to support the editorial office, but those revenue sources are inadequate to offset the costs for publishing articles that are made immediately accessible. Currently, additional fees (\$3500/article) are collected to support publishing open access articles. To maintain a high-quality, peer-reviewed journal in which all or most of the content is immediate open access without collection of publication fees from authors for every article, innovative funding models would be needed.

Certain models, such as the recently proposed zero embargo approach for all federally funded research, would result in vital journals like *GIM* being unable to continue publishing due to inadequate revenue sources. For ACMG, this would mean loss of our journal. Having a robust and sustainable business model for publishing *GIM* is of the upmost importance to ACMG, its members, *GIM* authors, and all of the scientists and healthcare professionals that rely on its high-quality articles.

We appreciate the Office of Science and Technology Policy's (OSTP) interest in making information and data generated by federally funded research more readily accessible to students, clinicians, businesses, entrepreneurs, researchers, technologists, and the general public who support these investments as a means to accelerate knowledge and innovation. However, exploration of new models must include careful consideration of unintended consequences that may result in blurring of low- and high-quality data or weakening of the peer-review system. Additionally, innovative funding mechanisms must be part of the consideration in order to ensure that journals are able to maintain high quality standards and continue their broader support of science and medicine.

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ACMG and *GIM* are supportive of open data sharing and allowing federally funded work to get into the public's hands as soon as possible. However, such approaches must be structured in a sustainable manner. Requiring journals to make all articles free to read without charging a fee is not economically sustainable. The current OSTP-mandated model that has demonstrated success for journals relies on a 12-month embargo for all peer-reviewed articles after which articles are freely available¹. However, authors have the options to pay an additional fee to make their article immediately available for open access. One potential solution would be to pair federal research funding with a requirement for grant recipients to include in their budget the fees associated with open access publication of their research findings. For example, the Patient-Centered Outcomes Research Institute (PCORI), a congressionally mandated nongovernmental organization that funds public health research, requires that all findings resulting from PCORI-funded research be publicly accessible. To facilitate this, their awardees can request additional funds from PCORI to cover the cost of open access publishing if needed. This model ensures that peer-reviewed data is being made available to the public as soon as possible but also funds the journal processes that are vital to for editorially independent peer review.

An alternative option would be to require recipients of federal funding to post their articles on a preprint server at the time of submission to the journal. While such data has not gone through the peer review process and could include significant flaws, it gets the information out to the public immediately while going through the journal peer review process. Further, the National Institutes of Health (NIH) could establish and maintain its own preprint service for articles that include data supported by federal funding, or at least for those that received funding directly from the NIH. A similar process has already been implemented by the Wellcome Trust as not all types of articles are accepted by other preprint servers.

In the scenarios described above, the integrity of a high-quality, editorially independent, peer review is maintained. These models also enable a process for trackable corrections, updates, and commentaries to published data. Further, they support sustainability of journals like *GIM* which is critical for advancing medicine and research, including the field of medical genetics. As OSTP considers options to increase public access to federally funded data and publications, it is imperative that journal sustainability be considered.

¹ Memorandum for the Heads of Executive Departments and Agencies: Increasing Access to the Results of Federally Funded Scientific Research. Executive Office of the President, Office of Science and Technology Policy. February 22, 2013.

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ACMG and *GIM* appreciate the opportunity to provide information on this important topic. For additional questions, please contact Michelle McClure, PhD (ACMG Public Policy Director) or Jan Higgins, PhD (*GIM* Managing Editor).

Sincerely,

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American College of Medical Genetics and Genomics

Robert D. Steiner, MD, FAAP, FACMG
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**American Society for
Clinical Pharmacology
& Therapeutics**

April 29, 2020

BY ELECTRONIC SUBMISSION

Dr. Kelvin K. Droegemeier
Director, Office of Science and Technology Policy
Eisenhower Executive Office Building
1650 Pennsylvania Avenue, NW
Washington, DC 20504

Response to OSTP Request for Information - FR Doc. 2020-06622 - "Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resultine From Federally Funded Research"

Dear Dr. Droegemeier,

The American Society for Clinical Pharmacology and Therapeutics (ASCPT) was founded in 1900 and consists of more than 2,400 scientists whose primary interest is to advance the science and practice of clinical pharmacology and translational science for the therapeutic benefit of patients and society. ASCPT is the largest scientific and professional organization serving the disciplines of clinical pharmacology and translational science. ASCPT was founded in 1900, we are a 501(c)3 organization headquartered in Alexandria, VA.

ASCPT focuses on improving the understanding and use of existing drug therapies and developing safer and more effective treatments for the future. Our members' unique combination of scientific and clinical expertise makes them especially qualified to understand the impact of disease on patients, the compelling need for effective drug therapy, and the efforts necessary to meet those needs. Such efforts include research, exchange of scientific information, and awareness of legislative requirements that affect drug development and regulation.

Members of ASCPT are focused on two key areas need for successful drug development. *Translational medicine* is a multi-faceted discipline that uses information from

discovery, preclinical safety and development to explore the quantitative, model-based and mechanistic understanding of disease biology and pharmacology. Exploring linkages between drug and biomarker response in a disease state provides a strong translational foundation heeded to help select the right lead drug candidate for clinical development and determine the starting dose and expected efficacious dose in first in human trials. *Clinical pharmacology* is a medical discipline that promotes well designed clinical studies needed to determine the optimize dose regimen to increase the drug's effectiveness and reduce side effects in patients. Clinical studies are designed to explore the impact of many factors (e.g. pharmacogenomics, pharmacokinetics, drug interactions, disease, special populations, age, sex, etc) and quantitatively assess and identify the optimum dosage regimen in the patient population.

Our organization is deeply immersed in efforts to respond to the COVID-19 pandemic by bringing the tools of clinical pharmacology and translational medicine to shared use on a global scale, ultimately to get the right drug(s), with the right dose, at the right time for patients with COVID-19. Unfortunately, we are concerned that OSTP's new regulatory proposal is a significant distraction from our efforts to respond to the global pandemic and would undermine our stability and undercut our ability to respond to future health care crises.

Exchange of scientific information is accomplished primarily through the Society's Annual Meeting and three journals: *Clinical Pharmacology & Therapeutics*, *CPT: Pharmacometrics & Systems Pharmacology*, and *Clinical & Translational Science*. The latter two journals are Open Access; the flagship *Clinical Pharmacology & Therapeutics* is a hybrid subscription/Open Access journal. It is one of the most heavily cited journals in the Journal Citation Report category in which it is listed. Amongst the three journals, in 2019, 798 Original Research Articles were peer reviewed. *Clinical Pharmacology & Therapeutics*, in 2019, published 281 articles that had some US federal funding. Many of these papers have multiple funding sources, as much of the research represents collaborative research conducted across national and international boundaries.

Given its large investments in editorial peer review (Editor and Associate Editor honoraria, full-time editorial office employees to manage the peer review process), ASCPT depends upon the revenues that the subscription/QA based flagship journal generates through our publishing agreement with Wiley. The royalty on the sale of subscriptions to institutions and library/national consortia depends upon the current 12-month embargo on published papers (prior to deposit in an Open Access repository). That royalty funds much of ASCPT's programmatic activity that drives the knowledge exchange among members of academe, government and industry through our Annual Meeting and online webinars.

A case in point: this year, our Annual Meeting was scheduled to be held in Houston, TX from March 18-21. Because of the potential impact of COVID-19 on our volunteers, editorial team members, early career attendees, registrants and exhibitors, the Board of

Directors decided to cancel the meeting, which could have driven progress in vaccine and drug development to combat the pandemic forward in real time. The economic impact of the cost of cancelling hotel and travel, refunding registration fees, and losing the income the Society gets from its biotech and pharmaceutical manufacturer exhibitors is an existential threat to the continued viability of the Society. Should we also have to deal with a diminished royalty from the publication of our discipline-leading journals thanks to making content that is currently behind a firewall for 12 months immediately free, the Society is truly in jeopardy of becoming non-viable. The loss of ASCPT would damage the scientific exchange, whether journal- or conference-based, that drives the development of vaccines, therapeutic agents, and strategies to combat epidemics and pandemics.

The Federal Register Request for Information seeks input on four issues.

1. **Access:** all content in our two Open Access journals, in which we have invested over \$1,000,000 in the past 7 years since inauguration of *CPT: Pharmacometrics & Systems Pharmacology* is already completely free to anyone in the world with an internet connection. We waive the Article Processing Charges for countries, institutions and authors who cannot afford to pay them. This model has driven wide access in the WHO list of developing nations that depend upon the most up-to-date information in clinical and translational pharmacology. *Clinical Pharmacology & Therapeutics* has doubled the amount of OA content it publishes in just one year. The ecosystem of publishing, with the invigorating input of cOAlition S in Europe, the engagement of the Bill and Melinda Gates Foundation and the Wellcome Trust, Wiley's diligent efforts to secure contracts with institutions like the OhioLINK consortium and the VIVA initiative in Virginia, has responded in dramatic form to the cry for more public access to scholarly research. For instance, ASCPT has made all of the following pandemic-related content freely available at <https://ascpt.onlinelibrary.wiley.com/action/doSearch?AllField=Corona+virus&SeriesKey=15326535>.

If the US federal agencies had budgets to match those of European (Plan S, JISC) funders who pay the Open Access fees for immediate QA publication, the ASCPT journals could continue to thrive in this transformed economy for scientific publication. We could continue to support our mission-driven activities that could find - because that's what we do - the vaccines and therapeutics for existential threats like Coronavirus - and next year's or the following year's novel virus that could emanate anywhere in the world.

2. **Ensuring Public Access:** the public, as defined in the 2013 OSTP position of "Increasing Access to the Results of Federally Funded Scientific Research", was targeted to students, clinicians, businesses, entrepreneurs, researchers, technologists, and the general public who support these investments as a means to accelerate knowledge and innovation. In the intervening 7 years, all of these groups have been well served by the development of Open Access journals, hybrid subscription/QA journals, and society commitments to

make content on particularly harrowing public health crises such as the COVID-19 crisis freely available. Wiley's Read and Publish and Publish and Read deals open up much of the literature to constituents of institutional consortia, including state-wide institutions, e.g., Ohio and Virginia. Editors are encouraged to make content that has significant public interest freely available online. Each journal has young researchers guiding our social media program, with the resulting broadcast to the interested general public. Much of our content is opaque as far as the general public is concerned - the articles would likely be of little use to the lay public in assessing, for example, the probable future trajectory of COVID-19 therapeutic agent research. The other constituents defined in the 2013 OSTP statement would have access immediately to all content, through subscriptions to *Clinical Pharmacology & Therapeutics*, and open access at their company, institution, or federal (e.g., FDA) level to *Clinical & Translational Science* and *CPT: Pharmacometrics & Systems Pharmacology*.

- 3. Current Limitations:** Universal access to subscribed-to content is a limitation. Federal agencies can do more to make taxpayer funded research results freely and publicly accessible with minimum delay by increasing federal agency research budgets to cover increased Open Access Article Processing Charge costs to the research groups that publish in hybrid journals. If the government wants to facilitate the "flipping" of subscription based journals to full OA, it must increase grant funding to include money for OA publishing, presumably in a range of \$3,000 - \$30,000 per grant, depending on the number of publishable papers emanating from the research. Additionally, the government should encourage the current funder and state initiatives to negotiate "read and publish" and "publish and read" deals with publishers that can enhance funding and speed progress to the public accessibility OSTP wants to see happen. For instance, the Bill and Melinda Gates Foundation is funding significant Open Access publication of their grant-funded research across the spectrum of journals that address infectious diseases, and development of vaccines and therapeutics.

The most serious limitation of the White House's plan is that it will greatly diminish the ability of professional societies like ASCPT to survive, let alone fund Early Career Researchers' activities, meetings where real progress to solve real-world issues like COVID-19 is achieved, and funding grants and prizes that it awards to leaders in the field and emerging stars. We need the sustainable finances from the current business model of our hybrid journal in order to support the mission-driven activities that the Society embraces and has, for decades, supported.

- 4. Impact on American Science Leadership and Competitiveness:** The individuals, corporations, institutions, and funders that drive science innovation in America and globally already have access - through subscriptions and our OA options - to the literature that helps them compete and drive science innovation. Articles in the OA journals are freely available from the moment they are accepted - globally; articles in *Clinical Pharmacology & Therapeutics* are also freely available when Open Access (around 25%) and are extremely widely available, through the subscriptions of more

Open data is of ongoing concern to our members and authors. We strongly encourage authors to deposit their data in a data repository such as Dryad, <https://datadryad.org/submit>. The following link shows current policy on open data: <https://ascpt.onlinelibrary.wiley.com/action/doSearch?AllField=data+deposition&SeriesKey=15326535>

In clinical trials, there are concerns about patient privacy, and industry - biotech and pharmaceutical companies -- is particularly sensitive to data sharing.

Reducing or eliminating the current one-year embargo would significantly jeopardize our organization's ability to invest in producing the high-quality peer-reviewed journals that our readers in the fields of clinical pharmacology and translational medicine community rely on. In so doing, such a policy would contravene Congress' clear guidance to take our role and investments into consideration. Moreover, such a policy would directly result in a reduction in either the quantity or quality (likely both) of peer-reviewed journal articles produced by hundreds of scientific societies like ours.

This would not only be harmful to the scientific research enterprise, it would be harmful to the physicians, scientists and patients who are the ultimate beneficiaries of the scholarly journals we produce.

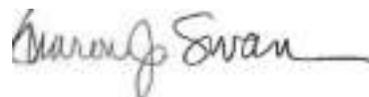
We urge you not to disrupt our ability to support the advancement of research and patient care in the fields of clinical pharmacology and translational science, and we look forward to working together to identify solutions that advance the goals of open science without undermining the communication of research findings and analyses through peer-reviewed journals.

Thank you again for the opportunity to submit these comments.

Sincerely,



Susan A. Abdel-Rahman, PharmD
President



Sharon J. Swan, FASAE, CAE
Chief Executive Officer

April 28, 2020

Lisa Nichols, PhD
Assistant Director for Academic Engagement
Office of Science and Technology Policy (OSTP)

RE: RFI – Public Access to Peer-Reviewed Scholarly Publications, Data and Code
Resulting from Federally Funded Research

Dear Dr. Nichols:

On behalf of the 16,000 members of the American Thoracic Society (ATS), we appreciate the opportunity to comment on the RFI – Public Access to Peer-Reviewed Scholarly Publications, Data and Coding Resulting from Federally Funded Research.

General Comments

The ATS has significant concerns with the policy under consideration mandating immediate public access to all published research supported in whole or in part by federal funding. This policy would result in short- and long-term damage to science and the dissemination of scientific information. We strongly urge the Administration to abandon its new, recommended policy and instead reaffirm the existing policy that allows up to a 12-month embargo on federally funded research.

Large Disruption of a Successful Science Publishing Market

Scientific publishing is a large, global industry with important implications for trade, country-specific intellectual capital, and job creation. According to the International Association of Scientific, Technical and Medical Publishers, there are over 28,000 English language peer-reviewed journals and over 6,000 non-English, peer-reviewed journals that publish over 2.5 million manuscripts annually (1). In 2013, the industry generated an estimated \$25 billion in revenue and directly employed 110,000 people, while indirectly supporting an additional 30,000. Thus, the ATS urges the Administration to carefully consider any potential deleterious economic and employment effects before implementing radical changes in the scientific publishing industry.

Taxpayer-Funded Research

Supporters of the open-access mandate argue that taxpayers should have access to taxpayer-funded research. However, this thinking fails to acknowledge broad taxpayer investments made in a wide array of our societal infrastructure that still require payment

to use. For example, taxpayer funds build hospitals, roads, airports, and sports stadiums, yet tax-paying private citizens are still required to pay hospital bills, highway tolls, airfares, and tickets to use these publicly funded systems. There is no compelling reason scientific research should be an exception to the norm.

Document the Problem

The Administration has failed to make a cogent argument for what is wrong with the current system. Supporters of immediate access have made bold claims, such as “we will never cure cancer until we have open access,” but have failed to show these claims to be based on facts. Since we have not yet cured cancer with or without open access, the ATS would welcome a review and analysis of any evidence that supports this claim and a discussion showing that open access will improve the scientific process.

To summarize: the policy under consideration for immediate public access to all published research supported in whole or in part by federal funding will lead to:

- Irreparable damage to the academic publishing industry – an important US export that generates billions in US dollars,
- Paradoxical decrease in access to scientific publications by US scientists,
- Migration of US intellectual capital and copyright protected material out of the country, and
- Diminished US status as a world leader in science and medicine.

Specific comments are provided below in response to the RFI questions that incorporate the rationale for the ATS concerns for the policy under consideration.

Response to RFI Questions

- *What current limitations exist to the effective communication of research outputs (publications, data, and code) and how might communications evolve to accelerate public access while advancing the quality of scientific research? What are the barriers to, and opportunities for, change?*

With 2.5 million scientific manuscripts published annually, one of the greatest barriers to the effective dissemination of research information is the difficulty in identifying key studies that change and advance our understanding of important scientific concepts, research processes, and potential medical interventions to improve human well-being. Researchers and clinicians lack the time to read every published article that is relevant to their area of expertise. Peer-reviewed journals help address both of these problems. First, most journals specialize in unique fields of study and filter out manuscripts that are

poor quality and not of interest to their readers. Second, the peer-review process adds significant value by identifying errors and necessary clarifications in the work, and pinpointing manuscripts that help advance and change our understanding of the world. In addition, journals ensure the quality of the science by conducting plagiarism, data, and image manipulation checks, as well as technical editing for text clarity. These functions are directly supported by subscription revenue generated by society journals.

Supporters of immediate open access often cite the high cost of journals owned or distributed by commercial publishers as a barrier to access. We point out that the federal government already has a range of powers to address predatory pricing or monopoly power that do not require the free distribution of valuable goods and services. For societies like ATS, our journal subscription fees are low, but necessary to improve the quality of the science we publish. The Office of Science and Technology Policy's (OSTP's) desire to end or shorten the current 12-month embargo policy would have a more damaging effect on society journals than on commercial publishers. If implemented, this policy would effectively mandate an open-access, author-pays model of peer-review publishing, severely disrupting the academic publishing industry and undermining the current infrastructure that disseminates high-quality scientific information.

Would the proposed rule change or increase access to scientific publications by U.S. scientists? No, it would not. In fact, virtually all NIH-funded investigators already have immediate access to newly published research papers through subscriptions paid for by their institutions. The biggest beneficiaries of this proposed policy change would be non-U.S. scientists, governments, and institutions, because they would receive free access to articles that currently require subscriptions to U.S. journals. Such subscriptions currently constitute an important U.S. export generating billions in U.S. dollars. According to the proposed rule change, the NIH would allow NIH grant holders to charge the increased open access fees to their grants. So, in effect, U.S. taxpayers would be subsidizing foreign governments and research centers by obviating the need to buy those subscriptions. It is bitterly ironic that a policy seeking to improve access to research publications by U.S. tax-payers would instead be a free giveaway to foreign entities that is paid for by U.S. citizens.

- *What more can Federal agencies do to make taxpayer funded research results, including peer-reviewed author manuscripts, data, and code funded by the Federal Government, freely and publicly accessible in a way that minimizes delay, maximizes access, and enhances usability? How can the Federal Government engage with other sectors to achieve these goals?*

The ATS strongly recommends that OSTP consider working with the academic publishing industry to expand access to peer-reviewed content rather than issuing mandates that effectively exert eminent domain over copyright-protected materials published in peer-reviewed journals. Before OSTP institutes a policy that would radically disrupt the publishing industry, we urge consideration of other federal mechanisms to address the cost and access issues.

- *How would American science leadership and American competitiveness benefit from immediate access to these resources? What are potential challenges and effective approaches for overcoming them? Analyses that weigh the trade-offs of different approaches and models, especially those that provide data, will be particularly helpful.*

American science leadership and American competitiveness would not benefit from immediate access to peer-reviewed articles, and in fact, would be harmed by such a policy. Subscription access to scientific publications is an important U.S. export that generates billions of dollars. In addition, our investment and acumen in science and innovation is a competitive advantage the U.S. has over many other nations. But this advantage is already under direct threat from other global powers seeking to procure scientific information through illicit means (see FBI notice - China: The Risk to Academia) (2). The mandate under consideration would require that U.S. publishers give away significant intellectual capital, copyright-protected material and potential trade secrets for free, thus threatening our status as world leaders in science and medicine.

- *Any additional information that might be considered for Federal policies related to public access to peer-reviewed author manuscripts, data, and code resulting from federally supported research.*

There are several important issues not addressed in the RFI that should be considered before OSTP proceeds with any further policy making.

How Academic Publishers Will Respond to an Immediate Public Access Mandate

The ATS has been publishing peer-reviewed science since 1917, and for over a hundred years, the subscriber-based publication model has been the industry standard. However, the ATS believes in reasonable public access to our journal content. The ATS offers free access to all our manuscripts—regardless of funding source—after 12 months. Further, clinical practice guidelines and articles with immediate public health or clinical care implications are always made freely and immediately available to the public. During the current COVID-19 epidemic, virtually all journals, including the ATS

journals, are making relevant clinical reports immediately available to everyone at no cost, which stands as an example of responsible public service in situations where immediate universal access to that information will, in fact, improve public health.

If the Administration decides to require immediate public access of all federally funded research, the subscriber-pays publication model may become nonviable. No rational consumer would continue to pay a subscription fee for information that is freely available. This would leave scientific publishers with a limited set of options:

Try to Maintain Subscriber-Pays Model: To comply with immediate access mandate, publishers may try to sustain the subscription model by offering a basic version (e.g., unedited content, with low-resolution images, limited color options, and no podcast or video content) of federally funded manuscripts for free public access, while offering an enhanced version of all articles to subscribers (e.g., edited, with full-color high-resolution images, and full podcast and video content). Further, journals would likely move all non–federally funded research behind paywalls indefinitely, effectively reducing the amount of information that they now share freely with the public after the 12-month embargo. This approach would end up restricting the flow of scientific information, which is the opposite of what the OSTP or medical societies seek to achieve.

Adopt an Author-Pays Model: Currently, author fees for immediate access vary (PLOS One charges \$1,595 per manuscript) but do not cover the full publication costs. The ATS estimates that it would likely need to charge between \$5,000 and \$6,000 per manuscript to implement an economically viable author-pays publication model. Under the current model, ATS authors pay an average of \$1600 per manuscript. For federally-funded research, this cost increase would likely shift to the government. In 2016, NIH grant funding was acknowledged in over 115,000 academic manuscripts (3). Thus, an author-pays model could lead to an over \$500 million annual increase in NIH grant funding used to pay for publication costs. This would divert significant NIH funds from being spent on actual research. Note that this estimate does not consider the wide range of other federal agencies that fund research and cover the associated publication fees.

The ATS strongly recommends that OSTP develop a cost estimate for the increased publication fees that would be borne by the federal government under an author-pays publication model.

However, the federal costs are only half the issue. Currently, U.S. clinician-investigators typically secure their first NIH R01 grant when they are beyond 40 years of age. Before that, these scientists must operate on limited non-federal grants or academic start-up packages, which cannot be re-negotiated if the cost of publishing a paper suddenly rises to \$6000. For the ATS journals, an average of 40-60% of manuscripts do not list federal support and would be subjected to the higher fees without a clear way to absorb those costs. Further, many scientists and clinicians outside the U.S. operate on limited budgets provided by hospitals and universities. The proposed rule change would undermine their ability to carry out that work and therefore diminish the volume and quality of scientific research.

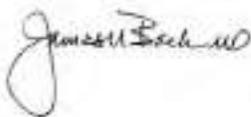
How Will the Author-Pays Publication Model Impact Scientific Quality?

The current subscriber-pays model values quality over quantity, because readers would rather receive a small number of highly impactful papers than a large number of less impactful manuscripts. However, the author-pays model values quantity over quality. Journals would no longer be rewarded for their high publication standards with increased subscriptions. This would allow low-quality publications to maximize their revenue by publishing as many author-pays manuscripts as possible and would lower the bar for well-funded interest groups to publish their findings regardless of the scientific merit of their work. The ATS is concerned about the economic implications of an author-pays model that would reduce scientific quality.

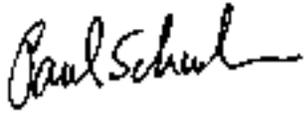
Even academic societies that are able to move to an author-pays publication model will require significant resources to manage the transition. If implemented in the near future, the OSTP policy would affect academic societies when they are already impacted by substantial revenue losses incurred from the recent coronavirus outbreak (cancelled meetings, lost productivity, etc.). We strongly urge OSTP to delay any changes in the current publication policy until academic societies have had a chance to recover from the severe economic impact of the pandemic.

The ATS appreciates the opportunity to provide comments in response to the OSTP's request for information.

Sincerely,



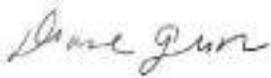
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Executive Director, the American Thoracic Society (ATS)



Diane Gern
Chief, Journals, the American Thoracic Society (ATS)

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- 2) FBI Notice: China: The Risk to Academia <file:///C:/Users/gewart.THORACIC/Downloads/china-risk-to-academia-2019.pdf> (accessed 3/10/20)
- 3) Impact of NIH Research: Our Knowledge <https://www.nih.gov/about-nih/what-we-do/impact-nih-research/our-knowledge> (accessed 3/10/20)

May 1, 2020

BY ELECTRONIC SUBMISSION

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Washington, DC 20504

Response to OSTP Request for Information—FR Doc. 2020-06622—“Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting from Federally Funded Research”

Dear Dr Droegemeier:

ISPOR is grateful for the opportunity to respond to this request for information. In particular, we write to caution OSTP against adopting a policy mandating the free distribution of peer-reviewed manuscripts earlier than 1 year after publication.

ISPOR—the professional society for health economics and outcomes research (HEOR)—is an international, multistakeholder, nonprofit organization. The Society was founded in 1995 with the goal of advancing the science and practice of health economics and outcomes research (HEOR) worldwide. As the field of HEOR has grown in importance, ISPOR’s community has expanded to more than 20,000 individual and chapter members from 110+ countries worldwide. The Society’s membership includes a wide variety of healthcare stakeholders, including researchers and academicians, assessors and regulators, payers and policy makers, the life sciences industry, healthcare providers, and patient engagement organizations.

Today, ISPOR is recognized as the leading source for scientific conferences, MEDLINE®-indexed publications, good practices guidance, and education in the HEOR field. Our two peer-reviewed journals, *Value in Health* and *Value in Health Regional Issues*, publish original research and health policy articles that advance the field of health economics and outcomes research to help healthcare leaders make evidence-based decisions.

Ultimately, we strive to support the progress of science by producing and broadly disseminating the highest quality peer-reviewed journals possible. Publishers and societies have worked to strengthen scholarly communication and promote open science. However, it is critical that these efforts take place within a framework that respects intellectual property rights and our ability to invest in high-quality publications, and that does not hinder researchers from communicating their discoveries. Our organization is currently deeply engaged in efforts to respond to the COVID-19 pandemic. As part of our annual (virtual) conference, we have included a new, complimentary, preconference plenary session entitled, "HEOR in the Era of COVID-19," which is available to both members and nonmembers. ISPOR journals are also making every effort to provide expedited peer review and accelerated publication of all COVID-19-related papers. We are concerned that OSTP's significant new regulatory proposal is a distraction from our ongoing efforts to respond to the current crisis and would undermine our stability and undercut our ability to respond to future health crises.

As you are aware, federal agencies currently require that peer-reviewed manuscripts be made freely available online—within 1 year of publication—if they discuss research funded at least in part by a government grant.¹ This policy represents a significant compromise that balances our shared goals of providing broad access with the need for our organization to recoup the substantial investments we make in the peer-review, editing, publication, distribution, and long-term stewardship of these articles. This 1-year compromise contrasts with the length of a full copyright term of life-of-the-author plus 70 years. Importantly, this compromise reflects Congress' guidance (in the authorizing legislation for the current policy) that the Administration must "take into consideration the role that scientific publishers play in the peer review process in ensuring the integrity of the record of scientific research, including the investments and added value that they make."²

Reducing or eliminating the current 1-year embargo would significantly jeopardize ISPOR's ability to invest in producing the high-quality peer-reviewed journals that our readers in the HEOR community rely on. In so doing, such a policy would contravene Congress' clear guidance to take our role and investments into consideration. Furthermore, such a policy would directly result in a reduction in either the quantity or quality (or more likely, both) of peer-reviewed journal articles produced by hundreds of organizations like ours.

This would not only be harmful to the research enterprise, it would also be harmful to the HEOR professionals, payers, policy makers, and the patients who are the ultimate beneficiaries of the scholarly journals we produce.

¹ These policies were developed pursuant to OSTP's requirement that agencies "shall use a twelve-month post-publication embargo period as a guideline for making research papers publicly available . . ." See OSTP Memorandum on "Increasing Access to the Results of Federally Funded Scientific Research" (Feb. 22, 2013).

² America COMPETES Reauthorization Act of 2010, Section 103(b)(9), *available at*: <https://www.congress.gov/111/plaws/publ358/PLAW-111publ358.pdf>.

We urge you not to disrupt our ability to support the advancement of research in the HEOR field, and we look forward to working together to identify solutions that advance the goals of open science without undermining the communication of research findings and analyses through peer-reviewed journals.

Thank you again for the opportunity to submit these comments.

Sincerely,



Nancy S. Berg
CEO and Executive Director
ISPOR

April 28, 2020

BY ELECTRONIC SUBMISSION

Dr. Kelvin K. Droegemeier, Director
Dr. Lisa Nichols, Assistant Director for Academic Engagement
Office of Science and Technology Policy
Eisenhower Executive Office Building
1650 Pennsylvania Avenue, NW
Washington, DC 20504
publicaccess@ostp.eop.gov

Response to OSTP Request for Information – FR Doc. 2020-06622 – “Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research”

The American Institute of Chemical Engineers (AIChE) is grateful for the opportunity to share our views on opportunities to strengthen the system of scholarly communication and increase public access to research arising from federal funding.

AIChE is a professional society of 60,000 chemical engineers who work in corporations, universities, and government using their knowledge of chemical processes to develop safe and useful products for the benefit of society. Through its varied programs, AIChE continues to be a focal point for information exchange on the frontiers of chemical engineering research in such areas as energy, sustainability, biological and pharmaceutical engineering, environmental engineering, nanotechnology, and chemical plant safety and security. AIChE publishes six peer-reviewed journals — *AIChE Journal*; *Bioengineering & Translational Medicine*; *Biotechnology Progress*; *Environmental Progress & Sustainable Energy*; *Journal of Advanced Manufacturing and Processing*; and *Process Safety Progress (PSP)*. More information about AIChE is available at www.aiche.org.

AIChE is committed to open science while maintaining the viability of the organization and the multifaceted programming and services it provides its members that enable them to expand their research and professional output. To this end, since the 2013 OSTP memo “Increasing Access to the Results of Federally Funded Scientific Research,” AIChE has:

- launched the gold open access journal *Bioengineering & Translational Medicine*
- ensured that the other five journals in the AIChE portfolio provide a mechanism for authors to comply with funder mandates (including U.S. government funding)
- initiated a transparent peer review pilot for two AIChE journals (which goes above and beyond the 2013 OSTP memo definition of publication and data)
- initiated a preprint publication pilot program for the *AIChE Journal*.

We strive to support the progress of science and engineering by producing and broadly disseminating the highest quality peer-reviewed journals possible. However, it is critical that these efforts take place within a framework that respects intellectual property rights and our ability to invest in high-quality publications, and that does not hinder researchers from communicating their discoveries.

Current policy requires peer-reviewed manuscripts be made freely available online — within one year of publication — if they discuss research funded by a government grant. This policy balances our shared goal of providing broad access with the need for our organization to recoup the substantial investments we make in the peer-review, editing, publication, distribution, and long-term stewardship of these articles. This balance reflects Congress' guidance (in the authorizing legislation for the current policy) that the Administration must "take into consideration the role that scientific publishers play in the peer review process in ensuring the integrity of the record of scientific research, including the investments and added value that they make."

We are concerned that a primary focus of the discussion so far, including in this RFI, has revolved around eliminating the 12-month period of effective intellectual property protection for scholarly publications reporting on federally funded research. The overall stability afforded by the current policy has helped to unleash investments and innovations in the scholarly communication ecosystem. Today, virtually all peer-reviewed articles reporting on federally funded research are made freely accessible, researchers have more publishing options than ever before, and innovation is thriving across scholarly publishing. Publishers, societies, institutions, libraries, researchers, funders, and others are working to develop creative ways to disseminate knowledge.

Reducing or eliminating the current one-year embargo would jeopardize our ability to invest in producing the high-quality peer-reviewed journals that our readers in the chemical engineering community rely on. Furthermore, it would result in a reduction in either the quantity or quality (or, more likely, both) of peer-reviewed journal articles produced by organizations like ours.

We urge you not to disrupt our ability to support the advancement of research, and we look forward to working together to identify solutions that advance the goals of open science without undermining the communication of research findings and analyses through peer-reviewed journals.

Thank you again for the opportunity to submit these comments.

Sincerely,

A handwritten signature in black ink that reads "June C. Wispelwey". The signature is written in a cursive, flowing style.

June C. Wispelwey
Executive Director and CEO



April 28, 2020

BY ELECTRONIC SUBMISSION

Dr. Kelvin K. Droegemeier
Director, Office of Science and Technology Policy
Eisenhower Executive Office Building
1650 Pennsylvania Avenue, NW
Washington, DC 20504

Response to OSTP Request for Information - FR Doc. 2020-06622 - "Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research"

Dear Dr. Droegemeier:

The American Academy of Ophthalmology is grateful for the opportunity to respond to this request for information. In particular, we write to caution OSTP against adopting a policy mandating the free distribution of peer-reviewed manuscripts earlier than one year after publication.

The mission of the American Academy of Ophthalmology is to protect sight and empower lives by serving as an advocate for patients and the public, leading ophthalmic education, and advancing the profession of ophthalmology. As the world's largest association of eye physicians and surgeons, our global community of 32,000 medical doctors set the standards for ophthalmic education and advocating for our patients and the public. Each of our peer-reviewed journals—*Ophthalmology*, *Ophthalmology Retina*, and *Ophthalmology Glaucoma*—pursues excellence through unbiased peer-review, the advancement of innovation and discovery that directly impacts patient care, and the promotion of lifelong learning.

Ultimately, we strive to support the progress of science by producing and broadly disseminating the highest quality peer-reviewed journals possible. Publishers and societies have worked to strengthen scholarly communication and promote open science. However, it is critical that these efforts take place within a framework that respects intellectual property rights and our ability to invest in high-quality publications, and that does not hinder researchers from communicating their discoveries.

The Academy is currently deeply engaged in efforts to respond to the COVID-19 pandemic by promptly publishing crucial information on how our physician community can provide patient care while protecting themselves from contracting this novel virus. We are concerned that OSTP's significant new regulatory proposal is a distraction from our ongoing efforts to respond to the current crisis and undercuts our ability to respond to future health crises.

As you are aware, federal agencies currently require that peer-reviewed manuscripts be made freely available online—within one year of publication—if they discuss research funded at least in part by a government grant.¹ This policy represents a significant

¹ These policies were developed pursuant to OSTP's requirement that agencies "shall use a twelve-month post-publication embargo period as a guideline for making research papers publicly available . . ." See OSTP Memorandum on "Increasing Access to the Results of Federally Funded Scientific Research" (Feb. 22, 2013).

compromise that balances our shared goals of providing broad access with the need for our organization to recoup the substantial investments we make in the peer-review, editing, publication, distribution, and long-term stewardship of these articles. This one-year compromise contrasts with the length of a full copyright term of life-of-the-author plus 70 years. Importantly, this compromise reflects Congress' guidance (in the authorizing legislation for the current policy) that the Administration must "take into consideration the role that scientific publishers play in the peer review process in ensuring the integrity of the record of scientific research, including the investments and added value that they make."²

Reducing or eliminating the current one-year embargo would significantly jeopardize our organization's ability to invest in producing the high-quality peer-reviewed journals that our readers in the ophthalmology community rely on. In so doing, such a policy would contravene Congress' clear guidance to take our role and investments into consideration. Furthermore, such a policy would directly result in a reduction in either the quantity or quality (or more likely, both) of peer-reviewed journal articles produced by hundreds of organizations like ours.

This would not only be harmful to the research enterprise, it would also be harmful to the patients, medical professionals, scientists, engineers, the general public who are the ultimate beneficiaries of the scholarly journals we produce.

We urge you not to disrupt our ability to support the advancement of ophthalmic research and patient care, and we look forward to working together to identify solutions that advance the goals of open science without undermining the communication of research findings and analyses through peer-reviewed journals.

Thank you again for the opportunity to submit these comments.

Sincerely,

A handwritten signature in black ink, appearing to read "David W. Parke II, MD". The signature is fluid and cursive, written in a professional style.

David W. Parke II, MD
Chief Executive Officer
American Academy of Ophthalmology

² America COMPETES Reauthorization Act of 2010, Section 103(b)(9), available at: <https://www.congress.gov/111/plaws/publ358/PLAW-111publ358.pdf>.

28 April 2020



Lisa Nichols, Assistant Director for Academic Engagement
Office of Science Technology Policy
Eisenhower Executive Office Building
Washington, DC 20504

Dear Dr. Nichols,

On behalf of the American Geophysical Union (AGU), a nonprofit, nonpartisan scientific association representing more than 110,000 Earth and space scientists worldwide, we appreciate the opportunity to submit our responses to the OSTP on public access to peer-reviewed scholarly publications, data, and code resulting from federally funded research.

Before responding in detail, we would like to provide some overall perspectives. First, AGU's mission¹ is "to support and inspire a global community of individuals and organizations interested in advancing discovery in Earth and space sciences and its benefit for humanity and the environment." Efforts around open science, open data, ethics, quality and integrity, transparency, and diversity, as well as communicating, interpreting, and sharing research to the public all mutually support this mission. We thus view open science as broader than free access to peer-reviewed research and data and code. It also includes expanding access to participate in scientific meetings and sharing this content; expanding diversity and inclusion in science globally, and promoting equitable participation in scientific activities such as peer review, honors, editorial positions and more; and sharing, communicating, and engaging the public in science and science-related activities equitably. These pursuits all contribute to a robust scholarly infrastructure and public access and trust in science.

Secondly, reinforcing and ensuring quality and integrity in peer-reviewed publications and research data are important not just for robust science but also for the diverse critical public uses of this output.² This includes that the use of "peer-reviewed" publications is codified in U.S. legal, regulatory, and advisory systems, and in comparable international uses.³

This broader picture frames our specific comments, which highlight that 1) there are opportunities, particularly with data and code, for impactful leadership by the U.S.; 2)

¹ https://news.agu.org/files/2020/04/Final_AGU_Strategic_Plan_2020_Final.pdf

² Hanson, B., *et al.* (2017), Earth and space science for the benefit of humanity, *Eos*, 98, <https://doi.org/10.1029/2018EO071991>.

³ Hanson, R. B., "The new landscape of ethics and integrity in scholarly publishing," in Gunderson, L., Editor, *Scientific Ethics* (AGU/Wiley, Washington, DC, 2017).
<https://doi.org/10.1002/9781119067825.ch8>

complicated balances maintain transparency, access, quality, reliability, broad communication, and integrity in science outputs while supporting robust public uses, decision making, and other uses. Sometimes seemingly positive steps can have unintended consequences affecting broad participation, quality, or other goals. One example is the growth of “predatory” open-access journals and the harm they have done.

Expanding Access to Peer-Reviewed Scholarly Publications

AGU is committed to open science and strives to provide the widest possible dissemination for scientific journal and book content to encourage global, inclusive participation. All new journals that AGU acquired or started since 2010 have been gold open access titles. AGU flipped *Space Weather*⁴ to gold open access starting in 2020, and all other subscription journals allow an open access option. In 2014, AGU began to provide free access to all content 24 months after publication going back to 1997. Since 2019, AGU has provided free access to members to all older journal content (the AGU Digital Library, 1895-1996)⁵. Articles are also free to journalists as part of AGU’s outreach to the press and free to readers when major media links to the articles (a service provided by our publisher, Wiley). AGU also participates in Research4Life,⁶ which offers free or low-cost access to publications for audiences in developing countries.

AGU has also developed liberal green open-access policies and options for authors. AGU allows authors to deposit their final published paper in an institutional repository or personal website after 6 months, and AGU participates in CHORUS⁷ to provide access to federally funded research. AGU (along with Wiley and Atypon) helped launch a preprint server, the Earth and Space Science Open Archive (ESSOAr)⁸ and encourages authors to deposit manuscripts there. This allows all authors, not just those with funding, the ability to share their work freely early in the process, including at submission or acceptance. ESSOAr also allows authors to share posters presented at meetings. As you know, preprints are being used to share early research related to COVID-19. Through these mechanisms, 96% of all content published in AGU journals since 1997 is freely available.

In conjunction with Wiley, AGU publications also are included in several “publish and read” deals across Europe, as well as with a few universities and consortia in the U.S. These transformative deals provide a mechanism for institutions to pay author open access fees as a bridge to move away from journal subscriptions. Through our gold and green open access options, as well as by our participation in transformative deals, AGU is compliant with Plan S.

⁴ <https://fromtheprow.agu.org/agus-journal-space-weather-to-become-open-access/>

⁵ <https://fromtheprow.agu.org/agu-digital-library-2020-added-membership-benefit/>

⁶ <https://www.research4life.org/>

⁷ <https://www.chorusaccess.org/>

⁸ <https://essoar.org>

At the same time, AGU journals and AGU have expanded coverage and translation of our science to other scientists, the public, and policy makers. We are now publishing more than 100 commentaries⁹ per year, all of which are freely available immediately. As part of our Centennial in 2019, AGU researchers published dozens of papers overviewing “Grand Challenges” in our sciences, all open access. AGU also publishes *Eos.org*, which summarizes AGU and other journal content, completely free to everyone.

To increase quality, AGU journals have expanded editorial teams and enhanced requirements and quality assurance around open data and code (see below). We have used our publications and related data to explore issues around and address diversity, inclusivity, and implicit bias in our science.¹⁰

In sum, AGU has invested heavily and operated to expand access greatly to not only the peer-reviewed science but also a wider variety of enriched material aimed at broader audiences that help provide meaningful access to research, all while improving the quality of the content.

There are thus multiple options for researchers and readers in the current system. Certainly, some of these options have not yet been widely adopted by other or all stakeholders, such as preprints, but the landscape isn't limiting. The broad society efforts to enhance quality are so far supported by current business models for scholarly publication. Further incentivizing use of these options, including rewarding quality and expanding broader communication resources, would be welcome and would indicate to societies that their investments are valued.

Many researchers in the Earth and space sciences do not have funding to publish all their research in gold open access titles. In our recent survey of authors, 28% said they did not have funding for any open access fees, let alone for publishing all their papers in this way, and a recent survey by Springer shows that globally, open access funds are cobbled together.¹¹ About 15% of recent AGU journal articles and 30% of Earth science articles in the Web of Science do not list any grant support. Many of these authors are in the U.S. and other developed nations. AGU's hybrid portfolio ensures that researchers from around the world can participate in our journals. Submissions have continued to increase across AGU titles, indicating the value of this model and our journal reputation in the community, and the

⁹ <https://agupubs.onlinelibrary.wiley.com/topic/vi-categories-19449208/c298d643-1afd-421f-b0c8-6ae8645c1f28/19449208>

¹⁰ See Lerback and Hanson, 2017; <https://www.nature.com/news/journals-invite-too-few-women-to-referee-1.21337>

¹¹ <https://www.springernature.com/gp/researchers/the-source/blog/blogposts-open-research/apcs-in-the-wild-whitepaper/17838036>

value of additional content AGU provides. This range of options, combined with the other initiatives described above, maximizes availability for all and enhances U.S. scientific leadership.

At the same time, publishers, including AGU, have worked to develop and expand gold open access journals with regard to the 12-month publication embargo in the U.S. We hope OSTP gives careful thought to the effect that changing or eliminating the embargo would have on support for gold open access journals and subscription titles (the hybrid model). We also hope that there is an understanding of the impact that new mandates may have on the investments that AGU and other societies are making to ensure quality and expanded access and communication through preprints and other research outputs. We would welcome a deeper engagement and discussion between OSTP and societies on how to optimize access, quality, integrity, participation, and communication across the sciences.

Finally, AGU and other society publishers, as well as authors, are trying to navigate diverse requirements across funders and researchers globally. More than half of the published papers in AGU journals now are by international author teams funded from multiple sources. Streamlining and aligning policies regarding green access, institutional repositories, use of preprints, and open access requirements would be both beneficial but also cost-effective. Having different, redundant, changing, or conflicting requirements for each author on a diverse team adds greatly to confusion and inefficiency. In turn, changing policies can complicate business decisions (for example, intentions to flip journals to gold open access).

Expanding Access to Data and Code

AGU has long recognized the critical value of well curated and shared data. AGU was one of the first societies, in 1997, to adopt a position statement on data, noting that “Earth and space science data are a world heritage.” AGU’s data position statement¹² was updated in 2019, and affirms that: “All players in the science ecosystem—researchers, repositories, publishers, funders, institutions, etc.—should work to ensure that relevant scientific evidence is processed, shared, and used ethically, and is available, preserved, documented, and fairly credited.”

For data and code, while there are available or emerging international standards and leading practices for funders, researchers, repositories, and journals, and general support for these among stakeholders, in practice these are haphazardly followed and implemented for a variety of reasons. As emphasized recently by the National Academy of Science,

¹² https://www.agu.org/Share-and-Advocate/Share/Polymakers/Position-Statements/Position_Data

Engineering, and Medicine,¹³ “All organizations within the scientific ecosystem need to promote that preserving data and code are essential to ensure the integrity and transparency of scientific research.” This is an area where strong support and coordinated leadership from the U.S. government and agencies would have a huge impact.

AGU provided suggestions for expanding data and code access in our response to the recent OSTP RFC on desirable repository characteristics.¹⁴ In the Earth and space sciences, thanks to two efforts led by AGU and our partners, through the Coalition on Publishing Data in the Earth and space sciences (COPDESS), and the Enabling FAIR Data Project,¹⁵ many publishers, repositories, and other key stakeholders are aligned in and committed to¹⁶ supporting open and shared data and code. Major challenges remain but adoption can be greatly accelerated by federal guidance and support.

One of those major challenges is cultural adoption across science. Guidance that encouraged standard or common FAIR data and code management plans early in research projects, helped coordination across institutions including internationally, and indicated financial support for curation (see below) would be impactful. This would complement and support initiatives that societies, repositories, and publishers are already engaged in.

Another challenge is the need for adequate funding to ensure the value of data. Across science, there is a robust community of domain repositories that specialize in ensuring that data for specific disciplines is well-documented and integrated with a larger body of similar types of data for discoverability and ease of use. Many of these repositories do not have adequate funding to support all the data that should be sent to them. In addition, funding is typically for 2-3 years, which limits their ability to improve or maintain infrastructure. Some domains lack a repository, causing data to be placed in general repositories that may not support the value-added services needed for understanding and reuse. Finally, many repositories restrict the sources of data to, for example, projects supported by certain funders. Overall, the landscape is confusing and complicated for researchers trying to find the best repository and more so when working on international and multi-institutional teams with diverse funding.

¹³ National Academies of Sciences, Engineering, and Medicine. 2018. *Open Science by Design: Realizing a Vision for 21st Century Research*. Washington, DC: The National Academies Press. <https://doi.org/10.17226/25116>.

¹⁴ AGU Response to OSTP RFC - Desirable Repository Characteristics <http://doi.org/10.5281/zenodo.3768718>

¹⁵ <https://copdess.org/enabling-fair-data-project/>; see Stall, S, et al. (2019), Make scientific data FAIR, *Nature* 570, 27-29 (2019) doi: [10.1038/d41586-019-01720-7](https://doi.org/10.1038/d41586-019-01720-7)

¹⁶ <https://copdess.org/enabling-fair-data-project/commitment-statement-in-the-earth-space-and-environmental-sciences/>

Wide, rapid, and standard availability of these data and other research outputs provide enormous societal benefits, including to our economy and health. These benefits depend on access to data collected worldwide, as we have seen with the COVID-19 pandemic. American competitiveness will be accelerated and protected by ensuring leadership and global standards and practices across stakeholders.

It will also be important that the U.S. consider the current and developing efforts related to this RFI occurring in the European Union, United Kingdom, Australia, and elsewhere to ensure that goals and expectations are complementary. By taking the lead in this way, the U.S. can help work through challenges around data sharing in countries that are not as collaborative.

Summary

AGU supports expanding access to the scholarly outputs that will secure and support the research enterprise broadly and at the same time ensuring that these outputs are of high quality. We encourage an open process toward these goals that engages societies and our members who have deep experience in scholarly communication and outreach. We value the federal government as a partner and would welcome further dialogue and input.

Contacts for further information:

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Matt Giampoala, Vice President, Publications, mgiampoala@agu.org

Shelley Stall, Senior Director, AGU Data Leadership, sstall@agu.org

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Request for Information: Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research

<https://www.federalregister.gov/documents/2020/03/31/2020-06622/request-for-information-public-access-to-peer-reviewed-scholarly-publications-data-and-code>

The International Union for Conservation of Nature (IUCN) is a membership Union composed of both government and civil society organizations. It harnesses the experience, resources, and reach of its more 1,300 Member organizations (including 120 Members in the United States) and the input of more than 15,000 experts (more than 2,000 of whom are based in the United States). This diversity and vast expertise makes IUCN the global authority on the status of the natural world and the measures needed to safeguard it.

Access to the scientific literature is perceived to be a challenge to the biodiversity conservation community, but actual level of literature access relative to needs has never been assessed globally. We examined this question by surveying the constituency of the International Union for Conservation of Nature (IUCN) as a proxy for the conservation community. One example of how representative IUCN is of the conservation community is that, in 2017, there were 114 IUCN NGO Members in the USA, with a combined annual budget >\$4.94bn, compared to 532 US NGOs, with a combined annual budget = \$4.90bn, listed by Charity Navigator (<https://www.charitynavigator.org/>) in the categories “Environment”, “Wildlife Conservation”, “Zoos and Aquariums” and “Botanical Gardens” but not IUCN Members (R. Merizalde unpublished data).

Our survey generated 2,285 responses. (We reported the results in a bioRxiv preprint at <https://www.biorxiv.org/content/10.1101/2020.03.30.010058v1>, and the full manuscript is under review for publication in a peer-reviewed journal.) Of these respondents, ~97% need to use the scientific literature in order to support their IUCN-related conservation work, with ~50% needing to do so at least once per week. The crux of the survey revolved around the question, “How easy is it for you currently to obtain the scientific literature you need to carry out your IUCN-related work?” and revealed that roughly half (49%) of the respondents find it not easy or not at all easy to access scientific literature. We fitted a binary logistic regression model to explore factors predicting ease of literature access. Whether the respondent had institutional literature access (55% do) is the strongest predictor, with region (Western Europe, the United States, Canada, Australia and New Zealand) and gender (male) also significant predictors. Approximately 60% of respondents from Western Europe, the United States, Canada, Australia and New Zealand have institutional access compared to ~50% in Asia and Latin America, and ~40% in Eastern Europe and in Africa. Nevertheless, accessing free online material is a popular means of accessing literature for both those with and without institutional access. Overall, it is apparent that access to the literature is a challenge facing roughly half of the conservation community worldwide.

Thus, it would appear that the paywalled nature of research outputs remains a limitation to their access, much to the detriment of IUCN's vital work of conserving nature and accelerating the transition to sustainable development. Our results strengthen arguments as to the importance of libraries in conservation agencies and institutions, given our strong evidence that those in the conservation community that have library-facilitated access to the literature benefit greatly in comparison to those that do not. Opportunities for overcoming the information divide and their subsequent constraints on conservation work include solutions such as reinforcement of institutional and donor support to institutional libraries and knowledge management as well as of open access initiatives.

Sincerely,
Daisy Larios
IUCN Library and Publications Manager



April 27, 2020

Dr. Lisa Nichols
Assistant Director for Academic Engagement
Office of Science and Technology Policy
The White House
publicaccess@ostp.eop.gov

Subject: AAAS Response to Request for Information: Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting from Federally Funded Research

Dr. Nichols:

We are writing to communicate the views of the American Association for the Advancement of Science (AAAS), the world's largest multidisciplinary scientific society, on the Office of Science and Technology Policy's request for information on public access to peer-reviewed scholarly publications, data and code resulting from federally funded research.

Improving access to scientific and technical information is a longstanding commitment of AAAS and the *Science* family of journals, one tied closely to our mission of advancing science and innovation throughout the world for the benefit of all people. We appreciate the opportunity to submit these comments as part of OSTP's goal to "explore opportunities to make the knowledge, information and data generated by federally funded research more readily accessible to students, clinicians, businesses, entrepreneurs, researchers, technologists, and the general public who support these investments."

Our comments respond directly to the questions raised in the RFI, and AAAS would welcome opportunities to discuss further and provide additional information on other issues that may arise as you consider the range of comments you receive. Opportunities to make scientific knowledge and information available can take many forms and benefit from efforts in science communication and other forms of public engagement. Furthermore, "access" does not mean equity and advancing public access does not address other challenges that the research enterprise faces, including longer training periods for young investigators and increased competition for federally funded grants.

Question 1: What current limitations exist to the effective communication of research outputs (publications, data, and code) and how might communications evolve to accelerate public access while advancing the quality of scientific research? What are the barriers to and opportunities for change?

AAAS and the *Science* family of journals support open access (OA) options that are informed by the scientific community, contribute to the accurate record of published scientific content, and

protect the overall integrity of that content. Read more on OA at AAAS:
www.sciencemag.org/authors/open-access-aaas.

Effective communication of the scientific literature is jeopardized when versions of a scientific paper are not properly labeled. AAAS supports the author-accepted version of a paper being broadly and immediately shared; for example, authors may post their accepted papers immediately on their institutional (or personal) website. However, only the final version of a manuscript overseen by a publisher committed to maintaining the accuracy of the scientific record can be counted on to be corrected, retracted or otherwise updated with clear notation for the global scientific research community. The ability to follow up on versions of the scientific record requires substantial resources. For example, a 2016 *Science* [study](#) by Siddappa N. Byrareddy *et al.* that proposed a new approach to thwarting HIV; after having issued an Editorial Expression of Concern (EEoC) on the study in March 2019, when the journal learned the study had used an SIV virus variant not explicitly stated in the manuscript and that could have affected results, *Science* issued an official Correction six months later, in September 2019, to denote the virus used was not the wild-type. Both the EEoC and Correction were highlighted to the research community and to a global network of reporters to make clear the initial 2016 result “[was] not robust and therefore [did] not provide a good basis for guiding work on therapies for HIV.”

At AAAS, we believe that publisher oversight of a final version is essential not only to maintaining the quality and accuracy of scientific research but also to advancing the subsequent work from which new research stems.

How scientific communication evolves to accelerate public access while at the same advancing the quality of scientific research is a complicated question. High-quality scientific publishing, as AAAS does, requires considerable resource investment throughout the peer review and publication process, in order to identify the papers that have the potential to significantly impact the pace of science. Peer review itself involves not only the review of technical merit but also confirmation of adherence to editorial policies and maintaining the partnership with the scientific community to establish standards that support transparency and reproducibility.

This and related efforts are resource-intensive; the demand for quality assurance is only increasing with time as the advancement of scientific knowledge continues to accelerate across academic institutions and laboratories. It is AAAS’s view, with extensive experience as a leading global publisher, that scientists across disciplines look to non-profit scholarly journals like ours as filters for quality and merit. Every researcher who requires access to the broad range of research articles and news that is provided by the *Science* family of journals – researchers at large and small research institutions alike – has that access. The liberal green open access policies AAAS has supported for many years can overcome any temporary limitation.

AAAS makes all research articles of immediate relevance to public health concerns, including those on COVID-19, free. As the COVID-19 pandemic grips the globe, we are deeply committed to this effort – publishing [leading research](#) on SARS-CoV-2 structure, epidemiology, and therapeutics which readers can consume right away. However, the approach the *Science* family has taken to ensure all COVID-19 studies are swiftly reviewed and freely available – just as it does with other research on immediate public health concerns – is not sustainable across the journal portfolio for a publisher like AAAS, which seeks to do high-quality peer review. It is also not in the best interest of advanced scientific communication; when we publish this content “immediate release” (without our standard, four-day reporter embargo), science journalists who

look to journals like ours as filters for quality content may not write stories at all. Or, even the most veteran among them, we've learned, will write related stories after speaking to fewer sources and doing narrower analysis. This affects the quality of news stories for the public.

While this is a tradeoff AAAS is willing to make for this issue so that COVID-19 content can reach the research community immediately upon publication, it is not a result we, as a mission-driven organization focused on accurate and relevant science communication, would seek for all research we publish. The embargo system AAAS utilizes to provide content to reporters with short advance notice shows time and again it supports more accurate and contextualized science communication, which in turn builds awareness of scientific findings and public trust. This is a service our authors routinely tell us they value; it improves broader access to and use of their work, leading to new research, new academic collaborations, and beyond.

An opportunity for change as relates to effective communication rests with federal agencies that fund science in partnership with non-profit scholarly publishers. These agencies should implement guidelines for access to data in publications sufficient to ensure the ability to reproduce the research results that publishers can enforce. In such a scenario, authors funded by such agencies should have data management plans that allow scholarly journals to include links to the relevant data repository in their publications. These guidelines would further help efforts to ensure data and code underlying research outputs are accessible, as discussed in more detail below. Any guidelines, however, must ensure the protection of confidential business information, personal identification information, informed consent agreements, and material transfer agreements.

Question 2: What more can Federal agencies do to make tax-payer funded research results, including peer-reviewed author manuscripts, data, and code funded by the Federal Government, freely and publicly accessible in a way that minimizes delay, maximizes access, and enhances usability? How can the Federal Government engage with other sectors to achieve these goals?

Access is a foremost consideration at AAAS, where our mission is to communicate science accurately and broadly. AAAS publishes one gold open access journal and five subscription-based journals that have liberal green open access policies; authors may place their accepted manuscripts in an institutional repository immediately upon publication, with no delay.

To make data underlying taxpayer funded research results even more accessible, federal agencies that fund science should implement guidelines for data availability in publications. These guidelines should include a clear set of criteria for data deposition and ease of linking to that data, for use by readers. Publishers could be the enforcers of such guidelines. AAAS, for example, could require that authors funded by federal agencies include links to the relevant data repository in their manuscripts, as a criterion to publish.

To enhance usability of taxpayer funded research results, federal agencies should require that versions of a manuscript – be they preprint, author-accepted, or final – be clearly labeled. Only the final version handled by a publisher committed to maintaining the accuracy of the scientific record can be counted on to be corrected, retracted or otherwise updated with clear notation. The ability to manage and update on versions of record requires substantial resources, as noted previously. At AAAS, we believe oversight of a final version is essential not only to maintaining

the quality of scientific research, but also to advancing subsequent work from which new research stems.

Question 3: How would American science leadership and American competitiveness benefit from immediate access to these resources? What are potential challenges and effective approaches for overcoming them? Analyses that weigh the trade-offs of different approaches and models, especially those that provide data, will be particularly helpful.

American science could help maintain global leadership in scientific competitiveness by guiding federal agencies that fund science to require that versions of a manuscript – be they preprint, author-accepted, or final – be clearly labeled. This guidance would help our nation’s non-profit scholarly publishers advance their leadership in protecting the scientific integrity of the research record and in ensuring that derivative work is based on the most up-to-date science. Research published during the COVID-19 pandemic is but one example of when such efforts are essential; the use of basic research and new efforts to improve diagnostics or develop therapies, for example, will best serve Americans and the world when based on the most accurate, up-to-date work as reflected in the final versions.

Federal agencies that fund science should ensure the researchers they fund understand the importance of data deposition and accurate version labeling. AAAS, among other publishers, could partner with these agencies by enforcing related guidelines as a criterion for publication.

Question 4: Any additional information that might be considered for Federal policies related to public access to peer-reviewed author manuscripts, data, and code resulting from federally supported research.

It is AAAS’s view, and its extensive experience as a global publisher, that scientists across disciplines look to non-profit scholarly journals like ours as filters for quality and merit. We remain committed and focused on the community’s needs and goals through our subscription and open-access publications. We support open access options that are informed by the scientific community, contribute to the accurate record of published scientific content, and protect the overall integrity of that content.

If federal agencies adopted the policies proposed above, AAAS would be an eager partner in helping to develop such policies and enforcing them, to help make America a global leader in scientific integrity-keeping and research advancement, while maintaining our commitment to author freedom and broad science communication.

Thank you for the opportunity to provide comment.

Sincerely,



Sudip S. Parikh, PhD
Chief Executive Officer and
Publisher, *Science* Family of Journals



H. Holden Thorp, PhD
Editor-in-Chief
Science Family of Journals

This response to the White House Office of Science and Technology Policy's "Request for Information: Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research" is submitted on behalf of the Open Research Funders Group. The Open Research Funders Group (ORFG) is a partnership of 17 philanthropic organizations committed to the open sharing of research outputs. We believe this benefits society by accelerating the pace of discovery, reducing information-sharing gaps, encouraging innovation, and promoting reproducibility. The ORFG engages a range of stakeholders to develop actionable principles and policies that promote greater dissemination, transparency, replicability, and reuse of papers, data, and a range of other research types. Our current roster of philanthropic organizations includes the Bill & Melinda Gates Foundation, the Gordon and Betty Moore Foundation, Howard Hughes Medical Institute, the Lumina Foundation, and the Robert Wood Johnson Foundation. Collectively, the ORFG members hold assets in excess of \$100 billion, with total annual giving in the \$10 billion range. Our members fund critical research across the entirety of the disciplinary spectrum, including life sciences, physical sciences, social sciences, and the humanities. This response has been prepared by Greg Tananbaum, the chief executive of the Open Research Funders Group, in conjunction with representatives of the ORFG membership.

The Open Research Funders Group is pleased to respond directly to the specific topics broached in the RFI:

What current limitations exist to the effective communication of research outputs (publications, data, and code) and how might communications evolve to accelerate public access while advancing the quality of scientific research? What are the barriers to and opportunities for change?

The primary limitation hindering effective communication of research outputs is access to actionable information. Those who could make best use of scientific developments - researchers, policy makers, practitioners, patients, and the general public - are apt to encounter a number of hurdles. Articles are locked behind paywalls that are prohibitively expensive for individuals and increasingly unaffordable for institutions¹. Free copies of these papers may be available, but with critical caveats - after a prolonged embargo, for example, or from a site of questionable provenance. Even when a peer-reviewed article's version of record is available, its ultimate utility is tempered by the dearth of associated research materials such as data and code. Without these complementary elements, it is difficult for the conclusions drawn in a research article to be discussed, replicated, reproduced, modified, and extended. This, in turn, has negative consequences for research rigor, integrity, and transparency. A system that enables better access to the entirety of the scientific process (including articles, data, and code) will, in turn, enable better science - better tested, debated, and understood.

¹ <https://www.libraryjournal.com/?detailStory=Deal-or-No-Deal-Periodicals-Price-Survey-2019>

Over the past two decades, innovations have steadily emerged in service of this better, more efficient vision. From research design (preregistration) through execution (protocols) and rapid distribution (preprints), models are tipping toward wider and more rapid access to more aspects of the research process. This is critical to evolving the scientific communication system toward actionable deliverables -- information that is not just accessible but can be applied and built upon. At scale, such a system will stimulate dialog, broaden participation in the research process, and increase public confidence in the scientific endeavor.

The biggest barrier to a full transition to a more open model has been a coordinated commitment from research stakeholders, but this is changing. One illustrative example is the National Academies of Sciences, Engineering and Medicine's (NASEM) Roundtable on Aligning Incentives with Open Science². The Roundtable, co-coordinated by the Open Research Funders Group, convenes a high-level group of leaders from universities, philanthropies, and federal agencies. Nearing the midway point of this three year project, the Roundtable has developed an initial draft of a comprehensive toolkit that an array of actors -- university leadership, department chairs, rank-and-file researchers, government agencies, philanthropies, professional societies, and others -- can use to discuss, develop, and deploy open science plans that are both consistent with common norms and appropriate for their specific communities. This guidance centers on the points of leverage that these stakeholders manage, and how they can be activated to create better alignment across research values, practices, and incentives. The NASEM Roundtable has engaged with the White House Office of Science and Technology Policy's National Science and Technology Council Rigor and Integrity in Research Subcommittee to identify further actions that those funding, conducting, and communicating research can take to enhance research rigor, integrity, openness, and transparency. These discussions have further reinforced the shared belief that "Federal agencies, academic institutions, philanthropic organizations, and publishers could enhance research rigor, integrity, openness, and transparency by actively [coordinating] policies and procedures."³

One very recent example clearly illustrates how an open science ecosystem aligns with the goals and interests of key research stakeholders. The COVID-19 coronavirus outbreak is a serious public health concern, and the need for access to scientific articles and data to help identify promising vaccines and therapeutics is essential. In near real-time, the scientific community has mobilized toward that goal. The virus was rapidly sequenced and openly posted to Genbank⁴, the NIH genetic sequence database. Scores of researchers raced to learn more about COVID-19 and shared their early findings as openly accessible preprints⁵. These findings were discussed, debated, and refined in real-time discussions that were

² <https://sites.nationalacademies.org/pga/brdi/open-science-roundtable/index.htm>

³ <http://www.orfg.org/news/2020/3/9/ostp-org>

⁴ <https://www.ncbi.nlm.nih.gov/genbank/sars-cov-2-seqs/>

⁵ https://www.biorxiv.org/search/covid%20jcode%3Amedrxiv%7C%7Cbiorxiv%20numresults%3A75%20sort%3Apublication-date%20direction%3Adescending%20format_result%3Astandard

tracked publicly. Papers that could not withstand replication and reproducibility were quickly and publicly debunked⁶. Society and commercial publishers dropped their paywalls to make subscription-controlled coronavirus articles available to all⁷. Two clear conclusions can be drawn from this rapid alignment of behaviors. First, science has practical ramifications in the lives of not just researchers in labs, but also policy makers, doctors, patients, families, and the general public. Second, the form of research dissemination and global collaboration that best meets the needs of these constituencies is open science. If rapidly and openly sharing research data and papers is critical to understanding and combating coronavirus, doesn't the same hold true for cancer? Heart disease? Opioid addiction? The scientific community - moving with great alacrity and clarity of purpose - has clearly signaled that open science is the most efficient way to tackle issues that have a significant and direct effect on the lives of American citizens - the very issues to which the Federal government commits substantial financial resources. The unambiguous conclusion is that the open sharing of research data and articles is both a more efficient way to do science and a more efficient return on tax-payer dollars.

What more can Federal agencies do to make tax-payer funded research results, including peer-reviewed author manuscripts, data, and code funded by the Federal Government, freely and publicly accessible in a way that minimizes delay, maximizes access, and enhances usability? How can the Federal Government engage with other sectors to achieve these goals?

The Federal Government's ongoing efforts to maximize access to funded research have been an underreported success. For example, nearly 90% of NIH-funded papers are available freely in accordance with current public access requirements⁸. PubMed Central currently hosts approximately six million free-to-read articles⁹. Agencies such as NASA¹⁰ and the USGS¹¹ support data repositories that are critical to the work of thousands of researchers in related disciplines. It is critical to acknowledge that an extension of the current OSTP policy is starting from this position of strength.

There are two steps the Federal Government could take to make tax-payer funded research more accessible and reusable. First, Federally funded research should be made available more rapidly. The current policy effectively places a 12 month hold on the widest dissemination of tax-payer funded research. This is inconsistent with a rigorous, transparent research system. It limits the extent to which results can be reproduced and replicated, and allows for the possibility that incorrect findings can take root. Society is better off if scientific errors can be identified more quickly. Similarly, society also benefits if promising research

⁶ <https://www.tandfonline.com/doi/full/10.1080/22221751.2020.1727299>

⁷ <https://wellcome.ac.uk/press-release/sharing-research-data-and-findings-relevant-novel-coronavirus-covid-19-outbreak>

⁸ <https://www.nature.com/articles/d41586-018-07101-w>

⁹ <https://www.ncbi.nlm.nih.gov/pmc/>

¹⁰ <https://nasa.github.io/data-nasa-gov-frontpage/>

¹¹ <https://www.usgs.gov/products/data-and-tools/data-management/repositories#example>

findings can be validated and built upon expeditiously. The notion that tested, transparent science can be extended ties to the second step the Federal Government should consider. It is essential that the Government continues to invest in infrastructure to serve a range of research outputs - papers, data, code, and more. Technology such as machine learning and artificial intelligence have the potential to identify encouraging patterns and research avenues across a range of disciplinary and interdisciplinary problem spaces. The Federal Government can serve a critical catalytic role in supporting tools, services, and repositories to not only store these research outputs, but to make them actionable.

The benefits of rapid, open dissemination of Federally funded science, supported and enhanced by Federally supported infrastructure, can be seen in the Human Genome Project. Between 1988 and 2012, the Human Genome Project generated \$965 billion in economic output. In that same period, it created more than \$293 billion in personal income through wages and benefits, and produced nearly four million jobs¹². This approach represents not only good science, but good economics.

The Federal Government has been inclusive and methodical in seeking input from other sectors during this policy formulation process. It should continue to emphasize stakeholder harmonization as it moves to the implementation phase. The February 28 joint meeting of the White House Office of Science and Technology Policy's National Science and Technology Council Rigor and Integrity in Research Subcommittee and the National Academies of Sciences, Engineering and Medicine's Roundtable on Aligning Incentives with Open Science provides a useful model. The event stimulated discussion across Federal agencies, philanthropies (e.g., the Robert Wood Johnson Foundation, the Wellcome Trust), higher education leaders (e.g., Johns Hopkins, UCSF, the Association of Public and Land-grant Universities), and professional societies (e.g., the American Geophysical Union). The meeting was productive in identifying shared interests, including research rigor, integrity, openness, and transparency. It also produced a consensus that a coordinated approach by these parties, including common language, training, support, and resources, will accelerate the understanding and adoption of reinforcing practices across research communities.

How would American science leadership and American competitiveness benefit from immediate access to these resources? What are potential challenges and effective approaches for overcoming them? Analyses that weigh the trade-offs of different approaches and models, especially those that provide data, will be particularly helpful.

The immediate accessibility of research offers an array of benefits that promote American science leadership and competitiveness:

¹² <https://sparcopen.org/impact-story/human-genome-project/>

1. ***Supporting the growth of the knowledge economy.*** By facilitating freer flows of information among scientists, research institutions, and industry, a more open Federal policy will accelerate the discovery process and commercialization of scientific research.
2. ***Strengthening scientific literacy and education.*** By making scientific research freely available to the public, a more open Federal policy will enable non-scientists to become more familiar with scientific methods and encourages greater layperson interest in applying a rigorous, inquisitive approach to their engagement with the country and the pressing issues of the day.
3. ***Improving public policy and democracy.*** By encouraging greater transparency in research and availability of research products, a more open Federal policy will allow policymakers and the public to be more informed about research that can be used to shape policy and promote civic action.
4. ***Generating greater efficiency and speed.*** By encouraging wider sharing of research data, a more open Federal policy will enable real-time, data-driven decision making. This will decrease redundant research efforts, encourage interdisciplinary discussion, and accelerate sustainable innovation.

The Open Research Funders Group appreciates the opportunity to comment on this project, and we are eager to collaborate with the Federal government to realize a research environment that maximizes rigor, integrity, transparency, and return on taxpayer investment.

April 27, 2020

BY ELECTRONIC SUBMISSION

Dr. Kelvin K. Droegemeier
Director, Office of Science and Technology Policy
Eisenhower Executive Office Building
1650 Pennsylvania Avenue, NW
Washington, DC 20504

Response to OSTP Request for Information – FR Doc. 2020-06622 – “Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research”

Dear Dr. Droegemeier,

The American Association of Pediatric Ophthalmology and Strabismus (AAPOS) is grateful for the opportunity to respond to this request for information. In particular, we write to caution OSTP against adopting a policy mandating the free distribution of peer-reviewed manuscripts earlier than one year after publication.

AAPOS was founded with the goal of providing its members, comprised of pediatric ophthalmologists and strabismus specialists, with advice, support, educational material, interaction with local and government officials, and guidance on international efforts, local and regional provision of care, and science related to the members’ endeavors. It’s Journal, JAAPOS, its entering its 25th year of management by Elsevier but has been in publication for many years preceding this collaboration. The goal of the publication, which is read by several thousand specialists, is to offer education and research findings to its members.

Ultimately, we strive to support the progress of science by producing and broadly disseminating the highest quality peer-reviewed journals possible. Publishers and societies have worked to strengthen scholarly communication and promote open science. For example, AAPOS is involved with international efforts to improve child eye care in various regions of the world. However, it is critical that these efforts take place within a framework that respects intellectual property rights and our ability to invest in high-quality publications, and that does not hinder researchers from communicating their discoveries.

Our organization is involved with issues related to the COVID 19 pandemic, since most of us examine children and infants in hospitals. We are soon to publish a symposium on health care of premature infants infected by COVID, and safe methods to care for children with eye diseases.

As you are aware, federal agencies currently require that peer-reviewed manuscripts be made freely available online—within one year of publication—if they discuss research funded at least

in part by a government grant.¹ This policy represents a significant compromise that balances our shared goals of providing broad access with the need for our organization to recoup the substantial investments we make in these peer-reviewed articles. This one-year compromise contrasts with the length of a full copyright term of life-of-the-author plus 70 years. Importantly, this compromise reflects Congress' guidance (in the authorizing legislation for the current policy) that the Administration must "take into consideration the role that scientific publishers play in the peer review process in ensuring the integrity of the record of scientific research, including the investments and added value that they make."²

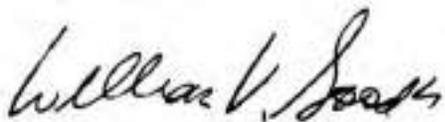
Reducing or eliminating the current one-year embargo would significantly jeopardize our organization's ability to invest in producing the high-quality peer-reviewed journals that our readers in the ophthalmology community rely on. In so doing, such a policy would contravene Congress' clear guidance to take our role and investments into consideration. Furthermore, such a policy would directly result in a reduction in either the quantity or quality (or more likely, both) of peer-reviewed journal articles produced by hundreds of organizations like ours.

This would not only be harmful to the research enterprise, it would also be harmful to the medical professionals, and, ultimately, to patients who are beneficiaries of the scholarly journals we produce.

We urge you not to disrupt our ability to support the advancement of research and patient care and we look forward to working together to identify solutions that advance the goals of open science without undermining the communication of research findings and analyses through peer-reviewed journals.

Thank you again for the opportunity to submit these comments.

Sincerely,

A handwritten signature in black ink, appearing to read "William V. Good". The signature is written in a cursive style with some loops and flourishes.

William V. Good MD
Editor in Chief of the Journal of Pediatric Ophthalmology and Strabismus

¹These policies were developed pursuant to OSTP's requirement that agencies "shall use a twelve-month post-publication embargo period as a guideline for making research papers publicly available . . ." See OSTP Memorandum on "Increasing Access to the Results of Federally Funded Scientific Research" (Feb. 22, 2013).

² America COMPETES Reauthorization Act of 2010, Section 103(b)(9), available at: <https://www.congress.gov/111/plaws/publ358/PLAW-111publ358.pdf>.

What current limitations exist to the effective communication of research outputs (publications, data and code) and how might communications evolve to accelerate public access while advancing the quality of scientific research? What are the barriers to and opportunities for change?

Since Federal agencies fund so much research, they have the power to set standards and behavioral norms for scientists and other researchers that will lead to more open and transparent sharing of research outputs. Researchers often run into roadblocks when attempting to locate research outputs. When they cannot easily and affordably exchange knowledge about new developments in their fields, the quality and efficiency of the research enterprise suffers. Those working at large, well-funded universities are more likely to have access to subscription resources; while researchers in largely rural states, hospital systems, and many state-funded colleges and universities are less likely to have ready access to important research findings and resources. As the cost of subscribing to resources continues to outpace library budgets, scholars know that they are likely to lose access to an increasing number of journals and other resources in the future.

The many institutions with open-access policies governing research outputs produced at that institution have demonstrated that researchers can flourish when their outputs are made freely available for others.

What can Federal agencies do to make taxpayer funded research results, freely and publicly accessible?

I encourage the Federal Government to implement a strong national policy that provides immediate, barrier-free access to the full results of taxpayer-funded research with the following characteristics:

1. Immediate access to published articles without embargoes
2. Articles should be openly licensed and made available in open and machine-readable formats that fully enable productive reuse including text/data mining and computational analysis
3. Data (and code, software, etc.) needed to validate/replicate the conclusions of articles should be made immediately available
4. Other appropriate data should be FAIR (Findable, Accessible, Interoperable, Reusable)
5. Free public access to and long-term preservation of these research outputs should be provided via either a digital repository maintained by the funding agency or in an appropriate institutional or disciplinary repository.

A clear statement from Federal funding agencies requiring immediate public access to research outputs would strengthen existing institutional policies by eliminating the need for many embargo periods and developing a national standard for managing and sharing data. Many institutions already have workflows that streamline the process of complying with existing policies and are poised to implement a new Federal policy. Using existing repository infrastructure provided by universities, funders, and scholarly societies would be a cost-effective method to immediately provide access and preservation to these research outputs, with no additional cost to authors or funders.

How would American science leadership and American competitiveness benefit from immediate access to these resources?

Open access to outputs of publicly funded research is a widely accepted international policy strategy to increase the government's return on investment in research. The U.S. is being left behind; other countries including China, Canada, EU members, India, and Brazil are adopting open access policies to accelerate their scientific research, boost innovation and increase competitiveness. Furthermore, private funders such as the Gates Foundation and the Wellcome Trust also have policies mandating open access of their funded research

Open access to research boosts innovation, increases national competitiveness and provides a better return on taxpayer investments in research. The U.S. cannot play a leadership role in science if our scholars routinely cannot access critical research articles and data.

A government-wide open access policy will support informed, transparent, federal budget and policy decision-making. It will increase Federal agency accountability and provide agencies with an improved accounting on the outcomes of their research. An open access policy will improve the rigor and reliability of taxpayer-funded research by providing more transparency and the ability for easier verification of results. This will in turn improve the public trust in science and in research funded by the Federal Government in particular. Now, as the country works to address the COVID-19 pandemic, the transparency, rigor, and speed that open access policies facilitate are vitally important. Open research practices have benefited the responses to Ebola, H1N1, Zika, and other public health crises. A Federal policy with the characteristics supported in this response would position our country to best address similar challenges in the future.

Kevin S. Hawkins
Denton, Texas

Kevin L. Smith
4216 Wimbledon Drive
Lawrence, Kansas

May 2, 2020

Response to request for comments on public access to publicly funded research:

I want to thank the Office of Science and Technology Policy for its interest in the issues that surround public access to publicly funded research, and for making the effort to consult with stakeholders about these issues.

I write as a scholar and an academic librarian. I serve as Dean of Libraries at the University of Kansas, where I also teach copyright law in the School of Law. I must emphasize, however, that I am writing in an individual capacity and do not speak for my employing institution in these comments.

The issues addressed in these three questions are extremely important, and they were so even prior to the COVID-19 pandemic. But events over the past few months have forcefully reminded us that access to research and research data can quickly and unexpectedly become a matter of life and death. It is far more urgent now that we act quickly to remove barriers that hinder access to fundamental scientific research. While some of the commercial publishers that hold exclusive rights to much of this research did act to promote increased public access to those holdings, these actions were disorganized, inconsistent, and, frankly, too late. It is imperative that we do better, and OSTP's consultation on these questions is an important step forward.

Question 1

Access to the publications associated with publicly funded research is a significant problem, and it is getting worse. In the past four years, my institution has had to cancel several of its "big deal" packaged subscriptions with major publisher. The costs for those packages have simply been increasing at a much faster rate our library budget has. The result is that researchers and students simply have less access to the materials they need to continue to produce innovative research.

One of the alternatives that our researchers use to partially fill the access gap is to search public access databases like PubMed Central, and to look at pre-print servers. While this is better than nothing, better public access is needed if research in the United States is even to maintain its current levels, to say nothing of make significant advances. Researchers also resort to other ways to access research; sometimes they simply ask the authors for copies of papers, when they know about

something specific that they need. As they increasingly encounter paywalls, they also sometimes use grant funds to purchase articles at the per-article rates, which usually are \$30-\$35 per article. This is a very inefficient use of grant funds, and every dollar spent this way inhibits their ability to do actual research. Since the access that can be purchased this way is usually limited both in time and in the ability to use the article, an additional inefficiency is introduced. Another alternative is interlibrary loan, but this too is a self-defeating option. These transactions are also quite costly, especially in terms of the labor they involve. Increased ILL costs simply further deplete the funds that are available to purchase these costly packages of research articles.

It is worth noting that these alternatives, which are, as I have said, inefficient in a variety of ways, are also usually not available to undergraduate students. So the cost barriers that plague research publications have a disproportionate impact on young scholars. Thus, every day that we delay improvements to this access crisis further impairs our ability to make scientific advances out over many years.

Lack of access impedes scientific progress in other ways, as well. The hyper-competitive environment created by commercial publishers as they try to raise their impact factors by rejecting a large number of perfectly sound research reports actively discourages verification studies and efforts to replicate results. This lack of confirmatory evidence erodes trust in science in general. The same problem makes it nearly impossible to publish negative results, which can advance science by pointing out to researchers paths they need not follow. Thus, federal funds may be wasted, as researchers sometimes repeat mistakes simply because they do not know that specific experiments have already been tried.

In short, the current system that allows commercial firms, often outside of the United States, to hold exclusive control over research results is doing active harm to the state of scientific research in the U.S. The technology exists to overcome these barriers; all that is needed is firm leadership in the policy arena.

While costs constitute the greatest barrier to research access and scientific progress, there are other impediments in law and policy, especially to sharing of research data. The grants process does not adequately reward researchers for creating useful data sets and sharing them with the public, which speeds up research and prevents duplicative efforts. Also, a great deal of research data is owned by these same commercial companies and is often licensed in highly restrictive ways. Often the formats for these data do not facilitate activities like text and data mining, computational analysis, and efforts to replicate results. Finally, concerns over the reach of copyright laws often cause researchers to shy away from useful text and data mining activities.

Question 2

There are several ways that Federal agencies can take action to make taxpayer-funded research more accessible and usable. The overall goal should be to implement a strong national policy to ensure open access for taxpayers to the research results for which they have paid.

Most important is to require that all peer-reviewed research papers that arise from federally funded research are made freely and openly available immediately upon publication. Such a policy should ensure that articles are available in a format that supports computational analysis and licensed in a way that facilitates downstream research use.

This kind of policy would immediately address some of the barriers that researchers currently encounter. It would increase access for students, who will be the scientists of the future, and facilitate teaching and research. It would accelerate the pace of scientific progress and increase American competitiveness in science and industrial innovation.

Policies should also be adopted that would encourage grant recipients to share the data associated with their research in ways that make it easier to compute on that data, verify results, and reuse data for new discoveries. Data sharing should be a criterion by which researchers are evaluated as they apply for subsequent awards.

To further facilitate the efficient reuse of research data, agencies can work with Congress to craft an exception to the exclusive rights in copyright to guarantee that text and data mining, which poses no threat to the legitimate interests of copyright holders, is allowed under the law. An exception like this was adopted by the United Kingdom several years ago and has helped to accelerate research. For the sake of U.S. competitiveness, we need to adopt a similar policy into our law. It is worth noting that the U.K. included in their reform of copyright a provision to protect the right to perform text and data mining from being overridden by contracts. When libraries license large databases of scientific context these days, we frequently find that the licenses include language to restrict text and data mining. Often the vendor requires a right of approval, which creates a significant barrier to innovative research. Congress can act to prevent these unwarranted limitations on scientific progress.

There is a tremendous opportunity here for the Federal government to take significant steps that would reduce barriers to scientific research, empower

researchers to innovate and adopt more efficient process, and ensure that research data is findable, accessible, interoperable and reusable (FAIR).

Question 3

The truth is that scientific research in the United States is being left behind, as other countries recognize the competitive advantage they can gain by requiring immediate, open access to taxpayer funded research, and by sharing research data according to the FAIR formula. The European Commission already has a full open access policy for both articles and data, and the U.K., as I note above, has protected text and data mining by law. Many other countries, such as China, India and Brazil, have followed suit, as have major private research funding bodies. Economic models such as that created as part of the U.K. Houghton report, as well as studies of the direct economic impact of open access projects like the Human Genome project, demonstrate that open access and open data generate significant return on investment.

A strong national open access policy would have wide-ranging ripple effects in the U.S. economy, including important benefits for small businesses and start-up companies. Often the economic barriers to access to research is a major hurdle for such enterprises, and any increase in open access makes business development that much easier. Such a policy would also encourage the many services that can be built on public data. The example of National Weather Service data is instructive; because it is freely available, the U.S. has seen many services and products that use the data, serve public interests, and support business. Other countries that hold such weather data in a proprietary way have not witnessed these benefits. The time is ripe for the U.S. to take much greater advantage of such economic opportunities, especially as we recover from a pandemic, by making taxpayer funded research publicly accessible in ways that foster innovation and investment.

Thank you for the opportunity to comment on the tremendous opportunity that the U.S. has to foster scientific and economic progress by adopting a strong policy on public access to federally funded research publications and data.

Stephanie Adams
PRESIDENT
University of Texas, Dallas

Sheryl Sorby
PRESIDENT-ELECT
University of Cincinnati

Stephanie Farrell
IMMEDIATE PAST PRESIDENT
Rowan University

Gary Steffen
VICE PRESIDENT, MEMBER AFFAIRS
Purdue University Fort Wayne

Doug Tougaw
VICE PRESIDENT, FINANCE
Valparaiso University

Agnieszka Miguel
VICE PRESIDENT, EXTERNAL RELATIONS
Seattle University

Pamela Norris
VICE PRESIDENT, INSTITUTIONAL
COUNCILS, CHAIR, ENGINEERING
RESEARCH COUNCIL
University of Virginia

PK Imbrie
1ST VICE PRESIDENT,
VICE PRESIDENT, PIC'S,
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Gilda A. Barabino
CHAIR, ENGINEERING DEANS COUNCIL
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Dan Sayre
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Scott Dunning
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Christi Paton Luks
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COUNCIL I
Missouri University

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Beth M. Holloway
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Maureen A Barcic
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Pali Singh
CHAIR, COUNCIL OF SECTIONS, ZONE I
Villanova University

Andrew Kline
CHAIR, COUNCIL OF SECTIONS, ZONE II
Western Michigan University

Ken Van Treuren
CHAIR, COUNCIL OF SECTIONS, ZONE III
Baylor University

Lilly G. Gossage
CHAIR, COUNCIL OF SECTIONS, ZONE IV
*California State Polytechnic University,
Pomona*

Norman L. Fortenberry
Executive Director
ASEE

May 1, 2020

BY ELECTRONIC SUBMISSION - publicaccess@ostp.eop.gov

Dr. Kelvin K. Droegemeier
Director, Office of Science and Technology Policy
Eisenhower Executive Office Building
1650 Pennsylvania Avenue, NW
Washington, DC 20504

**Response to OSTP Request for Information – FR Doc. 2020-06622 –
“Public Access to Peer-Reviewed Scholarly Publications, Data and Code
Resulting From Federally Funded Research”**

Dear Dr. Droegemeier:

The American Society for Engineering Education (ASEE) appreciates the opportunity to respond to this request for information. We write to caution OSTP against adopting a policy mandating the free distribution of peer-reviewed manuscripts earlier than one year after publication.

Founded in 1893, ASEE is a global society of individual, institutional, and corporate members. ASEE's vision is excellent and broadly accessible education empowering students and engineering professionals to create a better world. We work toward achieving that vision by advancing innovation, excellence, and access at all levels of education for the engineering profession. We engage with engineering faculty, business leaders, college and high school students, parents, and teachers to enhance the engineering workforce of the nation. We are the only professional society addressing opportunities and challenges spanning all engineering disciplines, working across the breadth of academic education including teaching, research, and public service.

ASEE publishes two journals, the quarterly *Journal of Engineering Education*, and the intermittent online journal *Advances in Engineering Education*. The *Journal of Engineering Education* seeks to help define and shape a body of knowledge derived from scholarly research that leads to timely and significant improvements in engineering education worldwide. *Advances in Engineering Education* serves to disseminate significant, proven innovations in engineering education practice, including those that are enhanced through the creative use of multimedia. The two journals work in synchronicity advancing the research-to-practice-to-research cycle in order to improve the content and quality of the

Dr. Kelvin Droegemeier
May 2, 2020

education received by the Nation's almost 200,000 annual engineering degree recipients (at all degree levels¹).

Ultimately, we strive to support the progress of engineering by producing and broadly disseminating the highest quality peer-reviewed journals possible. Publishers and societies have worked to strengthen scholarly communication and promote open scholarship. ASEE recently revised its plagiarism and ethics policies to clarify that self-plagiarism and harassment of any kind constitute professional misconduct. However, it is critical that these efforts take place within a framework that respects intellectual property rights and our ability to invest in high-quality publications, and that does not hinder researchers from communicating their discoveries.

ASEE is deeply engaged in efforts to respond to the novel coronavirus pandemic. We're not only facilitating innovative education strategies to maintain high quality education while honoring social distancing, but we're gathering and sharing innovations created by engineering students and faculty related to low-cost production of respirators, ventilators, face shields, gowns and other personal protective equipment. OSPT's significant new regulatory proposal is a distraction from our ongoing efforts to respond to the current crisis.

As you are aware, federal agencies currently require that peer-reviewed manuscripts be made freely available online—within one year of publication—if they discuss research funded at least in part by a government grant.² This policy represents a significant compromise that balances our shared goals of providing broad access with the need for our organization to recoup the substantial investments we make in the peer-review, editing, publication, distribution, and long-term stewardship of these articles. This one-year compromise contrasts with the length of a full copyright term of life-of-the-author plus 70 years. Importantly, this compromise reflects Congress' guidance (in the authorizing legislation for the current policy) that the Administration must “take into consideration the role that engineering publishers play in the peer review process in ensuring the integrity of the record of engineering research, including the investments and added value that they make.”³

¹ “Higher Education in Science and Engineering,” *Science and Engineering Indicators (2019)*, National Science Board, Alexandria, VA. Available at <https://nces.nsf.gov/pubs/nsb20197/trends-in-undergraduate-and-graduate-s-e-degree-awards#undergraduate-degree-awards>

² These policies were developed pursuant to OSTP's requirement that agencies “shall use a twelve-month post-publication embargo period as a guideline for making research papers publicly available . . .” See OSTP Memorandum on “Increasing Access to the Results of Federally Funded Scientific Research” (Feb. 22, 2013).

³ America COMPETES Reauthorization Act of 2010, Section 103(b)(9), *available at*: <https://www.congress.gov/111/plaws/publ358/PLAW-111publ358.pdf>.

Dr. Kelvin Droegemeier
May 2, 2020

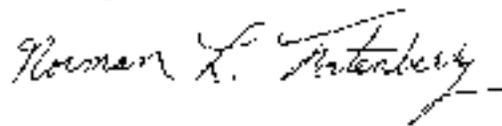
Reducing or eliminating the current one-year embargo would significantly jeopardize our organization's ability to invest in producing the high-quality peer-reviewed journals that our readers in the broad engineering community rely on. In so doing, such a policy would contravene Congress' clear guidance to take our role and investments into consideration. Furthermore, such a policy would directly result in a reduction in either the quantity or quality (or more likely, both) of peer-reviewed journal articles produced by hundreds of organizations like ours.

This would not only be harmful to the research enterprise, it would also be harmful to the practice of engineering – a crucial discipline in advancing the Nation's wealth and prosperity.

We urge you not to disrupt our ability to support the advancement of engineering education research and development, and we look forward to working together to identify solutions that advance the goals of open scholarly discourse without undermining the communication of research findings and analyses through peer-reviewed journals.

Thank you again for the opportunity to submit these comments.

Sincerely,

A handwritten signature in cursive script that reads "Norman L. Fortenberry". The signature is written in black ink and includes a horizontal line at the end.

Norman L. Fortenberry, Sc.D.
Executive Director

Date: April 30, 2020
To: Lisa Nichols, Assistant Director for Academic Engagement
Office of Science and Technology Policy
publicaccess@ostp.eop.gov
From: Roger Wakimoto, Vice Chancellor for Research and Creative Activities
Virginia Steel, Norman and Armena Powell University Librarian
University of California, Los Angeles
About: RFI Response: Public Access

Dear Dr. Nichols:

We are writing on behalf of the University of California, Los Angeles, Office of the Vice Chancellor for Research and Creative Activity and the UCLA Library with regard to the Request for Information: Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting from Federally Funded Research, issued on February 19, 2020. We are grateful for the opportunity to contribute to the Office of Science and Technology Policy's deliberations. The need for the results of publicly funded research to be immediately available to, and fully usable by, the public is a matter of vital public interest: the urgent public health crisis that we are now experiencing makes this need painfully clear.

Founded in 1919, UCLA is ranked first among public universities and is the most applied-to university in the nation. In 2019, it had a total student enrollment of 45,921. UCLA encompasses the College of Letters and Sciences; a number of graduate schools and programs, including a highly ranked school of management; and schools of engineering, law, art and architecture, and medicine. Forty UCLA doctoral programs rank among top 10 in their fields nationwide. The Ronald Reagan UCLA Medical Center is one of the top-ranked hospitals in the country. Since the year 2000, startup valuations built on UCLA's technology totaled \$33 billion.

The UCLA Office of the Vice Chancellor for Research and Creative Activities and the UCLA Library unequivocally support a zero-embargo policy for peer-reviewed author accepted manuscripts resulting from federally funded scientific research. We consider this to be a reasonable and considered step to minimize delay and maximize access to published research outputs that will enable new discoveries and progress on solving problems. However, we believe that the path to zero-embargo should occur over a period of time to provide not-for-profit scholarly societies time to adapt. We also support a policy that makes the data and code associated with federally funded research publications available to the public according to the FAIR Principles,¹ to support accessibility, interoperability, discovery, reuse, and continuing innovation. Our response to the specific questions raised in the Request for Information follows.

¹ <https://www.go-fair.org/fair-principles/>

What current limitations exist to the effective communication of research outputs (publications, data, and code) and how might communications evolve to accelerate public access while advancing the quality of scientific research? What are the barriers to and opportunities for change?

The U.S. government spends billions of taxpayer dollars on research: the public has paid for this research and has a right to access and use the results of this work. All too often, however, the only way research results are disseminated is through publication in paywalled journals that require expensive, restrictive subscriptions or pay-per-view access. This creates uneven playing fields for individuals and institutions, limiting inquiry, discovery, competition, and innovation. Only researchers at the wealthiest institutions are able to read the articles that contain research results, so this system slows scientific discoveries and perpetuates inequities among researchers.

For example, even at a top-ranked public university such as UCLA, the library struggles to keep pace with the escalating costs of paywalled journal subscription—every time a subscription increases in price, the library is forced to essentially create a system of winners and losers: some researchers may have to do without the resources they need. Oftentimes, when the library cannot afford a subscription, it relies on pay-per-view access to provide copies of articles for individual researchers, which is expensive and contributes nothing to the body of resources that the library can make available to other researchers. Barriers to access imposed by the unaffordability of published research reduce the immediate value of that research. This is an especially acute problem when negotiating with the for-profit publishers.

All too often, even the basic data needed to validate or reproduce the research results appearing in peer-reviewed journals is unavailable, eroding trust in scientific research and limiting the value of our investment in science. At a minimum, the data, code, software, and other material needed for validation and replication of the research presented in articles should be made immediately available, and other data associated with taxpayer-funded research should, as appropriate, be FAIR—Findable, Accessible, Interoperable, Reusable.

Over the past several months, a number of the leading science, technology, and medical publishers have made portions of their paywalled content available free to libraries and the research community, in response to the Covid-19 crisis. While this action recognizes the essential role libraries have in connecting researchers with research, it is also an explicit, if indirect, acknowledgement of the impediments to research that are routinely imposed by paywalls. Without a zero-embargo policy, once the Covid-19 crisis is over, access to the research that was done to treat and prevent it will once again become restricted.

As the COVID-19 pandemic advances, health care workers are in urgent need of critical personal protective equipment. At UCLA, the Schools of Engineering and Medicine and the Library have responded by coordinating efforts to identify and produce prototypes for 3D-printed medical masks in our labs, as part of a national network of universities and libraries. Through basic online research, an Open Access prototype was identified, a discovery which vaulted the design-

phase and expedited the testing lifecycle. Once a viable prototype was approved, the design for these potentially life-saving medical masks was deposited into an open-access NIH repository so that they could be printed and distributed to hospitals and other medical facilities. This community effort speaks to the enormous value of barrier-free access to research.

What more can Federal agencies do to make tax-payer funded research results, including peer-reviewed author manuscripts, data, and code funded by the Federal Government, freely and publicly accessible in a way that minimizes delay, maximizes access, and enhances usability? How can the Federal Government engage with other sectors to achieve these goals?

The federal government should implement a strong national policy to ensure that taxpayers get immediate, barrier-free access to the full results of the scientific research that our tax dollars have funded. The policy should include these elements:

- The 12-month embargo period on articles should be eliminated. Final manuscripts of peer-reviewed articles or published articles should be made available immediately.
- Articles should be openly licensed to ensure full utility, by CC-BY or similar license, or through a public domain designation.
- Final peer-reviewed manuscripts or published articles should be made available in open and machine-readable formats that fully enable productive reuse, including text/data mining and computational analysis.
- Free public access to, and long-term preservation of, final peer-reviewed articles or published versions and supporting data should be provided to the public via a digital repository maintained by the appropriate Federal agency or in any repository meeting the criteria for persistent, barrier-free, functional access.
- The data, code, software, and other material needed for validation and replication of the research presented in articles should be made immediately available.
- Other data associated with taxpayer-funded research should, as appropriate, be FAIR—Findable, Accessible, Interoperable, Reusable. Moreover, the types of data to be made available (raw, processed, products) should be clearly stated. The length of time these data are to be made available needs to be determined. All data in perpetuity is not a realistic or attainable goal.
- Agencies may need to rethink the current model of funding publications via awards to principle investigators. For example, agencies should be encouraged to talk to libraries where repositories are often supported.

Library subscription dollars currently play a significant role in supporting the operations of scholarly societies and other participants in scholarly publishing: at UCLA, the Library is eager to work with federal agencies and other stakeholders to explore new opportunities to leverage open taxpayer-funded research outputs. As a research university, we are committed to engaging with scholarly societies, and other partners in the academic enterprise, to develop risk-mitigation strategies to support equitable and open sharing of research outputs of all kinds across the full

research lifecycle and to support and sustain the scholarly societies. Libraries have already taken on extensive new roles in data management and curation and are committed to working in partnership with research administrators at our universities to support efficient, cost-effective support services to improve data management and sharing, and to reduce the compliance burden on investigators.

How would American science leadership and American competitiveness benefit from immediate access to these resources? What are potential challenges and effective approaches for overcoming them? Analyses that weigh the trade-offs of different approaches and models, especially those that provide data, will be particularly helpful.

American colleges and universities cannot play a leadership role in science if our researchers routinely encounter paywalls that obstruct access to critical research articles and data. Even the most well-funded academic libraries cannot afford to subscribe to all of the journals their researchers need, and libraries struggling to support researchers working in interdisciplinary or emerging fields face the greatest challenges. Scientists cannot conduct leading-edge research with such obstacles in their way, nor can they train future leading-edge science professionals.

By implementing a repository-based, zero-embargo Open Access policy, the U.S. can gain the benefits of broadening access to its taxpayer-funded research outputs in a cost-effective manner. For example, the National Institutes of Health (NIH) reports that it costs ~\$4.6 million per year to run PubMed Central (PMC) and provide public access to 100,000+ articles reporting on its funded research each year. This modest expense represents a tiny fraction—only 1/90th of 1%—of the NIH’s annual \$40+ billion operating budget, an extraordinary value for American taxpayers.² The NIH’s investment in PMC has also created an opportunity for other agencies to benefit: nine other U.S. Federal Agencies are currently utilizing PMC to provide public access to articles resulting from their funded research, extending the value of PMC and the research that it makes open and available.

By stark contrast, the costs charged to authors, institutions and foundations by journal publishers in order to make research open by paying Article Processing Charges (APCs) have been steadily and sharply rising. Recent research has revealed hyperinflation in the APC market: data shows APCs have nearly doubled over the past decade, from a mean price of \$1,107 for open publication of a single article in 2005 to over \$2,065 in 2018.³ Of course, APCs for some high-impact journals are significantly higher: the APC for a single article in the medical journal *The Lancet* is \$5000, and in the life-sciences journal *Cell*, the APC for a single article is \$5900.⁴

² <https://tinyurl.com/lipmantestimony2010>

³ Aasheim et al: <https://www.liberquarterly.eu/articles/10.18352/lq.10280>

⁴ As of March 24, 2020. “Elsevier>About>Policies>“Pricing” at <https://www.elsevier.com/about/policies/pricing>

A government-wide, zero-embargo Open Access policy will also support informed, transparent, federal budget and policy decision-making and will improve the rigor and reliability of taxpayer funded research by providing more transparency and the ability for easier verification of results. Federal agency accountability will be materially increased and taxpayers will see improved accounting on the outcomes of research supported by federal agencies. It will also help appropriators and authorizers to more accurately assess the value of existing expenditures, and to target funding toward the most promising research areas. This will, in turn, improve public trust in science—and, in particular, U.S. government-funded science.

Open Access policies are becoming the global norm because providing open access to outputs of publicly funded research is a valuable strategy for increasing governments' return on investment in research, and, in turn, it boosts innovation and enhances national competitiveness. For instance, the European Commission has a full Open Access policy for articles and data, and Canada, India, China, and Brazil, to name a few, and major foundations ranging from the Gates Foundation to the Wellcome Trust also have or are implementing Open Access policies.

The United States has at least one sterling example of the benefits of Open Access to American science and the American economy: the Human Genome project. Its open data generated an economic return of \$796 billion on a \$3.8 billion investment—a return on investment (ROI) of 141:1. Every \$1 of taxpayer money generated \$141 in economic activity, including job creation.ⁱ

Another example is NOAA's open access to weather data that has stimulated the economy in the U.S. The availability of weather information has led to the growth of the private sector (e.g., the Weather Company) that is estimated to be worth \$6B. As other countries adopt meaningful Open Access policies and accelerate their scientific research, boost innovation, and increase competitiveness, the United States is being left behind.

On behalf of UCLA, we would like to thank the Office of Science and Technology Policy for facilitating a robust discussion of this important issue. We encourage you to support a strong immediate Open Access policy for the results of publicly funded research.

Sincerely yours,

Roger Wakimoto
Vice Chancellor for Research and Creative Activity
University of California, Los Angeles

Virginia Steel
Norman and Armena Powell University Librarian
University of California, Los Angeles

ⁱ <https://www.genome.gov/27544383/calculating-the-economic-impact-of-the-human-genome-project>

RFI Response: Public Access

Organization filing this comment: Duke University
Point of contact: Jim Luther; james.luther@duke.edu; 919-475-7439

OSTP Request for Information: Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research

Reference: Federal Register Notice: Document Citation: 85 FR 9488 // Page: 9488-9489 (2 pages) // Document Number: 2020-03189

Submitted Electronically on May 4, 2020: To publicaccess@ostp.eop.gov (Lisa Nichols, Assistant Director for Academic Engagement, OSTP)

Duke University is a major research university and economic engine for our region, with [\\$500 million per year](#) from federal government agencies. With ~8000 faculty and staff engaged in research, and an additional [~7500 graduate and professional students](#) engaged in research, Duke produces over 10,000 research publications every year. One of Duke University's key strategic goals is using knowledge in the service of society. We encourage our researchers to make the results of their research (publications, data, and code) as broadly available as possible, and to translate their research into modes that can be effectively consumed by the public and quickly generate practical benefit and economic and social value. As an institution, we have put in place a number of services to support this, including an open access policy, multiple open repositories and staff to provide support in using them, and some funding to assist with open access article processing charges. We are pleased that the OSTP is seeking to expand public access and benefit for more federally funded research, and offer these comments in support of that effort.

1. What current limitations exist to the effective communication of research outputs (publications, data, and code) and how might communications evolve to accelerate public access while advancing the quality of scientific research? What are the barriers to and opportunities for change?

Market dominance and anachronistic publication models

The movement toward Open Access (OA) for scientific publications began over 20 years ago, but it is not yet a full reality. There are many reputable OA journals, preprint services like arXiv.org, and portals like PubMed Central. However, many of the journals considered "high impact" (valuable in the metrics for faculty promotion and tenure) belong to long-standing players in the scholarly publishing arena who have benefited from dominating the landscape long before the Internet era. These players resist models that might result in decreasing the revenue they are able to achieve through the market they consistently dominate. Their dominance, combined with the presumption that open scholarship options are lower in quality and value, makes it difficult for innovative entrants into the marketplace to compete effectively.

Limited resources and researcher awareness impede quality of and ethical access to published data

Many researchers do not have experience with how to prepare their data and code for publication as a stand-alone object and may not include crucial contextual documentation and code in a form that would allow for verification and reproducibility of results. In addition, researchers work with data that may be under access restrictions due to information sensitivity or intellectual property rights. Sharing data with

access restrictions can be complicated, and often requires significant human and technical capital on both the archiving and distribution ends. Most of the burden on providing access to data with access restrictions falls upon specialized archives, academic institutions and individual researchers.

Lack of robust funding mechanisms for enhancing public access

All scholarly products have their own mechanisms for being shared and distributed, and none of it is standardized or streamlined. Cost burden can vary as to where it falls. Publishing is big business, and we cannot expect everything to become open without balancing the needs of funders, researchers and publishers across the spectrum. To publish in OA journals, many researchers must pay their own Author Processing Charges (APCs) or hope that their employer (typically Universities) can cover that cost. New approaches for funding openness should be explored. For example, federal agencies could provide a limited, one-time financial disbursement to help scholarly societies and journals transition to open access, and then provide ongoing sponsorship to maintain their operations without relying on the transactional model of APCs or the limited access model of subscription paywalls. This would shift the burden from either a paying-to-read or a paying-to-publish model and support a more equitable model where the government would provide a small part of the operating expenses to support an open scholarly publishing system.

Voluntary, individual action has not scaled because incentives have not changed

Tenure and promotion guidelines for faculty engaged in research still place higher value on traditional publishing (journal articles and books). Therefore, researchers are still not necessarily convinced that their data and code can be just as valuable as the article written based on their analysis. Although institutions may have policies and resources to aid in supporting public access to publications, data, and code, the effectiveness of these initiatives is limited. Advocacy and action at the national level would provide strong impetus for disciplines, publishers, other funding agencies, and research institutions to build better support and incentives that maximize the reach and impact of the work of their communities.

2. What more can Federal agencies do to make tax-payer funded research results, including peer-reviewed author manuscripts, data, and code funded by the Federal Government, freely and publicly accessible in a way that minimizes delay, maximizes access, and enhances usability? How can the Federal Government engage with other sectors to achieve these goals?

Develop, strengthen, and enforce policies

- *Enact policies that require openness.* Funder policies can require published research to be made available under open licenses (i.e., Creative Commons, etc.), as immediately as is feasible (limit the use of embargos) and support the development of open APIs (application programming interfaces) to enable greater interoperability between different publication venues.
- *Data management plans and increased accountability measures.* Federal funding agencies can provide improved guidance and policies to encourage researchers to effectively manage their data before, during, and after research projects. Researchers should be required to write a data management plan that is actionable – meaning that they refer back to it, modify it, and report regularly on what they have accomplished to funders or institutional/departmental units. Additionally, federal agencies could also include data/code sharing as another factor in the grant review process by evaluating 1) the principal investigator’s record of data sharing and 2) the data management and data sharing plan described within the grant.
- *Enforce existing policies.* There is currently a policy that all federally funded clinical trials must share the results in clinicaltrials.gov. However, a recent analysis in *Science* found that about 55% of the 4700 clinical trials assessed, either reported late or not at all in clinicaltrials.gov: <https://www.sciencemag.org/news/2020/01/fda-and-nih-let-clinical-trial-sponsors-keep-results->

[secret-and-break-law](#). Policies are important for improving public access to research materials, but processes must be developed to ensure the policies can be enforced. This can be done through auditing over time (pre, during and post project) to ensure adherence and accountability. In the beginning, it makes sense that strong penalties and enforcement would be unfair before analyzing the policy's effects and function. However, agencies need to remain committed to improving, updating and enforcing these policies to best meet their goals.

- *Develop efficient enforcement strategies.* Administrative burden/paperwork should be balanced with the objectives of motivating people to adhere to policy standards with good faith efforts. Potential mechanisms to effectively enforce federal requirements include partnering with institutions, journals, and repositories to amplify the messaging from federal sponsors. Another potential mechanism is the development of additional internal checks and balances (at the level of institutions and publishers) that can then be periodically audited or reported back to a central federal agency at well-spaced intervals.
- *Harmonize public access policies, documentation, and compliance approaches.* As the landscape for data management evolves, funding agencies, institutions and publishing entities are actively modifying and shifting their policies. It would be optimal for federal funding agencies, researchers, institutions, and journals to work with one universal set of standards and guidelines, rather than having to develop different processes to meet numerous differing standards. For example, compare the [NIH Public Access Policy](#) with the [NSF Public Access Policy](#). Without harmonization, the uncertainty and inconsistency causes challenges for planning and allocation of resources on the part of institutions. Therefore, we recommend that any proposed policy on data management should recognize the various policies that already exist and work with the established frameworks rather than create a contradictory or conflicting policy. The joint NSF/NIH workshops held in 2018 and 2020 are critical examples of opportunities to further this alignment.

Set common open standards

Collaborate with stakeholders to develop open standards. Funding agencies should galvanize disciplinary specific work groups (and some cross-disciplinary work groups) with representatives from the publishing sector, repository specialists, and the research community to develop standards within and across disciplines. These standards will help ensure that publicly accessible research materials follow best practices for quality assurance, formats, metadata, identifiers, and de-identification. Common formats and languages for data, code, documentation and files will improve downstream findability and re-use. By encouraging or mandating open standards, the federal government could stimulate the growth of an emerging industry of overlay services, who can innovate and provide value by creating new tools that look for patterns and draw insights from large sets of research publications and data.

Fund exploratory research

Publishing supports the scientific process, and not the other way around. As long as federal funders provide robust support for publication models that prioritize quality, dissemination, and access, there is little risk to the overall system. We encourage OSTP to think strategically about how the future of scientific publishing should develop. OSTP and federal funders should fund exploratory research into new models that simultaneously encourage competition and innovation and support the public good rather than protecting the prevailing dominant organizations and models.

Costing aspects of data management plans will have significant budgetary implications. Therefore, the agencies should allow these costs to be directly charged to the award if data management plans are to be included in award proposals. In January of 2017, Duke created and filled four full-time dedicated Research Data Specialists and Repository Ingest Specialists to support data management

planning, compliance, public access and retention requirements. Furthermore, the institution made a commitment of funding to support baseline, minimum levels of computing and digital storage for research projects. In recognition of the significant personnel and financial resources required to share and maintain data, any proposed policy should designate related costs as allowable to the award. Additional costs have been incurred to various degrees and most are not materially recoverable due to the reimbursement mechanisms currently in place.

3. How would American science leadership and American competitiveness benefit from immediate access to these resources? What are potential challenges and effective approaches for overcoming them? Analyses that weigh the trade-offs of different approaches and models, especially those that provide data, will be particularly helpful.

Access to research materials provides opportunities for others within research communities and beyond to engage in the scientific endeavor. By increasing access, federal agencies increase the return on investment from funded research, facilitate collaboration and interdisciplinary research, and support innovation. The United States is a world leader in research and in translating that research into public good and economic activity. These national benefits are at risk of eroding as other countries and their research funding bodies increasingly move toward open access models for all of their funded research. Continuing to allow research to be trapped behind paywalls and walled gardens inhibits innovation and provides space for researchers and service providers in other countries to leapfrog ahead of the US in this sector.

Many of the established publishers and data repository providers are based overseas, meaning that a significant proportion of US research dollars exit our economy as researchers give up rights to their research to foreign corporations, and US institutions are forced to buy back limited access to the same research for which they and the US government have already paid. Requiring researchers to retain rights to their work, and to make access to it open, and providing support for community-led open science services, will ensure that American researchers and organizations can build on and innovate around US-funded research without requiring payment to the foreign corporations that otherwise control access and extract monopoly rents.

There are also significant local economic benefits to this approach. Duke University is one of the largest employers in the state of North Carolina, and along with the University of North Carolina, North Carolina State University, and other universities in NC, are the economic engine of a state that is changing from a primarily agriculture and financial services based economy toward one based on technology, biotech, pharmaceuticals, and other emerging 21st century industries. The success and growth of this economic activity relies on research being maximally available to all who might build on it to innovate and further develop public benefits and economic activity. The OSTP and federal government can assist economic development in NC and nationally by setting the conditions that encourage greater competition and innovation and public benefit.

Establish infrastructure and guidelines that facilitate data and code sharing

- *Systems and infrastructure.* While some disciplines and institutions have established repositories that follow principles for data sharing (such as FAIR), resources and available infrastructure vary greatly. Certain data types, such as large image datasets, cannot be supported by many repositories. Federal agencies could help to identify ongoing gaps in infrastructure and services for certain communities and fund repository development to improve technical capacity for specific data types. Guidelines are also needed to define what kinds of data sharing and preservation approaches are appropriate for different data types.
- *Quality and reuse.* Effective reuse of data and code, which is the ultimate goal of making these materials available, requires human capital to curate data and code for publication. Institutions,

repositories, and agencies can help address this challenge by funding positions that support data curation and expanding education to help researchers understand common data curation practices they can implement throughout a research project.

- *Discovery and access.* When research outputs are made publicly accessible, they may be distributed across various repositories or platforms, which makes discovery of relevant materials challenging. To address this challenge, technical solutions need to be in place to support the standardization of metadata, harvesting metadata, and supporting integrated search and discovery. Including links to repository datasets directly within publications is another important mechanism for improving data discovery and access for reuse and reproducibility. Funding agencies should continue to work with journals to encourage that articles include direct links or unique identifiers to all datasets/code in repositories.
- *Metrics.* Standardized reporting on analytics that help to evaluate the reach and impact of public access policies must also be developed in order to effectively allocate support. Federal agencies could consider fostering a space where data metrics are tracked. This space could log metrics on data re-use, replication, and reproduction in a manner analogous to how journals track article citations.

4. Any additional information that might be considered for Federal policies related to public access to peer reviewed author manuscripts, data, and code resulting from federally supported research.

Expand the publication record to include retractions and null results

Much of the motivation for moving to an OA publication environment is to facilitate greater rigor and reproducibility in the research community. In order to meet that goal, researchers need better access to information on which published works have been wholly or partially retracted or otherwise found to be erroneous. This could be accomplished through collaboration with an organization like [Retraction Watch](#), which maintains a database of retracted research reports. Information on retractions and data errors must also be extended to the DOI/accession number for associated repository data, in order to prevent researchers from using a flawed dataset.

Beyond improving the visibility of retractions, researchers would benefit greatly from an increased publication record of null results and replication studies. In the current for-profit publishing marketplace, journals have little incentive to publish null results or studies replicating a previously published result. Publishing null results would benefit researchers by providing them a broader view of the studies being conducted in their field, allowing them to learn from the experimental difficulties experienced by their colleagues, and enhancing the robustness and reliability of results. Incentives could be developed for journals to provide these types of alternative publications, including [Registered Reports](#), which support publishing null results.



1 May 2020

BY ELECTRONIC SUBMISSION

Dr. Kelvin K. Droegemeier
Director, Office of Science and Technology Policy
Eisenhower Executive Office Building
1650 Pennsylvania Avenue, NW
Washington, DC 20504

Response to OSTP Request for Information – FR Doc. 2020-06622 – “Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research”

Dear Dr. Droegemeier,

The Hydrogen Energy Publications, LLC (HEP, LLC) is grateful for the opportunity to respond to this request for information. In particular, we write to caution OSTP against adopting a policy mandating the free distribution of peer-reviewed manuscripts earlier than one year after publication.

The HEP, LLC manages the publication of the International Journal of Hydrogen Energy (IJHE) which is the official journal of the International Association for Hydrogen Energy (IAHE). The IJHE was established in 1976 and aims to provide a central vehicle for the exchange and dissemination of new ideas, technology developments and research results in the field of Hydrogen Energy between scientists and engineers throughout the world. The over 1500 scientist and student members of the IAHE rely on the IJHE to stay informed of the latest developments in hydrogen and clean energy research.

Ultimately, we strive to support the progress of science by producing and broadly disseminating the highest quality peer-reviewed journal possible. Publishers and societies have worked to strengthen scholarly communication and promote open science. In pursuit of clean alternative energy solutions, the IJHE helps to sponsor over 150 alternative/clean energy related conferences and symposiums annually. However, it is critical that these efforts take place within a framework that respects intellectual property rights and our ability to invest in high-quality publications, and that does not hinder researchers from communicating their discoveries.

Our organization is currently deeply engaged in efforts to respond to the COVID-19 pandemic. Many of our scientist authors are not able to access their laboratories to further validate experimental results and respond to peer-review comments, our editorial staff are working with these critical researchers in providing the flexibility of timelines they require in order to provide appropriate responses. We are concerned that OSTP’s significant new regulatory proposal is a distraction from our ongoing efforts to respond to the current crisis and would undermine our stability and undercut our ability to respond to future health crises.

As you are aware, federal agencies currently require that peer-reviewed manuscripts be made freely available online—within one year of publication—if they discuss research funded at least in part by a government grant.¹ This policy represents a significant compromise that balances our shared goals of providing broad access with the need for our organization to recoup the substantial investments we make in the selection, peer-review, editing, publication, distribution, and long-term stewardship of these articles. This one-year compromise contrasts with the length of a full copyright term of life-of-the-author plus 70 years. Importantly, this compromise reflects Congress' guidance (in the authorizing legislation for the current policy) that the Administration must "take into consideration the role that scientific publishers play in the peer review process in ensuring the integrity of the record of scientific research, including the investments and added value that they make."

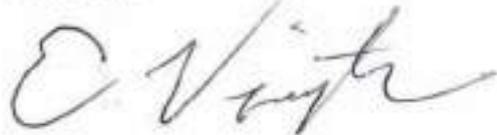
Reducing or eliminating the current one-year embargo would significantly jeopardize our organization's ability to invest in producing the high-quality peer-reviewed journals that our readers in the clean energy community rely on. In so doing, such a policy would contravene Congress' clear guidance to take our role and investments into consideration. Furthermore, such a policy would directly result in a reduction in either the quantity or quality (or more likely, both) of peer-reviewed journal articles produced by hundreds of organizations like ours.

This would not only be harmful to the research enterprise, it would also be harmful to the energy producers and policy makers, scientists, engineers, research institutions and their students who are the ultimate beneficiaries of the scholarly articles we produce.

We urge you not to disrupt our ability to support the advancement of research in clean energy research, and we look forward to working together to identify solutions that advance the goals of open science without undermining the communication of research findings and analyses through peer-reviewed journals.

Thank you again for the opportunity to submit these comments.

Sincerely,



Emre A. Veziroğlu
Chief Operating Manager, HEPLLC

¹These policies were developed pursuant to OSTP's requirement that agencies "shall use a twelve-month post-publication embargo period as a guideline for making research papers publicly available . . ." See OSTP Memorandum on "Increasing Access to the Results of Federally Funded Scientific Research" (Feb. 22, 2013).

²America COMPETES Reauthorization Act of 2010, Section 103(b)(9), *available at*: <https://www.congress.gov/111/plaws/pub1358/PLAW-111/pub1358.pdf>.



American Shoulder and Elbow Surgeons
9400 West Higgins Road, Suite 500
Rosemont, IL 60018

1 May 2020

BY ELECTRONIC SUBMISSION

Dr. Kelvin K. Droegemeier
Director, Office of Science and Technology Policy
Eisenhower Executive Office Building
1650 Pennsylvania Avenue, NW
Washington, DC 20504

Response to OSTP Request for Information – FR Doc. 2020-06622 – “Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research”

Dear Dr. Droegemeier,

The American Shoulder and Elbow Surgeons (ASES) is grateful for the opportunity to respond to this request for information. In particular, we write to caution OSTP against adopting a policy mandating the free distribution of peer-reviewed manuscripts earlier than one year after publication.

The American Shoulder and Elbow Surgeons was founded in 1982 with only about 25 members. It now has a membership of over 1,000 orthopaedic surgeons and physicians and researchers. Many of our members are leaders in the field of orthopaedic surgery, including at least 10 who have been Presidents of the American Academy of Orthopaedic Surgery (AAOS). The mission of ASES is to promote the study of shoulder and elbow surgery and disseminate that knowledge to orthopaedic surgeons world-wide by publishing journals and holding instructional courses at which all health-care personnel may learn the state of the art in the field.

ASES publishes four journals: *Journal of Shoulder and Elbow Surgery (JSES)*; *JSES International*; *Seminars in Arthroplasty: JSES*; and *JSES Reviews, Reports, and Techniques*. The main journal, *JSES*, founded in 1992, was the first orthopaedic journal devoted exclusively to shoulder and elbow surgery and remains the leading source of published knowledge in the field world-wide.

Ultimately, we strive to support the progress of science by producing and broadly disseminating the highest quality peer-reviewed journals possible. In that regard, two of our journals, *JSES International* and *JSES Reviews, Reports, and Techniques* are open access journals. However, it is critical that these

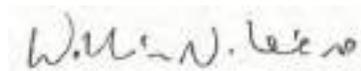
efforts take place within a framework that respects intellectual property rights and our ability to invest in high-quality publications.

As you are aware, federal agencies currently require that peer-reviewed manuscripts be made freely available online—within one year of publication—if they discuss research funded at least in part by a government grant.¹ This policy represents a significant compromise that balances our shared goals of providing broad access with the need for our organization to recoup the substantial investments we make in the publication and distribution of these articles. Reducing or eliminating the current one-year embargo would jeopardize our organization’s ability to invest in producing the high-quality peer-reviewed journals that our readers in the shoulder and elbow surgery community rely on. This would not only be harmful to the research enterprise, it would also be harmful to the patients, surgeons, healthcare professionals, scientists, and researchers who are the ultimate beneficiaries of the scholarly journals we produce.

We urge you not to disrupt our ability to support the advancement of research and patient care in orthopaedic surgery and specifically, shoulder and elbow surgery, and we look forward to working together to identify solutions that advance the goals of open science without undermining the communication of research findings and analyses through peer-reviewed journals.

Thank you for the opportunity to submit these comments.

Sincerely,



William N. Levine, MD
President
American Shoulder and Elbow Surgeons (ASES)



Frank A. Cordasco, MD; Anthony A. Romeo, MD; Mark A. Frankle, MD; Xavier A. Duralde, MD
Presidential-Line
American Shoulder and Elbow Surgeons (ASES)



William J. Mallon, MD; Jeffrey Abrams, MD
Past Presidents
American Shoulder and Elbow Surgeons (ASES)

¹These policies were developed pursuant to OSTP’s requirement that agencies “shall use a twelve-month post-publication embargo period as a guideline for making research papers publicly available . . .” See OSTP Memorandum on “Increasing Access to the Results of Federally Funded Scientific Research” (Feb. 22, 2013).

Lisa Nichols, Assistant Director for Academic Engagement, OSTP
By email: publicaccess@ostp.eop.gov

May 4, 2020

Subject: Response by Creative Commons - Request for Information: Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research

Prepared by Brigitte Vézina, Open Policy Manager, Creative Commons

General comments

[Creative Commons](#) (CC) is pleased to provide its submission to the [Federal Register's Request for Information: Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research](#). We thank the Office of Science and Technology Policy (OSTP) for taking an earnest interest in this important issue and for taking the time to consult with stakeholders.

CC is committed to the goal of ensuring that the public is able to access immediately, freely and without restriction the peer-reviewed scholarly publications, data and code resulting from Federally funded research. We encourage the OSTP to pursue this goal. After supporting successful efforts in open access and open education with Federal agencies, including the OSTP, the U.S. Department of State, USAID, U.S. Department of Labor, and U.S. Department of Education, CC has the institutional knowledge to support this work. We address each question raised in the Request for Information in turn.

Question 1. What current limitations exist to the effective communication of research outputs (publications, data, and code) and how might communications evolve to accelerate public access while advancing the quality of scientific research? What are the barriers to and opportunities for change?

The lack of access to research outputs is a pressing issue. Tax-payers should have access to the research outputs that their tax dollars have funded. Many barriers that currently stand in the way of access could be removed with the help of CC's licenses and tools and thanks to the advice and information we provide to governments and institutions on the creation, adoption and implementation of open policies.

The twelve-month embargo period proposed in the 2013 memorandum [Increasing Access to the Results of Federally Funded Scientific Research](#) is a significant limitation to the effective communication of research outputs. We strongly argue against any embargo period on peer-reviewed scholarly publications resulting from publicly funded research.

Restrictive licensing terms as well as terms and conditions of use that do not allow full access and reuse of research outputs constitute a further limitation. Publications need to be immediately available under terms and conditions that allow their full reuse. Peer-reviewed scholarly publications should be licensed under the [Creative Commons Attribution 4.0 International license \(CC BY\)](#), to allow for the widest possible access, use and reuse of scholarly publications. When [articles are openly licensed](#) using CC BY, they can be translated into other languages, downloaded, and freely shared with scientists, scholars, students, practitioners and the general public the world over.

Increasing access to scholarly publications and underlying research data will undeniably advance the quality of scientific research by increasing the pool of resources available to other researchers working in related fields, by allowing greater transparency in the sharing of research outputs and by enriching scientific discussions and exchanges among researchers in an open and prompt manner.

Furthermore, to enable other researchers and the public to validate, replicate and put to new uses the data underlying scholarly publications, data should be made immediately available (0 embargo period) upon the article's publication and dedicated to the public domain using the [Creative Commons Public Domain Dedication \(CC0\)](#). Data should be FAIR (Findable, Accessible, Interoperable, Reusable). All research outputs (article text, images, charts, graphs, data, etc.) should be made available in machine-readable form in order to take advantage of new computational technologies, including text and data mining, machine learning and AI. Any corresponding software or code should be licensed under an [OSI-approved](#) open source software license.

Free public access to and long-term preservation of final peer-reviewed articles or published versions and supporting data should be provided via either a digital repository maintained by a Federal agency or in any repository that allows immediate and free access.

To sum up, requiring Federal agencies to develop, adopt, and implement open access policies that require:

- a 0 embargo period on the article and research data upon publication,
- the application of the CC BY license on the article,
- researchers dedicate their research data to the public domain using CC0, and
- openly license corresponding software or code

will foster increased access to and progress in scholarly research, science and innovation. CC is ready to engage with Federal agencies and interested stakeholders to provide further advice and expertise on these matters.

Question 2. What more can Federal agencies do to make tax-payer funded research results, including peer-reviewed author manuscripts, data, and code funded by the Federal Government, freely and publicly accessible in a way that minimizes delay, maximizes access, and enhances usability? How can the Federal Government engage with other sectors to achieve these goals?

Please see our comments under Question 1 for arguments in favor of making resources freely and publicly accessible in ways that minimize delay, maximize access and enhance usability.

Federal staff need support to develop their understanding and competency in open licensing before they can effectively achieve these goals. CC offers tutorials and a robust [open licensing training](#), which could be adapted for the specific licensing needs of Federal agency staff: policy, grant and contract officers. CC could develop a Certificate for Government specifically geared towards the needs of Federal agency staff.

The [Federal Open Policy Playbook](#), drafted in part by CC, is a good resource for developing Federal staff understanding of the importance of open licensing policies on publicly funded research, data and educational resources. It provides case studies from Federal agencies applying open policies and a list of key civil society contacts that can provide support.

The Federal Government may engage through exchanges of information and best practices with actors and stakeholders in other sectors that promote widespread open access, such as the [Open Education](#) sector. Creative Commons' Director of Open Education, Dr. Cable Green, is available to talk with OSTP any time: cable@creativecommons.org

Question 3. How would American science leadership and American competitiveness benefit from immediate access to these resources? What are potential challenges and effective approaches for overcoming them? Analyses that weigh the trade-offs of different approaches and models, especially those that provide data, will be particularly helpful.

American businesses in all sectors, particularly SMEs and startups, struggle to gain quick and unfettered access to scientific research publications, data and code for commercial application. These businesses undeniably stand to benefit from policies making those research outputs openly accessible. Open access will accelerate the creation and making of new, innovative products and increase the competitiveness of American industries at the global level.

Open access to publicly-funded research outputs is becoming the global norm as it increases a government's return on investment in research. As other nations around the world increasingly adopt open access policies, the U.S. risks lagging behind in global competition and missing out on innovation opportunities if it does not take a bold stance in favor of open access to publicly funded, peer-reviewed scholarly publication, research data and code.

Open access is also critical for higher education institutions. The U.S. cannot play a leadership role in science if U.S. [scientists](#) routinely cannot access, and build and innovate upon, critical research articles and data.

Question 4. Any additional information that might be considered for Federal policies related to public access to peer-reviewed author manuscripts, data, and code resulting from federally supported research.

Open access policies are increasingly being adopted, as obvious benefits emerge from their application to publicly funded research outputs. For example, in 2019, more than a dozen national research funders across Europe collectively identifying as [cOAlition S](#) introduced "Plan S," an open access policy. According to Plan S, all funded scientific works are made freely available upon publication. cOAlition S cites their fiduciary responsibility as funders to provide a strong, functional science system to the taxpayers who fund it.

More and more private research funders support open access policies and practices. The [Bill and Melinda Gates Foundation](#), for instance, has adopted an open access policy that requires grant recipients to publish their articles with a 0 embargo period, to

license the article CC BY, and to make the research data open so anyone in the world can immediately access its funded research. The [Wellcome Trust](#) and the [Hewlett Foundation](#) have a similar policy.

CC encourages Federal agencies to develop and apply open access policies that provide the public with immediate, comprehensive, and cost-effective access to peer-reviewed publications reporting on the results of the Federally funded research, following the principles established in the [Budapest Open Access Initiative](#). We also press for measures that would make [preprints](#) openly available as well.

Making sure the results of publicly funded research are readily accessible to all citizens speeds up the pace of scientific discovery, spurs innovation, and provides fuel for the creation of new jobs across a broad spectrum of the economy. This conclusion is widely supported by economic models and direct experience. As direct funders of Federally funded research, U.S. taxpayers are entitled to have access to its results in a timely manner and without any legal encumbrance. They also have a right to expect that the distribution and use of these results will be maximized to increase their return on investment. Further, open access policies improve transparency and accountability in government spending.

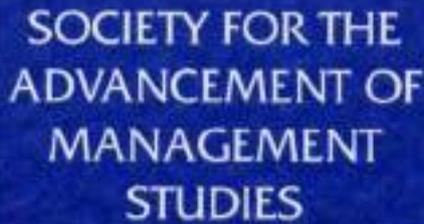
CC remains committed to working with Federal agencies and other stakeholders to ensure the public's investment in research is maximized for the benefit of researchers, industry and the public as a whole.

The U.S. has provided exemplary relief and support for humanitarian disasters, and epidemics that threaten American human security, such as Ebola. One of the most efficient ways to address epidemics and protect citizens is through enacting policies that enable the fast transfer and updating of information for scientists and humanitarian workers, i.e., open access policies. COVID-19 presents the greatest public health threat of our time, and [open access to research](#) is essential to address the pandemic.

In closing, we reiterate our gratitude to the OSTP for facilitating a robust discussion of this important issue. To follow through, we suggest implementing a strong immediate open access policy for the results of publicly-funded research.

Please contact Creative Commons anytime we can be of assistance.

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SOCIETY FOR THE
ADVANCEMENT OF
MANAGEMENT
STUDIES

Address for correspondence:
SAMS, c/o Durham University Business School, Mill Hill Lane, Durham, DH1 3LB, UK
Tel: +44 (0)191 334 5396 Email: business.sams@durham.ac.uk

1st May 2020

BY ELECTRONIC SUBMISSION

Dr. Kelvin K. Droegemeier
Director, Office of Science and Technology Policy
Eisenhower Executive Office Building
1650 Pennsylvania Avenue, NW
Washington, DC 20504
USA

Response to OSTP Request for Information – FR Doc. 2020-06622 – “Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research”

Dear Dr. Droegemeier,

The Society for the Advancement of Management Studies (SAMS) is grateful for the opportunity to respond to this request for information. In particular, we write to caution OSTP against adopting a policy mandating the free distribution of peer-reviewed manuscripts earlier than one year after publication.

SAMS is a UK-based not-for-profit organisation, which oversees the *Journal of Management Studies* (JMS) and funds research projects and other activities aimed at developing the management studies community around the world. The Society was founded in 1963 and is governed by a council of 22 trustees, based in the United States, the United Kingdom, the European Union, Canada, Singapore and Australia. JMS is ranked in the top 15 business journals and top 20 management journals in the world according to ISI and publishes cutting-edge research across all fields of business and management and from around the world.

Ultimately, we strive to support the progress of science through our activities. Publishers and societies have worked to strengthen scholarly communication and promote open science. However, it is critical that these efforts take place within a framework that respects intellectual property rights and our ability to invest in high-quality publications, and that does not hinder researchers from communicating their discoveries.

As you are aware, federal agencies currently require that peer-reviewed manuscripts be made freely available online—within one year of publication—if they discuss

research funded at least in part by a government grant.¹ This policy represents a significant compromise that balances our shared goals of providing broad access with the need for our organization to recoup the substantial investments we make in the publication of these articles. This one-year compromise contrasts with the length of a full copyright term of life-of-the-author plus 70 years. Importantly, this compromise reflects Congress' guidance (in the authorizing legislation for the current policy) that the Administration must "take into consideration the role that scientific publishers play in the peer review process in ensuring the integrity of the record of scientific research, including the investments and added value that they make."²

Reducing or eliminating the current one-year embargo would significantly jeopardize our organization's ability to invest in producing the high-quality peer-reviewed research that our readers in the business and management studies community rely on. In so doing, such a policy would contravene Congress' clear guidance to take our role and investments into consideration. Furthermore, such a policy would directly result in a reduction in either the quantity or quality (or more likely, both) of peer-reviewed journal articles produced by hundreds of organizations like ours.

This would not only be harmful to the research enterprise, it would also be harmful to the practicing managers and businesses who are the ultimate beneficiaries of the scholarly journals we produce.

We urge you not to disrupt our ability to support the advancement of research in management studies, and we look forward to working together to identify solutions that advance the goals of open science without undermining the communication of research findings and analyses through peer-reviewed journals.

Thank you again for the opportunity to submit these comments.

Sincerely,

A handwritten signature in black ink, appearing to read "B. Harley", with a long horizontal flourish extending to the right.

Professor Bill Harley
Chair
The Society for the Advancement of Management Studies

¹These policies were developed pursuant to OSTP's requirement that agencies "shall use a twelve-month post-publication embargo period as a guideline for making research papers publicly available . . ." See OSTP Memorandum on "Increasing Access to the Results of Federally Funded Scientific Research" (Feb. 22, 2013).

² America COMPETES Reauthorization Act of 2010, Section 103(b)(9), *available at*: <https://www.congress.gov/111/plaws/publ358/PLAW-111publ358.pdf>.

May 4, 2020

Dr. Lisa Nichols
Assistant Director for Academic Engagement
Office of Science and Technology Policy
The White House
1600 Pennsylvania Avenue NW
Washington, DC 20500 USA
Via email: publicaccess@ostp.eop.gov
Re. RFI Response: Public Access

Dear Dr. Nichols:

Thank you for inviting comment on how best to achieve public access to the research articles and data stemming from U.S. government funding. Immediate, free online access to the results of federally funded research in the life sciences and biomedicine is critical to accelerating scientific discovery and the benefits it brings to the American people and economy. While this has always been true, the COVID-19 pandemic has clearly demonstrated the importance of having new results available immediately, without paywalls that impede access, and the need for these results to be rapidly peer-reviewed with the highest editorial standards. While COVID-19 is a unique challenge, the same logic applies to all of the other scientific challenges we face.

We write on behalf of eLife Sciences Publications, Ltd, a 501(c)3 non-profit and publisher of a leading, digital-first open-access journal for the life sciences and biomedicine. eLife was founded in 2011 through a collaboration of the Howard Hughes Medical Institute (USA), the Max Planck Society (Germany) and Wellcome (UK) to improve science publishing and deliver open access to the most important results. We are also supported by the Knut and Alice Wallenberg Foundation (Sweden). Our mission is to help scientists accelerate discovery by operating a platform for research communication that encourages and recognises responsible behaviours. We pursue improvements in publishing, technology and research culture to achieve our aims. You can learn more about eLife on our website: <https://elifesciences.org/about>.

Below, we address each of the questions raised in the Request for Information.

1 – What current limitations exist to the effective communication of research outputs (publications, data, and code) and how might communications evolve to accelerate public access while advancing the quality of scientific research?

Today, progress in science and medicine is handicapped by restrictions that bar researchers, clinicians and others from leveraging the latest insights in further research, patient treatment, translational work, and innovative business. Legal barriers restrict the effective re-use of relevant findings by other researchers. Technical barriers inhibit access and discovery for search engines connecting findings with key readers. And financial barriers prevent access to the latest results for research, education, patient care, and business. Given the immense benefits scientific research brings to the health and well-being of people in the US, and the critical role it plays in driving our economy, it is fair to say that access barriers that slow research are killing people and damaging our economy.

At eLife, we believe there should be no barriers to the immediate, open online sharing of research articles, data or code. We believe research communication must evolve so that new findings are made immediately available, peer review is organised in the open, and discovery tools are fully enabled to help connect readers to all relevant material.

Peer review is key to assessing the quality, relevance and potential importance of individual works. We envisage a future in which the act of publishing results to make them openly accessible immediately is separate from peer review and curation. In this future, new findings are available to be peer-reviewed by multiple scientific communities at one time – further refining the collective assessment of their quality.

The first step in realising an evolution of research communications that truly serves science and medicine today is a strong national policy requiring free and immediate access to federally funded research.

2 – What can Federal agencies do to make taxpayer-funded research results, including peer-reviewed author manuscripts, data, and code funded by the Federal Government, freely and publicly accessible in a way that minimizes delay, maximizes access, and enhances usability? How can the Federal Government engage with other sectors to achieve these goals?

We strongly encourage U.S. Federal agencies to implement a strong national policy to ensure immediate, widespread, barrier-free access to the full results of publicly funded scientific research. This policy should require:

- All final peer-reviewed articles resulting from taxpayer-funded research be made freely available online immediately upon publication in a peer-reviewed journal;
- Access to the underlying data and tools needed to validate the results of these papers (e.g. software or code);
- All data be made available under findable, accessible, interoperable and reusable (FAIR) terms and conditions;
- Articles be made available in formats that support text and data mining and computational analysis;
- Articles carry an open license or be attributed to the public domain.

Each of these things is essential to enabling the degree of access and interaction necessary for science and medicine to achieve the pace we should expect in the modern world.

We encourage Federal agencies to work with native open-access publishing organisations, including institutional repositories, to facilitate author education, engagement and compliance as well as mass deposit. eLife is available to assist at any point.

3 - How would American science leadership and American competitiveness benefit from immediate access to these resources? What are potential challenges and effective approaches for overcoming them?

American scientific leadership has driven our economy and place in the world for over a century. It has been built on a spirit of openness and collaboration that has allowed our scientists and entrepreneurs to work together. American scientific leadership is now threatened by the inability of many scientists - especially those not working at the best-funded private universities and those working in the innovative small companies that drive our economy - to access the latest scientific research. The United States is poised to lead a new scientific revolution based on data. But not if the data are locked behind paywalls. 'AI readiness' is a national priority, and a national policy ensuring public access to publicly funded research articles, data and code is the first step in providing the fuel needed for artificial intelligence and machine-learning tools to achieve their potential. The recent development of the Covid-19 Primer (www.covid19primer.com) is an example of a US-based innovation that uses

machine learning combined with open access to provide scientists with the most up to date information in the most urgent of challenges.

Federally funded research outputs therefore must be made available in open and machine-readable formats to generate breakthroughs in AI and related technologies¹.

It's also true that U.S. leadership and competitive position are constrained so long as our scientists routinely cannot access critical research articles and data. Other countries are out-pacing us as they adopt immediate open-access policies to accelerate their research programs.

COVID-19, again, is a stark reminder of the critical importance and urgency of immediate online sharing of research reports, data and code to enable rapid checking, confirming and building upon new results. The importance of making this research open has been underlined by the decision by many subscription-based publishing houses to make coronavirus-related research openly available for the duration of the pandemic. Even the publishing industry acknowledges that open research is more useful than paywalled research. The U.S. should be at the forefront of working to a future where all research is available to everyone, beginning with a strong national policy for immediate open access to the results of publicly funded research.

Dr. Nichols, thank you again for the opportunity to comment. If eLife can help as you continue your assessment, please don't hesitate to contact us.

Sincerely,

Damian Pattinson
Executive Director
d.pattinson@elifesciences.org

Michael B. Eisen
Editor-in-Chief, eLife
Professor of Genetics, Genomics and
Development
University of California at Berkeley
mbeisen@berkeley.edu

¹ As MIT professor and author Alex Pentland has laid out, success in innovation comes foremost from discussing one's ideas widely, to improve them and adapt them to real world problems, rather than developing such ideas in secret without broad feedback. Reference: Alex Pentland, Social Physics – How social networks can make us smarter. Random House, 2015, 320 pp



May 4, 2020

Dr. Kelvin K. Droegemeier
Director, Office of Science and Technology Policy
Eisenhower Executive Office Building
1650 Pennsylvania Avenue, NW
Washington, DC 20504

Response to OSTP Request for Information – FR Doc. 2020-06622 – “Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research”

Dear Dr. Droegemeier,

The American Glaucoma Society is grateful for the opportunity to respond to this request for information. In particular, we write to caution OSTP against adopting a policy mandating the free distribution of peer-reviewed manuscripts earlier than one year after publication.

The American Glaucoma Society (AGS) is the premier glaucoma society in the world. The AGS is comprised of Glaucoma Specialists dedicated to sharing clinical and scientific information for the benefit of patients, colleagues, fellows and residents. Since the establishment of the Society, the number of members has increased from 13 founding members in 1985 to over 1450 today, from 17 countries, including members who are currently in glaucoma fellowship training, fellowship trained glaucoma specialists, and scientists active in glaucoma research.

The clinicians and scientists of the society strive to provide excellent and comprehensive care to patients with glaucoma in a collaborative manner in the community, academic, and industry settings. The AGS provides a collegial atmosphere for its members to exchange insights and ideas, with a common goal of conquering this blinding disease.

Ophthalmology Glaucoma (OG) is our journal. OG and the AGS work collaboratively. Research presented at our annual meeting is published in OG. *Ophthalmology Glaucoma* is essential for our members as it carries the most current applicable research that helps us better understand and treat glaucoma as well as publish our white papers. Thus, OG helps us better serve our patients offering solutions for difficult problems.

Ultimately, we strive to support the progress of science by producing and broadly disseminating the highest quality peer-reviewed journals possible. Publishers and societies have worked to strengthen scholarly communication and promote open science. However, it is critical that these efforts take place within a framework that respects intellectual property rights and our ability to invest in high-quality publications, and that does not hinder researchers from communicating their discoveries.

Our organization is currently deeply engaged in efforts to respond to the COVID-19 pandemic. We are concerned that OSTP’s significant new regulatory proposal is a distraction from our ongoing efforts to



respond to the current crisis and would undermine our stability and undercut our ability to respond to future health crises.

As you are aware, federal agencies currently require that peer-reviewed manuscripts be made freely available online—within one year of publication—if they discuss research funded at least in part by a government grant.¹ This policy represents a significant compromise that balances our shared goals of providing broad access with the need for our organization to recoup substantial investments we make in the peer-review, editing, publication, distribution, and long-term stewardship of these articles. This one-year compromise contrasts with the length of a full copyright term of life-of-the-author plus 70 years. Importantly, this compromise reflects Congress' guidance (in the authorizing legislation for the current policy) that the Administration must "take into consideration the role that scientific publishers play in the peer review process in ensuring the integrity of the record of scientific research, including the investments and added value that they make."²

Reducing or eliminating the current one-year embargo would significantly jeopardize our organization's ability to invest in producing the high-quality peer-reviewed journals that our readers in the glaucoma community rely on. In so doing, such a policy would contravene Congress' clear guidance to take our role and investments into consideration. Furthermore, such a policy would directly result in a reduction in either the quantity or quality (or more likely, both) of peer-reviewed journal articles produced by hundreds of organizations like ours.

This would not only be harmful to the research enterprise, it would also be harmful to our readers, members, and the general public who are the ultimate beneficiaries of the scholarly journals we produce.

We urge you not to disrupt our ability to support the advancement of research and patient care in ophthalmology (glaucoma), and we look forward to working together to identify solutions that advance the goals of open science without undermining the communication of research findings and analyses through peer-reviewed journals.

Thank you again for the opportunity to submit these comments.

Sincerely,

A handwritten signature in black ink that reads "Alan L. Robin". The signature is fluid and cursive, with the first name "Alan" being the most prominent.

Alan L. Robin, MD

Executive Vice President, American Glaucoma Society

¹These policies were developed pursuant to OSTP's requirement that agencies "shall use a twelve-month post-publication embargo period as a guideline for making research papers publicly available . . ." See OSTP Memorandum on "Increasing Access to the Results of Federally Funded Scientific Research" (Feb. 22, 2013).

² America COMPETES Reauthorization Act of 2010, Section 103(b)(9), available at: <https://www.congress.gov/111/plaws/publ358/PLAW-111-publ358.pdf>.

BY ELECTRONIC SUBMISSION

Dr. Kelvin K. Droegemeier
Director, Office of Science and Technology Policy
Eisenhower Executive Office Building
1650 Pennsylvania Avenue, NW
Washington, DC 20504
USA

Amsterdam, 4 May 2020

Response to OSTP Request for Information – FR Doc. 2020-06622 – “Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research”

Dear Dr. Droegemeier,

John Benjamins Publishing Company is grateful for the opportunity to respond to this request for information. In particular, we write to caution OSTP against adopting a policy mandating the free distribution of the published ‘Version of Record’, irrespective of any embargoes, without any financial compensation to the publisher, such as the payment of an Article Publication Charge or a Read & Publish arrangement between the publisher and the author’s institution.

John Benjamins Publishing Company is an independent, family-owned academic publisher in Humanities and Social Sciences, headquartered in Amsterdam, The Netherlands. Founded over 50 years ago by John and Claire Benjamins, the company is currently under the general management of their daughter Seline Benjamins.

Over the years John Benjamins Publishing Company (JB) has been firmly rooted in every imaginable subfield of linguistics and language sciences. Further fields of focus are cognitive science, psychology, philosophy, terminology, information design, literary studies and art history. In 2019 JB published 85 journals and 120 new book titles. All journals and books are electronically available (full-text).

JB takes pride in maintaining a constant dialogue with the various academic communities to stay at the forefront of research developments and needs, and in serving as an academic exchange for scholars from every part of the world. Scholars in our main field of linguistics certainly consider us as a partner in their endeavours.

page 1/2



Ultimately, we strive to support the progress of science and scholarship by producing and broadly disseminating the highest quality peer-reviewed journals possible. Publishers and societies have worked to strengthen scholarly communication and promote open science. However, it is critical that these efforts take place within a framework that respects intellectual property rights and our ability to invest in high-quality publications, and that does not hinder researchers from communicating their discoveries.

For that reason, we have a liberal ‘green’ Open Access policy, allowing our authors to post the ‘author accepted manuscript’ (that is, a version reflecting any changes made in the peer review process, but not the edited, formatted and published Version of Record) on the author's personal website, the website/institutional repository of the author's institute and/or funder, and on electronic pre-print servers, including subject-based repositories.

Given the nature of research in our fields of publishing, where materials stay relevant for a long time and are still cited after decades, allowing the Version of Record to become Open Access without any fees, even after an embargo of 12 or 24 months at the very least, would significantly impact on our ability to recover the costs of publication and invest in new procedures and technologies that are required to continue serving our authors to the standard that their work requires.

We urge you not to disrupt our ability to support the advancement of research and education in linguistics and language sciences, and we look forward to working together to identify solutions that advance the goals of open science without undermining the communication of research findings and analyses through peer-reviewed journals.

Thank you again for the opportunity to submit these comments.

Sincerely,

Seline T. C. Benjamins
Managing Director, John Benjamins Publishing Co.
<https://benjamins.com>

BY ELECTRONIC SUBMISSION

Dr Lisa Nichols
Assistant Director for Academic Engagement, OSTP
Office of Science and Technology Policy
Eisenhower Executive Office Building
1650 Pennsylvania Avenue Washington, DC 20504

4th May 2020

Dear Dr Nichols,

Response to request for information: Public Access To Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research.

Emerald welcomes the opportunity to respond to the OSTP's request for information.

About Emerald

Founded by management researchers in 1967, Emerald Publishing manages a portfolio of over 300 journals, more than 2,500 books and over 1,500 case studies. We publish work by over 5,000 US authors every year, predominantly across the social sciences and humanities disciplines.

Open Access

We remain committed as a publisher to realising the benefits of full and immediate sustainable open access for our authors and their stakeholders. We appreciate the efforts of OSTP to engage with the wider discussion of public access.

Emerald operates a zero month embargo across all of its journals and books; all authors can deposit their Author Accepted Manuscript (AAM) into their funder or institutional repository immediately upon official publication, under a Creative Commons Attribution Non-Commercial Licence (CC BY-NC). We believe this licence is a sustainable choice, and allows the public to access and use the research within. We would caution against mandating a CC-BY licence as this would undermine the ability to re-coup costs of publishing and the sustainability of open access publishing via AAM deposit.

Furthermore, some authors who understand the provisions of Creative Commons licences are strongly against the rights provided under a blanket CC-BY licence, that they have not had the option to choose themselves.

Emerald supports efforts to enable the machine-readability of content; all Emerald content is tagged according to NISO JATS standard and its licence information is clearly indicated, making it explicit for Text & Data mining activities (TDM) and research designed for Artificial Intelligence.

Emerald is supportive of clear workflows to increase public engagement and access to funded research outputs, provided that these workflows are scaleable and sustainable. If systems are created which require automatic deposit, we would ask that recognition is made of the technical and financial burden this may have, particularly on small, independent and society publishers.

Data

Emerald adheres to the Transparency and Openness Promotion (TOP) guidelines, a framework which encourages the sharing of datasets and reproducibility of research. Any data policies designed by federal agencies must be made with the understanding that sensitive data may not be suitable for sharing to the wider public, and in other cases, what licence is it shared under.



Emerald citations and references are released under a Creative Commons Public Domain dedication (CCO), in accordance with the Declaration on Research Assessment (DORA), which Emerald is a signatory of.

Serving communities

Emerald is currently engaged in efforts to respond to the COVID-19 pandemic; we have provided, and continue to provide COVID-19-related research to both PubMed Central and the World Health Organisation. We are concerned that OSTP's significant new regulatory proposal is a distraction from our ongoing efforts to respond to the current crisis and would undermine our stability and undercut our ability to respond to future health crises.

Emerald is of the opinion that research outputs which are not federally funded should not be covered by this executive order, and should be recognised as separate copyrighted works. Author choice should be at the core of scholarly publishing and academic research, in both choosing their publication outlet and licence that they publish their research under.

Emerald believes that the rights of researchers and the publishing community should be respected, and that rigour, quality and integrity should remain at the heart of what we do.

We ask that OSTP continues to seek transparent dialogue between all stakeholders concerned to develop community-appropriate solutions that offer public access to funded research.

We remain ready to support the process, in collaboration with the communities we serve.

Sincerely,

Tony Roche
Publishing & Strategic Relationships Director, Emerald Publishing

Introduction:

The Coalition for Patent and Trademark Information Dissemination (CPTID) appreciates the opportunity to comment on the Office of Science and Technology Policy's (OSTP) and National Science and Technology Council's (NSTC) Subcommittee on Open Science (SOS) ongoing efforts to facilitate implementation and compliance with the 2013 memorandum *Increasing Access to the Results of Federally Funded Scientific Research* and to address recommended actions made the Government Accountability Office in the November 2019 report.

CPTID is a group of private sector companies that provide value-added services for patent, trademark and copyright information users. These companies have been investing in and building efficient, high quality patent, trademark and copyright search services for more than 50 years. The coalition focuses on issues such as data quality, licensing, availability, currency, historic data and development of IP information.

CPTID believes the following principles are critical to ensuring the highest quality and integrity of the U.S. intellectual property system:

- US Federal Government Policies Should Encourage a Diversity of Sources for Intellectual Property Information
- The US Federal Government's Funding Allocations Should Give the Highest Priority to Improving the Quality and Efficiency of Internal Operations
- The US Federal Government Should Recognize That Functionality Is Value, and Functionality Costs
- The US Federal Government's Policies Should Create an Environment for Maximizing Competition among Private Sector Intellectual Property Information Providers
- The US Federal Government's Policies Should Be Informed by Competition Law and Antitrust Law Principles of Fair Competition

CPTID's Perspective:

Below CPTID will address the questions set forth in the RFI and explain why we oppose the current effort to increase access to federally funded scientific research.

- 1.) What current limitations exist to the effective communication of research outputs (publications, data, and code) and how might communications evolve to accelerate public access while advancing the quality of scientific research? What are the barriers to and opportunities for change?**

We believe that there are currently very few limitations to the effective communication of research outputs. If limitations exist, they are due to federal agencies failing to quickly implement the goals laid out in the 2013 memo. The memo directed federal agencies with over \$100 million in annual conduct of research and development expenditures to develop a plan to support increased public access to the results of research funded by the Federal Government.

Yet, a November 2019 Government Accountability Office (GAO) report found that, of the 19 federal agencies reviewed, very few had made real progress towards meeting the goals outlined in the 2013 memo. For example:

- 7 agencies have not taken steps to make data findable, such as creating a single web access point
- 4 don't require all researchers to submit a plan to provide access to data
- 11 don't fully ensure that researchers comply with access requirements

CPTID urges OSTP to work with these agencies to implement the 37 recommendations made by GAO so that their data is more readily available.

However, that is not to say that the memo has not led to some advancements in communication of research output. According to a 2016 statement from the White House, all agencies have designated repositories and systems for opening up access to a large number of publications resulting from Federally-funded research: ¹

PubMed Central, the National Institutes of Health's (NIH) repository of life-sciences literature, now contains more than 4 million full-text articles and is used by more than 1.25 million people per day. NIH now provides access to a collection of 430,000 author manuscripts published since 2008, optimized for text-mining and freely available by file transfer protocol.

The National Science Foundation's Public Access Repository, NSF-PAR, provides access to almost 11,000 full-text research articles; it leverages technology from the Department of Energy's Public Access Gateway for Energy & Science, which now provides access to more than 24,000 full-text research articles.

The Defense Technical Information Center launched a dedicated public-access system earlier this year that contains more than 2,000 articles resulting from research funded by the Department of Defense. It has also simplified access to more than 30,000 full-text journal articles housed in its extensive technical reports collection.

The Department of Agriculture has made 95,000 full-text journal articles available through its PubAg and TreeSearch systems.

The Environmental Protection Agency has signed an interagency agreement with the National Library of Medicine to use PubMed Central as the designated repository for peer-reviewed scholarly publications.

CENDI, a group of Federal agencies that manage scientific and technical information, created a central source of authoritative information about agency public access plans and

¹ <https://obamawhitehouse.archives.gov/blog/2016/10/28/federally-funded-research-results-are-becoming-more-open-and-accessible>

implementation and intends to enhance its existing Science.gov system to facilitate search across the various Federal agency public-access systems.

These agencies, and many others, provide an enormous amount of publicly accessible, federally funded, data. We do not believe that expanding upon this already generous program will benefit publishers, the U.S. government, the economy, or the public—particularly when the effects of the 2013 memo are still to be determined.

Take, for instance, the OSTP policy that peer-reviewed journal articles that report on federally funded scientific research must be made freely available to the public 12 months after publication. This unprecedented regulatory intervention in the marketplace effectively reduces a copyright from an author's life plus 70 years to a single year.

As publishers of value-added services for intellectual property information users, we have watched with concern about the government regulation of copyrighted journal articles. We do not think the government should be undermining the Constitution and the Copyright Act by effectively reducing the level of copyright for any type of copyrighted work, including peer reviewed articles that discuss federally funded research.

2.) What more can Federal agencies do to make tax-payer funded research results, including peer-reviewed author manuscripts, data, and code funded by the Federal Government, freely and publicly accessible in a way that minimizes delay, maximizes access, and enhances usability? How can the Federal Government engage with other sectors to achieve these goals?

Private-public partnerships in the academic research space have, for decades, been beneficial to all parties involved. The current system strikes the delicate balance of compensating publishers—and, in turn researchers—while also bringing high-quality research to the public.

Proponents of the open-access movement often state the advantages of providing free access to research while neglecting to point out the shortcomings: low quality articles, transferring costs onto authors (a move that often excludes voices from our most vulnerable communities) and incentivizing authors to research lucrative topics rather than those that could provide the most benefit to society.

The truth is that many publishers are happy to provide customers with services under the subscription or open access model, provided it is sustainable and maintains the high standards the public deserves. However, certain proposals CPTID have learned about to further diminish private publisher's copyrights in privately funded journals will only serve to harm private sector publishers and the economy.

If OSTP is looking for ways to improve public access to data, we recommend that should start by ensuring federal agencies increase public access to their raw data, per the 2013 memo.

3.) How would American science leadership and American competitiveness benefit from immediate access to these resources? What are potential challenges and effective approaches for overcoming them? Analyses that weigh the trade-offs of

different approaches and models, especially those that provide data, will be particularly helpful.

It is possible that American science leadership and American competitiveness would benefit if the terms of the 2013 Holdren memo were fully implemented by the US Federal agencies.

It is almost certain, however, that American science leadership and American competitiveness would be actively diminished if the copyrighted term of privately funded peer review articles is lessened or eliminated altogether. The trade-offs for such a requirement would include:

a. Increased Taxpayer Burden

If the Administration were to require free distribution of peer-reviewed journal articles—immediately upon publication—if the articles report on research funded in whole or in part by a federal agency, the costs will inevitably fall onto the taxpayer. Peer-reviewed articles are not free to produce. Hundreds of publishers across America—ranging from non-profit scientific and technical societies to large corporations—make considerable investments, at no cost to taxpayers, to finance the peer-review, publication, distribution, and long-term stewardship of these articles. Publishers recoup this investment by selling subscriptions to their journals to users in the U.S. and in hundreds of foreign countries, contributing positively to the U.S. balance of trade. Users will not pay subscriptions for articles that are available for free as soon as they are published. If publishers are forced to give away their peer-reviewed articles for free, they will no longer be able to finance the costs of producing peer-reviewed articles.

If publishers cannot finance the production of peer-reviewed articles, these costs will have to be funded elsewhere. Researchers are likely to have to pay up front to have their articles peer-reviewed and published. But the vast majority of researchers either cannot afford to or are unwilling to pay to publish their articles. If the government makes it effectively impossible for grant recipients to publish their articles without paying up front, these researchers will turn to their grant-funding agencies to finance peer review and publication. Ultimately, American taxpayers will be stuck with the bill. In fact, multiple studies suggest that this is the most likely outcome, and that such a shift will also incur additional costs overall.

b. At Least \$6 Billion Over Ten Years, and Rising

Proponents of making privately funded scholarly and medical publications immediately available to the public have not provided data on the likely costs to the government to finance publication of peer-reviewed articles, and to the best of our knowledge that data is not available in the United States. A 2018 study in the UK found that in 2017 the average open access publishing fee for articles reporting on research funded by the UK government was 1,988 British pounds, roughly \$2,650. This may be an underestimate—for highly selective journals, publishing costs can reach tens of thousands of dollars per article.

There are more than 224,000 articles published each year reporting on research funded in whole or in part by a U.S. federal agency. At a publishing fee of \$2,650 per article, the cost to the

federal government to finance publication of these articles would be approximately \$6 billion over 10 years.

Even that number does not include the full costs. Grant-funding agencies will have to substantially increase their administrative role to manage a new system of government-financed publication charges, increasing administrative costs. Publishers that currently subsidize their open access articles through subscription fees will no longer be able to do so, further increasing those costs. And costs will increase over time. The UK study found that open access publishing fees increased by over 25% from 2014 to 2017.

c. Unnecessary Regulation, Pure and Simple

In short, the proposed executive order would nationalize a function that is currently financed and performed by hundreds of private sector corporations and non-profits throughout the country. In the process, it would force taxpayers to foot the bill and impose a rigid one-size-fits-all business model on what is currently a diverse, competitive, and innovative American industry.

d. Diminished competitiveness with China

Allowing free access to peer-reviewed journals would destroy American exports and amount to a giveaway to other countries, especially China. America's economic strength is built upon the research that academics do in a plethora of industries, including the aerospace, aviation, defense, and biomedical fields. Making this information immediately available for free would grant China the ability to grow their economy off the backs of U.S. research and money.

China has increasingly sought to rewrite the rules of the global order in their favor. Part of that mission includes weakening IP protections. If the U.S. follows through with this executive order, it will be playing right into China's hands by adopting a state-drive one-size-fits all model that treats American IP and the private sector as a hindrance.

Email Subject: RFI Response: Public Access from European Commission, DG RTD.G4 Open Science

Document Title: Request for Information: Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting from Federally Funded Research

Response from: Konstantinos Glinos, Head of Unit Open Science, Directorate-General for Research and Innovation, European Commission, Brussels, Belgium

Authors: Konstantinos Glinos, Jean-François Dechamp, Victoria Tsoukala, Alea López de San Román, Stephanie Holst-Bernal

Email: Konstantinos.Glinos@ec.europa.eu

I would like to thank the Office of Science and Technology Policy for the possibility to respond to the Request for Information concerning public access to federally funded research.

As a policy maker and a funder, the European Commission has been contributing to the development of open access since the early 2000s. The European Commission strongly believes that open access has the potential to improve scientific research by improving research efficiency, reproducibility, involving citizens and society as well as accelerating innovation. The results of publicly-funded research should be openly accessible to all immediately. The COVID-19 crisis is only highlighting the path we all have to follow with regard to open access.

The Commission makes open access part of Open Science, which represents an approach based on cooperative work and ways of diffusing knowledge that use digital technologies and collaborative tools. The obligations for the beneficiaries of its research and innovation funding programmes are summarised as follows.

Open access in Horizon 2020 (current programme)

- Open access to peer-reviewed publications via a repository is mandatory. Embargoes are allowed with a maximum of six months for science, technology, engineering and mathematics and 12 months for the social sciences and the humanities. Beneficiaries may additionally publish in open access or subscription venues. Article processing charges for publishing in open access venues are eligible costs.
- Open access to research data via a repository is the default, with exceptions for legitimate reasons. It will thus follow the principle 'as open as possible, as closed as necessary'. Projects producing data are required to develop data management plans (DMP) as deliverables.

Open science in Horizon Europe (programme from 2021)

For Horizon Europe, the Commission aims at publicly funded scholarly publications to **be born open and accessible to all**. The upcoming Horizon Europe policy will be in line with Plan S, of which the Commission is an active supporter. Subject to the on-going finalisation process, this will translate into:

- **Immediate** open access to peer-reviewed publications (no embargos) via repositories and with specific licenses that ensure full open access (e.g. CC BY licenses or equivalent). As a consequence, beneficiaries or authors must retain enough intellectual property rights to

comply with the policy. Additional open access publishing via journals will be supported, however only costs made for publications in purely open access (no hybrid) publishing venues will be eligible.

- Open access to research data will continue to be the default, with exceptions for legitimate reasons. The development and implementation of a DMP will become mandatory, even if not making research data open. Emphasis will be placed on making data Findable, Accessible, Interoperable and Re-usable (FAIR). For specific work programmes, the use of trusted repositories and infrastructures of the European Open Science Cloud (EOSC) will be required for research data.
- Open access to other research outputs such as algorithms, software etc. will be strongly encouraged. It will also require that if open access is not provided to research outputs, access should nonetheless be provided for verification purposes insofar legitimate interests are respected.
- Open Science will be promoted and incentivized in Horizon Europe as part of the evaluation of proposals and including eligibility of costs for Open Science practices.

1. What current limitations exist to the effective communication of research outputs (publications, data, and code) and how might communications evolve to accelerate public access while advancing the quality of scientific research? What are the barriers to and opportunities for change?

1.1 One of the main limitations to effective communication of research outputs is simply the **lack of access** to it. Still 80% of publications are behind paywalls and to have access to the information, institutions spend a big part of their budget in subscription fees. Further, while open access to publications is an increasing trend, open access to research data and other research outputs such as software, models and protocols are still lacking behind. This creates an imbalance between institutions and countries that can pay for access to scholarship, notably, but not exclusively, in the Global South. To accelerate public access while advancing the quality of scientific research, open access to research outputs should be encouraged and actively promoted in policies.

1.2 Sustainable infrastructure to support open access activities is the basis for an effective communication of research outputs. The lack of organisation and clarity about responsibilities in improving access to and use of scientific data are major barriers to change. Infrastructures and thematic data infrastructures for storing and providing access to data are rapidly emerging, but the financing models to ensure long-term access are often missing. In addition, interoperability among countries and disciplines remains an issue, while proprietary formats create barriers to access and lock-in effects. Further, the digital scholarly outputs/contributions are often not **Findable, Accessible, Interoperable and Re-usable (FAIR)**, therefore hindering to truly harvest the benefits of open access.

1.3 Barriers are not only of technical nature. Researchers may not want to invest time in the practicalities of depositing their data. **Easy-to-use tools** for open access activities are needed.

1.4 Many researchers and innovative enterprises are reluctant to share what they perceive to be ‘their’ data and are concerned that others will unfairly benefit from their efforts. Systematic reward and recognition mechanisms are therefore necessary. The **current assessment system of research, academics and institutions** hinders effective communication of research outputs and public access to it as it is mainly based on indicators rewarding publication in prestigious venues (with high Journal Impact Factors). It favours quantity of results over quality and priming individualism over open collaboration. On the contrary, open access and data sharing, reuse and reproducibility of research results, academia-industry collaboration, societal engagement, and bridging research and advanced data skills and training are often not rewarded. To achieve the systemic change towards Open Science, there needs to be cultural shift towards a system that evaluates research works on the basis of their own merit and researchers’ engagement with Open Science. Changes in the academic assessment system by funders and universities, which includes specific indicators for Open Science, are necessary to **promote quality of results over quantity and to reward the practice of and time invested in Open Science**. However, few institutions are taking the risk of experimenting with new metrics and coordination of actions at national and international level are needed to create a systemic change.

1.5 Effective but also **early communication of research outputs** should be encouraged, e.g. via preregistration, registered reports, and/or pre-prints. Preregistering research and registered reports increase transparency, credibility and reproducibility and thereby quality of the results. They further help addressing publication bias toward significant findings as specific details such as data collection methods, analysis plans, and rules for data exclusion are documented in advance. The challenges of the ongoing COVID-19 pandemic blatantly illustrate that public access to scientific information should be immediate and open in nature.

2. **What more can Federal agencies do to make tax-payer funded research results, including peer-reviewed author manuscripts, data, and code funded by the Federal Government, freely and publicly accessible in a way that minimizes delay, maximizes access, and enhances usability? How can the Federal Government engage with other sectors to achieve these goals?**

2.1. **Federal agencies should extend the policies to immediate open access** to publications, but also data and code (with possibilities for exceptions), and other research outputs, e.g. via repositories. While many policies are put in place, they are often not sufficiently **monitored and/or enforced**. Monitoring – and where the case, sanctions – are important measures to set up. Compliance with open access policies can be increased if open access becomes part of the evaluation system for researchers as mentioned above or a condition for granting in the future or paying off grants.

2.2. Since any further rights - such as the right to copy, distribute, search, link, crawl and mine - make research outputs more useful, **policies should also require open licenses** to maximize

access. In particular, research paid with taxpayer money should be available with the most permissive possible license terms, namely with CC-BY. Creating the conditions that will enforce the possibility for such licenses is important, so that copyright is not transferred to publishers. The 'Harvard model' for maintaining rights to license works of employees of institutions under CC-BY is a good way of maintaining such a possibility. Another practice is to change the copyright law to allow researchers to exercise their copyright for immediate open access despite potential agreements with publishers (as is the case in Germany, France, where however embargoes are also maintained).

2.3. Concerted efforts, building on the definition and exchange of good practices are opportunities for change that could lead to economies of scale and efficiency gains. To improve communication of research input, the OSTP together with other research funding bodies, and also researchers, scientific publishers, universities and their libraries, innovative industries, and society at large need to work together and align strategies and standards. If only few countries participate in open access practices, it could be perceived that others may unfairly benefit from the resources without providing their share. It is imperative to make Open Science a global effort and align policies globally and the European Commission is committed to working at the global scale through appropriate forums. The dialogue needs to include **discussions with the publishing industry** about ways to provide open access to publications and about the costs for publishing or accessing publications, but also **support innovative companies** in delivering services for scholarly communications that researchers may gradually come to find useful, such as peer-review companies, publication hosting companies, among others, technology providers. Overreliance on a few large companies that leads to them having control over the digital scholarly output (publications, data and other outputs) at the expense of researchers, institutions and taxpayers should be avoided as much as possible. Along the same lines, standardization and interoperability of digital content and relevant infrastructure should be secured, such that allows for content re-use and development of infrastructure services that are not controlled by a few companies.

2.4. Guidance and support to researchers and academic institutions is essential. This includes not only **trainings and information**, but also **long-term investments for open access infrastructure** at the national level, as well as support for institutions to invest in their own infrastructures, such as repositories, in order to handle their output for long-term access and support to legal instruments that will maximize access (e.g. to enhance text and data mining, to allow researchers to maintain copyright).

3. How would American science leadership and American competitiveness benefit from immediate access to these resources? What are potential challenges and effective approaches for overcoming them? Analyses that weigh the trade-offs of different approaches and models, especially those that provide data, will be particularly helpful.

3.1 In joining forces of scientific teams, innovative companies and governments, the **current COVID-19 crisis** is an interesting example on how science and innovation, policy makers and the public benefit from immediate access to resources to aid the collective good. Immediate

access to resources expedites the research process and makes it more efficient; supports verifiability of results and reproducibility of research; allows for innovations to happen in faster times (e.g. vaccines), enhances competition between businesses.

3.2 A recent [cost-benefit analysis](#) estimated that **not having FAIR research data costs Europe EUR 10.2bn or more per year**. The analysis took into account costs related to time spent, cost of storage, licence costs, research retraction and double funding. The authors acknowledge that not all factors could be taken into account, partially due to a lack of data, therefore expecting an even larger amount.

3.3 Potential challenges are, as explained above, principally connected to the fact that the academic assessment system currently is not very supportive of immediate open access to research results, as well as it is tightly interconnected to large commercial publishers who do not have an interest in opening up the content before they secure that there is no financial losses for them. More immediate access to research will come when **systemic changes** have happened, which would be a **combination of top-down and bottom-up action**. Certainly pressure should be placed on individuals with power and in the position to bring change, as opposed to early career researchers for example. Requirements for immediate open access to results, for example, should be mandatory for tenured professors and other professionals whose career advancement is not at risk.

4. Any additional information that might be considered for Federal policies related to public access to peer-reviewed author manuscripts, data, and code resulting from federally supported research.

4.1. Deep changes have affected scholarly publishing, but as commented above, the **research assessment system** itself has remained quite stable, whether it is evaluation of academics, of universities, of proposals, of funding organisations or others. Therefore, open access must be developed together with ways to incentivise Open Science and to reward efforts of those who practice it.

4.2. As already stated, international collaboration is key. **The European Commission would welcome opportunities to reinforce its collaboration with OSTP.**

Wolters Kluwer RFI Response: Public Access

Wolters Kluwer appreciates the opportunity to share its views in response to the Office of Science and Technology Policy's (OSTP) request for information (RFI) regarding Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting from Federally Funded Research. This is an important opportunity to build on the discussions of this topic during January's meeting between publishers and OSTP. Wolters Kluwer's responses to each question of the RFI are set out below, but we wanted to highlight four key topics.

First, Wolters Kluwer does not believe that eliminating or reducing the current embargo on public access to federally funded research would have any significant impact on the speed or quality of the clinical protocols we generate. However, without careful planning and analysis a change to the current embargo would have a detrimental effect on our ability to support the full range of clinical research from both funded and unfunded authors. Second, a number of key barriers exist to allowing researchers to efficiently mine data, including: a lack of databases where researchers can deposit data; wide variation of data from one discipline to another; critical issues of data ownership that must be addressed; conflicts between the strict protection of health data and principles of open science and data; and a lack of global consensus on how to openly share data from multinational clinical research studies. Third, any move to more open access will need to provide support for the journal ecosystem that provides tremendous value to clinical research. Fourth, as the precise costs and benefits of immediate public access are not clear, we urge the federal government to conduct a cost-benefit analysis before moving forward with such a policy.

- 1. What current limitations exist to the effective communication of research outputs (publications, data, and code) and how might communications evolve to accelerate public access while advancing the quality of scientific research? What are the barriers to and opportunities for change?**

Clinical research would be more effective if the data and any code were curated, stored and linked to the papers that were the output of the research. New artificial intelligence ("AI") tools would be able to crawl the data from multiple studies undertaken by different groups to assess the reproducibility of the research. It would also be possible then to include data in systematic reviews and meta-analyses to enhance the creation of clinical insights and thus guidelines for clinical care. Currently, systematic reviews access only peer-reviewed research papers through aggregated resources and comprehensive abstract databases.

Wolters Kluwer's Chief Medical Officer does not believe that reducing the current embargo would have any appreciable impact on the speed or quality of the clinical protocols that we generate. Wolters Kluwer produces a widely used clinical decision support tool that is designed to reduce the variability of care in the US healthcare system. No single paper has the ability to change clinical practice, it would need to be

combined over time into systematic review and meta-analyses before it would have an impact on clinical practice.

There are multiple barriers to creating a system that will allow researchers to mine data, including the following:

- a. **There are only a few databases where researchers can deposit data.** Probably the most important one for clinical research is ClinicalTrials.gov. A recent study on the repository over the last 10 years (10-Year Update on Study Results Submitted to ClinicalTrials.gov Zarin, D A, Fain, K M, Dobbins, H D, Tse, T, and Williams R J *New England Journal of Medicine* 381;20 November 2019) has shown that the number of researchers depositing trial results is far lower than the total number of registered US trials conducted. The study identified a pain point in the time and complexity of depositing data. It was noted that often data is the only output of a trial and there is no traceable publication associated with it even 2-4 years after the trial completes.
- b. Some very specific clinical areas have been attempted (see for example NCTN Data Archive (<https://nctn-data-archive.nci.nih.gov/>) which contains all Phase 3 data trials after 2015). Data varies widely from one clinical area to another, with outputs ranging from scans, images, measurements, statistical data, patient data, etc. **Each discipline will need its own dedicated database for depositing and managing data outputs.**
- c. **Data ownership needs to be addressed.** Does the data belong to the group that funded the study, to the researchers or clinicians that took part, or to the patients themselves? What consent needs to be given to allow data to be shared widely and openly? Often pharmaceutical companies “own” the data output from clinical research and they would need to be involved in any effort to make this data more open. Would pharmaceutical companies be prepared to share proprietary data potentially with competitors both domestic and foreign? Would foreign pharmaceutical companies also be prepared to share their data or would this put the US at a disadvantage? If data cannot be copyrighted, then there is a clear incentive for researchers and organizations that fund them to preserve the privacy and security of the data they generated.
- d. **Patient confidentiality is critical in light of the Health Insurance Portability and Accountability Act’s (HIPAA) strict guidance on what can and cannot be shared openly.** In many cases, if patient data is to be useful for new research it needs to be more complete than can be shared publicly. Who would be able to manage and oversee patient data in a confidential way and manage access? If a patient’s right to privacy is violated, who will take responsibility – the data host, the researcher or the funder? **These concerns run counter to the principles of open science and open data sharing.**
- e. Many clinical research studies, particularly clinical trials, are conducted across many clinicians in multiple countries. **How can we reach a global consensus on how to share this data openly?**

Once data repositories have been established, we believe that publishers of all kinds will swiftly put in place protocols for requiring compliance with data rules from our authors. This compliance is unlikely to happen without systems and processes in place to facilitate it.

2. What more can Federal agencies do to make taxpayer funded research results, including peer-reviewed author manuscripts, data, and code funded by the Federal Government, freely and publicly accessible in a way that minimizes delay, maximizes access, and enhances usability? How can the Federal Government engage with other sectors to achieve these goals?

The current publishing landscape for clinical research is a mixed economy with revenue coming from subscriptions, both domestic and overseas, and from pharmaceutical companies and medical device manufacturers. A move to open a substantial part of a journal's content will need to be able to provide at least some income to support the journal ecosystem. Journals provide tremendous value to clinical research, including peer review, editorial oversight and content curation, content enhancement, and hosting and dissemination, including deposit where appropriate in PubMedCentral.

Submission fees are one possible model, but it would likely need to be adopted universally to ensure a level playing field. How would we support authors who do not have any means of funding even submission fees? Wolters Kluwer requires authors to state their sources of funding for articles that we publish and many declare no support. And with less than 5% of our authors opting for open access through the payment of author fees, we assume that funding for that approach is very limited.

Article processing charges ("APCs"), Gold Open Access, are a fair and transparent way to achieve immediate open access to published research. The ability to publish as open access using APCs is widely available and well supported across the publishing industry. Currently, authors can opt in or not as they choose as soon as their article has been accepted for publication. This means there is no penalty or cost for submitting to more than one journal to achieve acceptance for publication. Publishers provide the ability to link within the article to data repositories, or their own supplemental data. However, there is no consistency for how this might work and a lack of places for data hosting.

No single publisher, nor the professional associations for whom they publish, has the scale to be able to create the multiple data repositories that would be required across even clinical research. However, we would welcome the opportunity to work with the federal government and our association partners on pilot projects to set up and support such data repositories.

As the publisher of over 300 journals, primarily clinical research titles, Wolters Kluwer is keen to support the security of the final version of record and its role in preserving high quality evidence-based patient care. If earlier versions of a paper are available openly,

these need to be clearly linked to the version of record with the appropriate disclaimer that the paper cannot be used in clinical practice or patient care without checking that the version of record does not have significant changes or has been retracted for some reason.

3. How would American science leadership and American competitiveness benefit from immediate access to these resources? What are potential challenges and effective approaches for overcoming them? Analyses that weigh the trade-offs of different approaches and models, especially those that provide data, will be particularly helpful.

The benefits of immediate open access are not clear; however, there will certainly be costs associated with such a policy. Thus, it is incumbent on the federal government to conduct a cost-benefit analysis to determine not only the impact such a policy would have on the quality of research and journal publications, but also the costs to the government in the form of direct subsidies to publication. The Office of Information and Regulatory Affairs (OIRA) is well-positioned to conduct such an analysis. Alternatively, each federal agency affected by the policy should undertake a rulemaking, pursuant to the Administrative Procedure Act (APA), to ensure that input from the public and industry stakeholders are appropriately considered.

Funding is also a challenge that can be overcome by making the present system more effective and efficient. More sources of funding would also improve the present system.

We would recommend that the first step be a broader approach to data deposit. There are a number of challenges that we need to overcome. The first major challenge is the availability of suitable repositories. These need to be discipline-specific and the type of data required from a study needs to be defined by a community body to ensure that it can be used and enhanced. Wolters Kluwer would be keen to work with others on at least one such repository to help scope out what is needed to make these a success.

The second major challenge is compliance. We could consider a model for helping researchers to deposit data as part of their article processing charge.

4. Any additional information that might be considered for Federal policies related to public access to peer-reviewed author manuscripts, data, and code resulting from federally supported research.

It is critical that any federal public access policy preserve the quality of peer review, a robust system for ensuring retractions and tracking them to maintain the integrity of the final version of record, and a robust mixed economy that provides authors with publishing options.

Current clinical journal subscriptions contain a lot of content that is derived from funders—either from taxpayers or others. This is particularly true with nursing clinical content. It is imperative that we retain a viable output for research needed for authors who cannot afford article processing charges.

It is clear from the published literature that neither data nor publications alone can help advance clinical research. Data is very important in helping a researcher to understand and judge the quality of the insights that have been gained from a piece of research. However, viewing data alone without the accompanying paper does not tell the whole story. The researcher needs more details about the protocols used before building on a single data set.

There is a robust and well understood ecosystem for peer reviewing, validating and disseminating articles. We need a similar robust system for depositing, curating and giving access to the data output from research. A collaboration between the federal government and stakeholders in the publishing space could drive forward the usability of research by setting out to solve some of these problems together.

Wolters Kluwer would like to thank OSTP again for engaging us on this issue and we look forward to continuing a productive dialogue.

Attn: Lisa Nichols, Assistant Director for Academic Engagement
Office of Science and Technology Policy
725 17th Street, Washington, DC 20501

RE: OSTP RFI: Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting from Federally Funded Research

Massachusetts Institute of Technology Libraries’ comments on Federal Register Document 2020-03189 (endorsed by MIT’s Faculty Committee on the Library System)

MIT has a long history of promoting public access to educational materials through MIT [OpenCourseWare \(OCW\)](#) and [MITx](#), and to research papers through the open access repository [DSpace@MIT](#). MIT reaffirmed commitment to public access to research outputs in the 2019 MIT Ad Hoc Task Force on Open Access to MIT’s Research’s (MIT OATF) [recommendations](#). In recognition of the fact that public access to research accelerates the progress of science and its application to the world’s greatest challenges, the MIT OATF recommends that “data, code, and other types of scholarly work, especially when necessary to validate, replicate, and/or reuse scholarly work, must be openly and responsibly available.”

The current global pandemic gives new urgency to the cause of open science, as open sharing of research data and papers is critical to understanding and combating the coronavirus. As policy-makers, medical professionals, and ordinary citizens seek accurate information about this virus the open availability of research hastens our collective knowledge and ability to respond effectively. The Covid-19 Open Research Dataset (CORD-19) is an example of the kinds of open resources that ought to be common rather than special projects spurred by crisis. Understanding and solving a range of new and persistent global challenges—from coronavirus to cancer to climate change—requires ongoing and immediate public access to peer-reviewed articles, data, and code.

Our responses to the questions posed in the RFI are informed by a two-year broad-based engagement process undertaken by the MIT OATF, which included all sectors of the MIT community (faculty, staff, research scientists, postgraduate fellows and associates, graduate and undergraduate students), as well as consultation with a range of external stakeholders and subject matter experts.

What current limitations exist to the effective communication of research outputs (publications, data, and code) and how might communications evolve to accelerate public access while advancing the quality of scientific research? What are the barriers to and opportunities for change?

As articulated in the [MIT Framework for Publisher Contracts](#), “the benefits to society are greatest when...scholarship is freely and immediately available to the entire world to access, read, and use; without restriction and for any lawful purpose.” The primary barriers to realizing this vision are political and cultural rather than technological. Federal agencies are uniquely positioned to affect political and cultural change through policy, incentives, and support.

Actions we recommend at these levels include:

- Requiring immediate open access to journal articles emerging from publicly-funded research, under open licenses and in formats that permit broad reuse, including computational access.
- Policies that default to open sharing for data and code, with opt-out exceptions available for a range of ethical, legal, security, privacy and/or professional considerations;
- Providing incentives for sharing of data and code, including supporting credentialing and [peer-review](#); and encouraging open licensing. Such policies and incentives are crucial to the acceleration of scientific progress and to addressing the [reproducibility crisis](#).
- Requiring the use of [standard persistent identifiers](#), e.g. Digital Object Identifiers (DOIs) for publications, data and code, [ORCID](#)s for authors, and Ringgold IDs for organizations. Such identifiers are essential infrastructure for scholarly communications, enabling interoperability, disambiguation, discovery, and attribution.

- Recognizing data and code as “[legitimate, citable products of research](#)” and providing incentives and support for systems of data sharing and citation similar to that of the [crystallographic community](#), and emphasizing open systems that support [machine negotiation of citations](#) and computational access.
- Expanding use of and support for open enabling infrastructure, such as the [Public Access Submission System \(PASS\)](#), and [GitHub](#).
- Supporting the development and/or maintenance of trusted and reliable data and code repositories, guided by the [FAIR principles](#), which “put specific emphasis on enhancing the ability of machines to automatically find and use the data, in addition to supporting its reuse by individuals.”
- Developing policies that support the creation of new academy-based publishing technologies and platforms. Public access to research is dependent on stable, interoperable, and sustainable infrastructure; which we believe is better provided by well supported academy-based platforms than by dependence on an increasingly consolidated commercial market. One local example of the kind of not-for-profit consortium of academic, industry, and advocacy organizations that federal agencies might support is the [Knowledge Futures Group \(KFG\)](#), which has its origins in a partnership between the MIT Press and the MIT Media Lab.

What more can Federal agencies do to make tax-payer funded research results, including peer-reviewed author manuscripts, data, and code funded by the Federal Government freely and publicly accessible in a way that minimizes delay, maximizes access, and enhances usability? How can the Federal Government engage with other sectors to achieve these goals?

Federal agencies should eliminate all embargo periods permitted on tax-payer funded peer-reviewed manuscripts and should require immediate open access to all manuscripts resulting from federally-funded research as [funders in Europe](#) have and as [Canada has just committed](#) to. This will ensure tax-payer funded research is “freely and publicly accessible in a way that minimizes delay, maximizes access, and enhances usability.” While the 2013 White House Directive resulted in substantial progress towards open access, many publishers have adopted post-publication embargos of twelve months and longer, despite the fact that the White House Directive encouraged agencies to “use a twelve-month post-publication embargo period as a guideline for making research papers publicly available.” In negotiations with publishers, it is clear that many consider the Federal agencies’ twelve-months embargo guidance as a de facto federally-endorsed standard they can invoke in refusing to accept contracts that call for immediate open access for articles and data. By eliminating embargos on federally funded research, federal agencies can shift the norm towards immediate open access for the entire system.

Viable open access business models are emerging both [in Europe under government requirements](#) and in the US as well. One promising model is the collaborative agreement between the Association for Computing Machinery (ACM) and the libraries at four research universities—MIT, University of California, Carnegie Mellon, and Iowa State University—to co-create a [sustainable open access business model for the ACM](#). As MIT and other universities seek new kinds of open access agreements, libraries, scholarly societies, and Federal agencies have the opportunity to work collaboratively to advance our shared goals of supporting scholars and advancing knowledge. Non-profit university presses likewise require new models to thrive under a fully open access ecosystem. The MIT Press stands as an [early leader in open access publishing](#), providing examples and evidence of sustainable open access practices for scholarly publishers. With an abundance of [guidance](#) and [proven business models](#) available, the argument that embargoes are a necessary means to sustain scholarly publishing rings hollow. Embargoes artificially delay access to scholarly literature, limiting the impact of science, hindering rapid innovation, and slowing the advancement of knowledge that would serve national and global interests.

Federal agencies can and should engage with university libraries, university-based presses, and scholarly societies in advancing sustainable models for open scholarly publishing. The willingness and creativity of the research library community in imagining and supporting innovation in open publishing is evident via the over 100 individual research libraries and consortia that have endorsed [The MIT Framework](#) for Publisher Contracts. The Framework focuses on leveraging existing academy-owned and operated open access repositories to provide public access to research outputs, while also encouraging publishers, scholars, libraries, and funders to fundamentally rethink their relationships with one

another. One example of the kinds of engagements between Federal agencies and research libraries is the recent collaboration between MIT Libraries and the Department of Energy on defining workflows for compliance with their public access policy using MIT's open access repository.

Supporting university presses in transitioning publication and business models to full and immediate open access is another way Federal agencies can engage with key stakeholders to advance the public access goals of the Federal Government. Locally, the experience of the MIT Press is instructive. The MIT Press has grown from two OA journals in 2015 to twelve in 2020, and is actively seeking to transition existing journals to OA with a responsible financial model. In January of 2019, MIT Press launched a new OA journal [Quantitative Science Studies](#) when the editorial board of an Elsevier owned, society-supported journal resigned when [Elsevier refused](#) to provide open access to citation data, to lower the APC charges for open articles, or to transfer ownership of the title to the board. With the support of Federal agencies, The MIT Press and other university-based publishers could assist other journals and societies in the transition to open access. Nonprofit presses like MIT Press could also benefit from alternative funding practices to support journals, such as direct federal funding to cover costs associated with peer review, copyediting, proofreading and other typical publishing functions.

Federal agencies should also ensure that research products based on federally funded research are openly and publicly available for computational access and analysis. Machine access to much of the scientific literature is often impossible or extremely cumbersome at best. Many publishers prohibit computational access to content, including content the federal government has made open, through contracts and licenses that offer open access to human readers, but not to machines. The NIH public access policy has significantly opened up reading access to medical research, but the substantial research advances available through text and data mining are largely [prohibited by an "all rights reserved" limitation on most articles in PubMedCentral](#). Computational access and analysis of literature allows scholars to apply artificial intelligence and machine learning techniques to address powerfully important issues ranging from "[early breast cancer detection](#)" to the current global [COVID-19](#) pandemic. Federal agencies requiring research outputs to be openly available for machine access and computational analysis would enhance usability of federally-funded research.

Federal agencies can also significantly advance open sharing of publications through infrastructure support. Investing in the infrastructure needed for scholarly societies to provide auto-deposit to open repositories (disciplinary, federal, or institutional) would make open access publishing easier for scholars and publishers alike, and would be significantly more sustainable and impactful than investing in open access article-by-article through financial supports for article processing charges, [a model that contains some potential perils](#). Having more agencies follow the lead of NIH and NASA in working with the [Public Access Submission System \(or PASS\)](#) would provide a needed process improvement for authors and universities who aim to meet public access requirements, while minimizing administrative barriers that reduce compliance levels and negatively impact researcher productivity. MIT has contributed to PASS and has worked with commercial and society publishers on auto-deposit services, and we would be happy to share what we have learned and partner with OSTP and others in thinking through these kinds of models.

For data and code, Federal agencies could significantly advance responsible sharing by providing incentives for cleaning, documenting, and making the datasets and code underlying published research appropriately available. These activities are expensive and labor intensive and all too often go unrewarded in the current highly competitive grant-seeking environment. To make federally funded data and code more openly and publicly available, Federal agencies should promote, support, and require effective data practices, such as persistent identifiers for data, and efficient means for creating auditable and machine readable data management plans. Examples of effective and responsible data sharing policies include the [PLoS data sharing policy](#) and the [MIT Press Research Data Policy](#). Federal actions on open data should align with the [Joint Declaration of Data Citation Principles](#) and the [FAIR Data Principles](#).

How would American science leadership and American competitiveness benefit from immediate access to these resources? What are potential challenges and effective approaches for overcoming them? Analyses that weigh the trade-offs of different approaches and models, especially those that provide data, will be particularly helpful.

In this particular cultural moment there are significant pressures toward closure rather than openness, especially in relation to data and code. Many of these pressures emanate from fears that American technological and economic competitiveness might be hindered by the open, global sharing of our valuable research products. Access to sensitive research products can be protected by use of classification, while still allowing public access to research that falls outside of the classification framework. There are also legitimate concerns about the misuse of American research and technology in ways that violate individual rights and/or in ways that run counter to American values and global objectives. Ultimately, MIT is guided on these issues by the vision articulated by President L. Rafael Reif: that we must focus on “building a farsighted national strategy for sustaining American leadership in science and innovation” and in doing so, we must resist the urge “to try to double-lock all our doors.”¹

Although some publishers see lost revenue as a troubling trade-off for open access to research publications, many publishers have found ways to offset those trade-offs and are eager to embrace new models for open publishing. Recently, MIT Press joined other distinguished open access publishers in [signing a letter to the US government](#) supporting open access to publications, indicating that “the U.S. will best lead the world by showcasing its research for everyone, including the American taxpayers who have funded it, to learn from and build on.”

As MIT and other leading US universities seek to [“bridge the gap between discovery and commercialization”](#) by supporting the launch of technology companies with the potential to transform the planet and solve some of the world’s most pressing challenges, lack of open access means that recent graduates and other unaffiliated innovators do not have access to peer-reviewed literature, data, and code that would inform and accelerate their work. In working with start-up founders supported by [The Engine](#) at MIT, MIT librarians were stymied by embargoes and paywalls in providing access to information to these innovators. Given widespread recognition of [improved ROI on research dollars](#) from open access as manifest in policies in [Europe](#) and [China](#), US Federal agencies can best accelerate American innovation, discovery, and competitiveness by adopting zero embargo open access policies for federally funded research outputs. As MIT President Rafael Reif said in [comments before the House Ways and Means Committee](#): “Whatever else the U.S. does to counter the challenges posed by China...we must enhance our capacity to get the most out of [our] investment” in research and technology.

While challenges in sharing code and data vary across disciplines, the MIT OATF concluded that making data and code openly available is critical to “support the robust validation and replication of research.” In weighing and addressing trade-offs associated with security, sensitivity, and privacy concerns, the MIT OATF recommended that “data, code, and other types of scholarly work...must be openly and **responsibly** available” [emphasis added] and that responsible data sharing should follow the principle of “as open as possible, as closed as necessary.” This recommendation reflects full recognition of concerns about [asymmetries of data sharing and the potential implications](#) for national security and competitiveness. It is consistent with the approach newly [announced by the Canadian government](#) in which researchers’ outputs will be “open by design and by default,” including a recommendation that the government develop a “framework identifying criteria for when restricting access to federal scientific research outputs is warranted.” This approach would be productive in the US as well. The Canadian policy reflects evidence of the propulsive power of data sharing to advance innovation, as shown in [the increase in citation of articles whose associated data sets are publicly available](#) and in the highly productive economic impact and [success of the Human Genome Project](#), built on open data.

Federal funders can take actions even in the context of complex trade-offs. Trade-offs related to code present a particular need: balancing openness that can fuel and speed innovation with incentives and support for invention. At MIT the dynamic tension between these aims was discussed as part of the task force’s community engagement, and it was concluded that MIT should “encourage more open sharing of code and reduce the potential negative impact of the proliferation of software patents on entrepreneurship and innovation.” This can be done by developing a set of recommended open licenses for software, by creating and publicizing guidelines, policies, and practices for publishing code under open source licenses, by reviewing software licensing practices to ensure they promote innovation, and through encouraging authors to distribute code openly under popular open source licenses. We suggest that similar steps be adopted by Federal agencies to help promote processes, policies, and infrastructure so data and code sharing can advance as sharing of publications has. Agencies can also address the vital need for sustainable data and code

repositories and credit infrastructure that enables recognition of these contributions to the scholarly record and to society.

Any additional information that might be considered for Federal policies related to public access to peer-reviewed author manuscripts, data, and code resulting from federally supported research.

The challenges presented by the current COVID-19 pandemic make the need for immediate open access to the products of federally funded research abundantly clear and increasingly urgent. While it is laudable that many publishers are opening access to content to support faculty and students now forced to work and learn remotely, our ability to understand and successfully address the medical, social, and economic challenges of this pandemic requires fully open access for humans and machines to all relevant research articles, data, and code. Ensuring such access now and into the future requires strong federal open access policies, as well as aggressive support for enabling infrastructure and business models.

From the 2008 NIH Public Access Policy to the 2013 White House Directive, federal policies and actions have played a major role in advancing openness in research. Federal agencies could continue the push to ensure publicly funded research is openly available to solve the world's greatest challenges by doing the following: eliminating embargoes; supporting the development of key infrastructure; incentivizing responsible sharing of data and code; and encouraging and endorsing partnerships among scholarly societies, libraries and non-profit publishers to develop new publishing models.

Based on the challenges mentioned above, bold action in support of responsible open sharing of research outputs is called for. The United States should lead in advancing openness in the service of innovation, discovery, and the rapid application of new knowledge to complex local and global challenges. MIT President Reif's recent [comments to the House Ways and Means Committee](#) are again relevant here: "Leading in research is a necessary but not sufficient condition for prosperity and security. We also have to be the best and the fastest at translating ideas into products and processes. That's not something that can be accomplished by closing off our system – that just would shut down intellectual exchange that benefits us." We thank the Office of Science and Technology and Policy for this opportunity to comment on a topic that is central to the advancement of this critical intellectual exchange-- an exchange that is an essential ingredient for building human knowledge and solving humanity's greatest problems.

[1] L. Rafael Reif, "[China's Challenge Is America's Opportunity](#)," New York Times, August 8, 2018.



Ecological Society of America
1990 M St, NW, Suite 700
Washington, DC 20036

May 4, 2020

BY ELECTRONIC SUBMISSION

Dr. Kelvin K. Droegemeier
Director, Office of Science and Technology Policy
Eisenhower Executive Office Building
1650 Pennsylvania Avenue, NW
Washington, DC 20504

Response to OSTP Request for Information – FR Doc. 2020-06622 – “Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research”

Dear Dr. Droegemeier,

The Ecological Society of America (ESA) is grateful for the opportunity to respond to this request for information. We write to caution OSTP against adopting a policy mandating the free distribution of peer-reviewed manuscripts earlier than one year after publication.

Founded in 1915, ESA is the world’s largest community of professional ecologists and a trusted source of ecological knowledge. The 9,000 member Society publishes five peer-reviewed [journals](#) and a membership bulletin. ESA journal revenue not only supports the peer review process, but also many other vital programs, including education, outreach and membership services to advance the science of ecology.

Ultimately, we strive to support the progress of science by producing and broadly disseminating the highest quality peer-reviewed journals possible. Publishers and societies have worked to strengthen scholarly communication and promote open science. We at the ESA were early to adopt open science initiatives, with our launch of *Ecosphere*, our fully Open Access journal in 2010. Subsequently, our other research journals have offered Gold Open Access options since 2016. However, it is critical that these efforts take place within a framework that respects intellectual property rights and our ability to invest in high-quality publications and that it does not hinder researchers.

As you are aware, federal agencies currently require that peer-reviewed manuscripts be made freely available online—within one year of publication—if they discuss research funded at least in part by a government grant.¹ This policy represents a significant compromise that balances our shared goals of providing broad access with the need for our organization to recoup the substantial investments we make in mentoring of early-career scientists, training of editors, teaching reviewers, guiding authors, editing and quality control, managing and curating data,

¹These policies were developed pursuant to OSTP’s requirement that agencies “shall use a twelve-month post-publication embargo period as a guideline for making research papers publicly available . . .” See OSTP Memorandum on “Increasing Access to the Results of Federally Funded Scientific Research” (Feb. 22, 2013).

managing access to pre-prints, collecting and editing images/figures, and organizing and typesetting for online delivery of these published articles. This one-year compromise contrasts with the length of a full copyright term of ‘life-of-the-author plus 70 years. Removing the one-year embargo would shift the burden of publication costs from the publisher to the author, who would be required to pay the higher fees associated with open access. Importantly, the current one-year embargo compromise reflects Congress’ guidance (in the authorizing legislation for the current policy) that the Administration must “take into consideration the role that scientific publishers play in the peer review process in ensuring the integrity of the record of scientific research, including the investments and added value that they make.”²

Reducing or eliminating the current one-year embargo would significantly jeopardize our organization’s ability to invest in producing the high-quality peer-reviewed journals that our readers in the ecological and biological community rely on. In so doing, such a policy would contravene Congress’ clear guidance to take our role and investments into consideration. Furthermore, such a policy would directly result in a reduction in either the quantity or quality (or more likely, both) of peer-reviewed journal articles produced by hundreds of organizations like ours. This change would also harm both the research enterprise and the practitioners, independent consultants, nonprofit/NGO staff, government regulators/administrators, public policymakers, students, and post-docs responsible for the scholarly journals we produce.

ESA respectfully urges you not to disrupt our ability to support the advancement of ecological science, and we look forward to working together to identify solutions that advance the goals of open science without undermining the communication of research findings and analyses through peer-reviewed journals.

Thank you again for the opportunity to submit these comments.

Sincerely,

Oswaldo Sala
President

² America COMPETES Reauthorization Act of 2010, Section 103(b)(9), *available at*: <https://www.congress.gov/111/plaws/publ358/PLAW-111publ358.pdf>.

4 May 2020

BY ELECTRONIC SUBMISSION

Dr. Kelvin K. Droegemeier
Director, Office of Science and Technology Policy
Eisenhower Executive Office Building
1650 Pennsylvania Avenue, NW
Washington, DC 20504

Response to OSTP Request for Information – FR Doc. 2020-06622 – “Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research”

Dear Dr. Droegemeier,

The American Institute of Aeronautics and Astronautics (AIAA) is grateful for the opportunity to respond to this request for information. In particular, we write to caution the Office of Science and Technology Policy (OSTP) against adopting a policy mandating the free distribution of peer-reviewed manuscripts earlier than one year after publication.

AIAA—the world’s largest aerospace technical society—brings together industry, academia, and government to advance engineering and science in aviation, space, and defense. Since the dawn of aviation and through the advent of the space age, the United States has been the world leader in aerospace technologies. The Federal Government has played an important role in supporting research and development efforts by academia, industry, and government labs leading to a myriad of scientific discoveries and innovations. In 2018 alone, the aerospace and defense industry received \$105.9 billion from the Federal Government for research and development.¹

AIAA has earned an international reputation as the preeminent publisher of cutting-edge aerospace journals and books, and as the leading source of aerospace industry archives, dating back to the early 1930s. Our archives represent current and past AIAA publications and those of our predecessor organizations, including over 300 books and almost 200,000 technical articles. AIAA’s current technical journals feature original papers that span the spectrum of aerospace science and technology. Fully accessible online, the journals reflect the best output of U.S. investment and leadership in aeronautics and astronautics research and support the work of professionals in industry, academia, and government, including students who will be the future leaders in aerospace.

AIAA’s mission has always been to support the progress of science by producing and broadly disseminating the highest quality peer-reviewed journals possible. It is critical that these efforts take place within a framework that respects intellectual property rights and our ability to invest in high-quality publications, and that does not hinder all researchers, including those without Federal funding, from communicating their discoveries.

¹ 2019 Facts and Figures U.S. Aerospace and Defense, Aerospace Industries Association, *available at*: <https://www.aia-aerospace.org/2019-facts-and-figures/>.

Pursuant to the 22 February 2013 OSTP Memorandum “Increasing Access to the Results of Federally Funded Scientific Research,” Federal agencies currently require that peer-reviewed manuscripts be made freely available online—within one year of publication—if they discuss research funded at least in part by a government grant. This policy represents a significant compromise that balances our shared goals of providing broad access with the need for our organization to recoup the substantial investments we make in the peer-review process and in editing, publication, distribution, and long-term stewardship of these articles. This one-year compromise reflects the position of Congress in the 2010 America COMPETES Reauthorization Act that the Administration must “take into consideration the role that scientific publishers play in the peer-review process in ensuring the integrity of the record of scientific research, including the investments and added value that they make.” (Sec. 103(b)(9))

The aerospace and defense industry is critical to our nation’s well-being, providing major contributions to education, our economic prosperity, our national defense and homeland security, and our quality of life. Although the research efforts we report on do not directly support the response to the COVID-19 pandemic, the investments we have made in our infrastructure and the relationships we have with our customers have permitted us to quickly deliver content to researchers working from home or otherwise unable to access our archives through institutional subscriptions during this crisis. This broadening of access extends to university libraries, professors, and students who are struggling to teach and learn remotely, none of which would be possible without our careful use of subscription revenue to make our content searchable and accessible to those who need it.

As a member of CHORUS, AIAA has supported the OSTP’s call for public access and we have trusted that our investment in producing the high-quality peer-reviewed journals that our readers in the aerospace community rely on will not be significantly jeopardized by the current one-year embargo. AIAA has worked hard to educate our authors on their obligations to properly archive their work to ensure public access. We have invested in mechanisms to capture funding data to more easily track the final results of work supported by Federal research dollars as reported in our journals, we offer voluntary open access for published journal articles, and we have liberal sharing and reuse policies for everything we publish. Based on the limited data we have available so far, however, evidence suggests that requiring articles to be freely available immediately upon publication in a journal would directly result in a reduction in either the quantity or quality (or more likely, both) of peer-reviewed journal articles produced by hundreds of organizations like ours.

With regard to the OSTP’s interest in ensuring broad public access to the peer-reviewed scholarly publications, data, and code that result from federally funded scientific research, we have responded to the following questions posed in the RFI:

- 1. What current limitations exist to the effective communication of research outputs (publications, data, and code) and how might communications evolve to accelerate public access while advancing the quality of scientific research? What are the barriers to and opportunities for change?**

Educating and aiding researchers in data collection and computer code documentation methods remains a barrier in fully communicating research output; curating and organizing this information for immediate and long-term use is essential to ensuring that research results are provided in proper context and also guarantees replicability of results over the long term. This worthy effort requires support and investment from all sectors of society in concert, delivering data in proper context, promoting accessibility and usability, and ensuring data are archived and copyright protected for the benefit of all. Public access to data will not happen without overcoming current technological challenges to build the necessary infrastructure, and before authors and publishers are burdened with further mandates or restrictions the best way to move forward is for Federal agencies to complete their work in creating data management plans, as required by the 22 February 2013 OSTP public access memo.

2. What more can Federal agencies do to make tax-payer funded research results, including peer-reviewed author manuscripts, data, and code funded by the Federal Government, freely and publicly accessible in a way that minimizes delay, maximizes access, and enhances usability? How can the Federal Government engage with other sectors to achieve these goals?

Delays to access to federally funded research results currently are minimal, and therefore the return on investments made by the Federal Government to further improve essential access will be minor, if effective at all, and certainly will strain the current system. The long-standing research and scholarly publishing ecosystem effectively facilitates access to preliminary results in an orderly way and no new ideas or breakthroughs are being hidden from the scientific community. As the Government Accountability Office noted in their November 2019 report titled “Additional Actions Needed to Improve Public Access to Research Results,” there are some Federal agencies that have not yet fully implemented some aspects of their public access plans. As noted above, AIAA suggests that the best way for the Federal Government to engage with other sectors will be for these remaining agencies to fully comply with the 22 February 2013 OSTP memo before any further changes are recommended.

3. How would American science leadership and American competitiveness benefit from immediate access to these resources? What are potential challenges and effective approaches for overcoming them? Analyses that weigh the trade-offs of different approaches and models, especially those that provide data, will be particularly helpful.

Publishers have always been at the forefront of innovation, constantly improving access to information for the benefit of society; rushing to change the scholarly publishing ecosystem threatens to significantly damage the U.S. segment of the global publishing industry that resides in nonprofit societies. American science leadership and aerospace scientists and engineers currently have access to all necessary research results, federally funded and otherwise; there is little additional benefit to be derived from immediate access to resources by the general public at large. American competitiveness in space, returning to the moon or investing in a mission to Mars for the purposes of furthering scientific discovery and potential commercial gain, for example, is not improved by providing free access to uncurated research results and data delivered without the context that is derived from publication in a journal. In fact, Federal dollars spent in an effort to do so likely could be better spent elsewhere.

In closing, we urge you not to disrupt our ability to support the advancement of research in science and technology and the aerospace field. We look forward to working together to identify solutions that advance the goals of open science without undermining the effective communication of research findings and analyses through peer-reviewed journals.

Thank you again for the opportunity to submit these comments.

Sincerely,

A handwritten signature in black ink, appearing to read "Dan Dumbacher". The signature is written in a cursive style with a large initial "D".

Dan Dumbacher
AIAA Executive Director

May 4th, 2020

Dear Drs. Droegemeier and Nichols,

We write in response to the recent OSTP Request for Information. We thank you for inviting us to the consultation sessions on February 28th and April 30th and for your continued engagement with stakeholders.

Oxford University Press (OUP) is the world's largest university press, publishing 440 peer-reviewed journals for 236 research societies. As a not-for-profit part of the University of Oxford, with over 500 years of publishing experience, OUP is a mission-based organization. Our mission to further excellence in research, scholarship, and education by publishing worldwide informs the choices we make and the services we offer. We focus on the dissemination of the highest quality research, research that makes a difference to scientific and medical outcomes. OUP is committed to open access (OA) publishing and we began our own OA program as early as 2004. Ensuring content is available to those that need it is fundamental to what we do. We are consistently working with stakeholders across the research community to find ways to advance all research and education and to drive scientific advances and innovation.

We believe that we are on a path toward "open" as the default position for scientific research outputs including publications, data, code, and methods. We wish to express our strong support for the OSTP's efforts to drive progress in the communication and availability of research results, and stand ready to offer our assistance, data, and experience to help generate sustainable policies that further access to information.

Access to Publications

There is no doubt of the potential benefits from making scholarly content freely available as soon as is possible and OUP is committed to this goal. OA is the fastest growing area in scholarly publishing and a critical route to achieving this objective. However, this is a case of evolution, and it is necessary to transition models over time to allow the movement and reallocation of existing resources, particularly to maintain support for the important work done by not-for-profits and research societies. We believe the OSTP and Federal agencies can play a key role in supporting this shift and more broadly helping the US scientific information economy transition to an open model.

Before we posit some potential solutions, as requested in your RFI, we present the following challenges associated with our industry's move toward OA from the perspective of the not-for-profit publishing community:

- OUP's publishing program is based on high levels of rigor and quality. Our research society partners are stewards of their fields, setting community standards for care and accuracy in the research they present. Achieving this requires high levels of intervention and investment in rigorous editorial review and significant improvements to submitted content. Researchers and their research benefit from the efforts high quality journals dedicate to peer review, statistical analysis, and the overall improvement in the delivery of research results. Trust in what we read is implicitly important and we cannot underestimate the value (and cost) of this

work. In this context it is important to note that currently accepted Article Processing Charges (APCs) for OA publishing create a financial disadvantage for selective journals because they do not cover the costs of rejected papers. The C-19 pandemic provides a pertinent case study. During the pandemic it is more important than ever that research is fully vetted, can be trusted and advances the agenda at hand. For example, submissions for *Clinical Infectious Diseases*, a journal of the Infectious Diseases Society of America (IDSA) have more than doubled in the first quarter of this year. Their paid and medically qualified editorial staff have handled more than 3,000 papers year to date. Given the early nature of research on C-19 many of the submissions the journal is receiving do not meet the research standards associated with the journal. Consequently, in this same period the number of accepted papers has only marginally increased – this would mean double the work for the same level of output and revenue in an APC model.

- APC-based Gold OA publishing is only available to those who can pay and availability of funding can vary by discipline, researcher career stage, institution, and location. Unlike the central management of funds within a library system for subscriptions, there's currently no established model to help determine how to distribute OA funds. This is particularly concerning as we continue to operate in a mixed subscription and OA model. We need to ensure that we not only focus on helping authors utilize the funding available to them, but also find solutions to help support those without funding. It is also important to recognize the potential for increasing costs for research intensive institutions and to ensure there are models in place to fairly reallocate funding to support the critical science produced by these organizations.
- The complexity of transitioning a mixed subscription and OA model and the challenges of transitioning to OA are exceptionally difficult for small independent publishers and research societies. This year alone we are aware of journals publishing around 3,500 high quality papers a year moving from US-based self-published society management to European commercial publishers. A less diverse market means a more fragile market, and less competition, potentially leading to higher prices for researchers and funders. We are deeply concerned that the market is increasingly dominated by commercial publishers who focus on profit rather than the societal benefits of research and the health of the research community.

Society Publishing

We are particularly concerned that the introduction of a policy too rapidly could cause irreparable damage to research societies. OUP published over 8,400 papers acknowledging US Federal agency funding in 2019, constituting approximately a fifth of our article output. Only 22% of these authors chose to pay an APC to publish OA. The costs for the remaining 78% of articles are covered by subscriptions (many of them international) under the current model. For all of these authors to publish OA instead at current APC levels, an additional \$25M per annum in author spend would be necessary. A third of the journals that we publish on behalf of US research societies, particularly those highly selective journals that make the most significant US science available to the world, would see their revenues fall by half under an OA model (at current APCs), imperiling high quality, rigorous peer review and selection processes. Simply put, current APC levels cannot support the cost structure for high quality journals. With the existing diverse range of revenue streams supporting journals, we have been able to offer an APC option and sustain the financial returns our society partners depend upon. Too rapid a move to an entirely Gold model would be devastating financially to much of the not-for-profit publishing community.

We believe societies have a key role to play in helping to support and develop the research and science of the future in the US. The societies with whom we publish focus on the core values of research, education, and community. In many cases the journals they publish and the associated revenue not only cover costs and ensure continued delivery of high-quality research, but also enable essential work to be carried out in US research communities. Some examples from key US societies demonstrating just some of the ways in which they make a difference:

- The Infectious Diseases Society of America is able to continually iterate its Guidelines on C-19 treatment which are freely available to the medical community and broader public.
- American Institute of Biological Sciences (AIBS) commissions science journalists to investigate and report on emerging issues in the biological sciences, articles which are edited by journal staff and help shape the direction for future scholarship. This work requires significant investment in order to strengthen US competitiveness in the biological sciences.
- The International Society for Human and Animal Mycology (ISHAM) uses funds earned from publishing to further patient care and training. For example the President-Elect, John Perfect, MD (Duke University) is leading a project to develop an e-learning module on the clinical management of patients.
- The American Society of Health-Systems Pharmacy (ASHP) provides significant support for the ASHP Research and Education Foundation, which funds health services research that focuses on the safe and effective use of medications including those being evaluated for the treatment of the C-19.
- The Crohn's and Colitis Foundation supports post-doctoral fellows to advance their research careers in basic and/or preclinical investigation into inflammatory bowel disease. Funds received in 2019 from the Foundation's journals enabled nearly seven Research Fellowship awards.

As a mission driven organization, OUP shares the same values as our society partners and also directly supports the academic community through reinvestment; around 60% of the revenue we generate from our journal program is returned to our society partners. Our own modest surplus is reinvested in the continuous innovation needed to ensure our content is widely available and into the academy. OUP funds projects such as the Oxford English Dictionary, our parent university which is at the forefront of international C-19 research, and multiple scholarship funds. We urge the OSTP to consider the unintended consequences of policy directives with a view to ensuring the continuation of sustainable business models for not-for-profit publishers.

Suggested Actions

We encourage the OSTP to consider the following actions that will enable a transition to OA for research publications while supporting the high levels of curatorship required to support the advancement of science:

Policy

- Extend the current policy to require the Version of Record of funded papers be made publicly available. Requiring this will provide researchers with the highest quality research materials and the assurance they can trust that they have the definitive version of a paper. This has the potential to save significant funding and effort by Federal repositories ([it is estimated that 70% of PubMed Central's budget](#) goes toward converting Accepted Manuscript versions of papers to a more usable form).
- Require deposition of preprint versions of funded publications. This would offer immediate access to research results – results others can start to test and iterate on. As has been evident in the issues around some preprints relating to C-19, there is an urgent need for standards on what constitutes a preprint and what constitutes an acceptable archive solution. Standards for assigning persistent identifiers, associating preprints with the final published Version of Record, and effective and standardized mechanisms for communicating to the press and general public that the work is considered preliminary are needed.

Funding

- Support the idea of diverse APC levels that reflect the value added to research through a journal's editorial process. This will help ensure sustainability for titles that are highly selective and which focus on publishing novel science which in turn drives scientific advances.
- Research and test the concept of funding submission fees to help spread the costs for journals with high rejection rates and to discourage authors from submitting poor quality research to those journals.
- Ensure sufficient funding is available to support APC payments to mitigate the risk of undermining the viability of the many not-for-profit and society organizations.

Transformation

- Work with stakeholders to develop models and infrastructure that enable consistent and manageable models for read/publish or “transformative” deals.
- Incrementally stage the requirement for funded content to be made immediately available to enable a smooth transition.

Public Access to Data and Code

OUP strongly advocates for the public availability of research data and code, and offers our support to OSTP policies that can help drive these practices. OUP has implemented a data policy framework to support every journal within our portfolio in facilitating data sharing for authors. Federal policy could play a role in not only endorsing best practice but also engaging with researchers and developing incentives for adhering to open science practices in the dissemination of their research. Author behavior will play a significant role in achieving the goal of maximizing access, minimizing delay, and enhancing usability.

We encourage the OSTP to engage with key stakeholders, including researchers, learned societies, publishers, and repositories to develop requirements for funded authors to make data and code publicly available by:

- Developing and promoting FAIR standards for preparing and sharing data and code, taking into account discipline-specific practices – research societies are ideally placed to help Federal agencies create relevant field-specific standards for data-types.
- Reviewing the current infrastructure for data and code sharing, including the availability of expert curation staff.
- Assessing requirements for building capacity among the research community for effective data and code sharing.
- Enable robust linking between research publications and the data and code they describe, as well as establishing best practice for data and software citation.
- Ensuring that Federal agencies recognize data and code as valid research outputs and offer incentives for their production.

Conclusion

OUP is committed to OA publishing as evidenced through our actions as a publisher. We have a history of expanding our OA publications by flipping journals to OA and encouraging our society partners to offer OA options for their authors – approximately 23% of OUP content is already OA. OUP has also concluded ten transformative agreements across the US, Europe, Asia and the Middle East and voluntarily makes [a larger percentage of our subscription content freely available](#) than any of the other top twenty scholarly publishers. Such activities are possible because of sustainable underlying business models as we transition our publishing program to OA. Our industry has evolved over many years and relies on diverse revenue streams that support different content types. Requiring the close to 20% of our content which acknowledges US Federal agency funding to publish immediately under an OA model would have a disruptive impact on the revenues both OUP and our society partners depend upon to help further science. We need to make this transition a carefully managed process, and avoid sudden changes to the scholarly communications ecosystem which would cause an imbalance and undermine journal sustainability, and OUP's ability to share content as widely as possible.

We wish to stress the vital role in scientific progress played by research societies. It is important that research societies remain independently sustainable. We believe that thoughtful and effective policies from the OSTP can allow societies, as well as the not-for-profit sector to thrive and we offer our support to the OSTP in helping drive such policies.

Sincerely,

Alison Denby, Vice President Journals, Oxford University Press



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Oakland, CA 94607-5200
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<http://www.ucop.edu>

May 6, 2020

Dr. Lisa Nichols
Assistant Director for Academic Engagement
Office of Science and Technology Policy
Submitted via email: OpenScience@ostp.eop.gov

RE: Docket ID [OSTP-2020-0004](#) Request for Information: Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research (RFI Response: Public Access)

Dear Dr. Nichols:

I am pleased to support and submit the below statement that has been developed by the University Committee on Library and Scholarly Communications (UCOLASC) and endorsed by the University of California Academic Council:

Open access is a widely-held value at the University of California (UC) and particularly among Academic Senate members, as evidenced by the [2013 Academic Senate Open Access Policy](#) and the Academic Council's endorsement of [Declaration of Rights and Principles to Transform Scholarly Communication](#). Moreover, faculty direct the system's open access initiatives in partnership with the University Libraries, and are critical leaders of UC's pursuit of open access transformation.

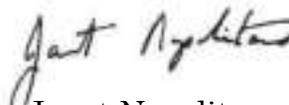
With respect to the OSTP Request for Information, the UC Academic Senate supports a zero-embargo policy for author-accepted manuscripts. The Academic Senate also affirms that such a policy represents a measured step forward, in alignment with UC's mission to serve society and provide long-term benefits through the transmission of research and knowledge. UC faculty are steadfast in their support of scholarly societies, but at the same time somewhat disappointed with societies' slow response to embrace open access transition to zero-embargoed publications. To transform scholarly publishing at scale requires the community to transition away from subscription-based publishing models and towards open access; a zero-embargo policy will motivate apathetic publishers to engage, in a serious way, the creation of sustainable and open scholarly publishing models. Key partners, including the University Libraries, are committed to supporting societies in the scholarly communication transformation, while UC faculty endorse and are prepared to actively shape such efforts.

Dr. Lisa Nichols
May 6, 2020
Page 2

In addition to the statement, please find enclosed a letter from University of California Vice President for Research and Innovation Theresa A. Maldonado, Ph.D., P.E., providing UC's comments in response to the Office of Science and Technology Policy (OSTP) request for information on Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research.

I ask you to take the UC faculty statement on the zero embargo policy and the comments included in Dr. Maldonado's letter into consideration in response to the Request for Information and as you work to finalize the policy.

Yours very truly,



Janet Napolitano
President

Attachment

cc: Academic Senate Chair Kum-Kum Bhavnani
Vice President Theresa Maldonado



OFFICE OF THE VICE PRESIDENT - RESEARCH AND INNOVATION

OFFICE OF THE PRESIDENT
1111 Franklin Street, 11th Floor
Oakland, California 94607-5200

April 13, 2020

Dr. Lisa Nichols
Assistant Director for Academic Engagement
Office of Science and Technology Policy
Submitted via email: OpenScience@ostp.eop.gov

RE: Docket ID [OSTP-2020-0004](#) Request for Information: Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research (RFI Response: Public Access)

Dear Dr. Nichols:

I write on behalf of the University of California (UC) system with regard to the Request for Information (RFI): Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research, issued on February 19, 2020.

The UC system is comprised of ten research-intensive campuses, six medical schools and three affiliated U.S. Department of Energy national laboratories. As a public institution and the nation's largest academic recipient of federal research funds, having received more than \$2.95 billion in 2018, UC believes that publicly funded research should be made available freely and immediately upon publication. Unfortunately, the current academic publishing landscape typically results in such taxpayer-funded research being paywalled behind costly subscription models; this should not be the case.

In response to this RFI, the UC system unequivocally recommends a zero-embargo policy for peer-reviewed author accepted manuscripts resulting from federally funded scientific research as a reasonable and considered step to minimize delay and maximize access to published research outputs. The data and code associated with federally funded research publications should also be made available to the public, where permissible, according to the [FAIR Principles](#), to support discovery, accessibility, reproducibility, interoperability and reuse. Our specific comments on the topics presented in the RFI notice are provided below.

The UC is committed to cultivating open research practices and values public and immediate access to scholarly publications, data and code. This systemwide commitment is demonstrated by the Academic Senate and Presidential [open access policies](#), the Faculty [Declaration of Rights and Principles to Transform Scholarly Communication](#) and [the university's work](#) to transition away from subscription-based scholarly communications towards sustainable, open access publishing

models. UC is also actively involved in the development of community-led open infrastructure for [data sharing](#) and [scholarly journal publishing](#) to further support open access to research results.

While UC will continue to support and further unfettered public access to its published research, we need the help of our federal partners. OSTP is optimally positioned to bring about a significant shift in the scholarly communications landscape by ensuring federally funded research is made available to all without delays or added costs to readers.

What current limitations exist to the effective communication of research outputs (publications, data, and code) and how might communications evolve to accelerate public access while advancing the quality of scientific research? What are the barriers to and opportunities for change?

The advancement of scientific research and industry is greatly impeded when access to the latest scholarly research is published behind a paywall or only publicly released after an embargo period. To fully embrace the potential of modern collaborative research, all stakeholders, be they policy makers, doctors, journalists, entrepreneurs, community welfare organizations, researchers or citizen scientists, need immediate access to published research results. Delays to the public availability of these results slow down discoveries that can benefit all citizens. Furthermore, research increasingly necessitates text and data mining to analyze large amounts of research results to identify patterns, trends and other findings through statistical analysis and machine learning. Such practice calls for content to be open rather than restrictively licensed.

Publishers and research institutions across the globe are already striking [open access agreements](#) and establishing new and innovative business models that support immediate dissemination of scholarly publications. UC has already signed four such transformative agreements, with the [Association for Computing Machinery \(ACM\)](#), [Cambridge University Press](#), [JMIR Publications](#) and the [Public Library of Science \(PLOS\)](#). Nevertheless, progress is slow; as of 2017, [less than 15%](#) of global research was immediately made available to the public upon publication. While many publishers see the transition to open access business models as an imperative in a rapidly transforming market, there are still others that wish to maintain the status quo (a subscription-based business model), which does not serve the public, industry or scientific research.

To advance scientific knowledge, the UC system asks OSTP to work across federal agencies and departments to enhance public access to government-funded research. UC urges OSTP to require federal funding agencies to implement a zero-day embargo period for access to peer-reviewed author accepted manuscripts resulting from federally funded scientific research.

In terms of access to underlying data necessary to validate research findings, data sharing policies, as of now, vary widely across funders and publishers, hindering the ability to verify findings or find new discoveries from federally funded datasets. UC recommends that OSTP work with federal funding agencies to standardize requirements for data sharing in accordance with the [FAIR Principles](#) and provide guidance on appropriate ways to maintain sensitive data. The access to and sharing of sensitive data is governed by a complex, fragmented set of ethical and legal requirements. Frameworks for accommodating these data, at scale, have not been developed. Guidance on appropriate ways to maintain sensitive data, including standards for uncontrolled

access, de-identification, and application of confidentiality policies, would decrease administrative burden on researchers and grantee institutions, and promote the goals of long-term data maintenance and accessibility in accordance with the FAIR Principles.

What more can Federal agencies do to make tax-payer funded research results, including peer-reviewed author manuscripts, data, and code funded by the Federal Government, freely and publicly accessible in a way that minimizes delay, maximizes access, and enhances usability? How can the Federal Government engage with other sectors to achieve these goals?

The Federal Government's existing outreach to and engagement with open science stakeholders, including higher education institutions, researchers, publishers and the public, is an important step in ensuring federally funded research results are made more readily available.

Scholarly societies are key leaders in the open access transformation of the scholarly publishing landscape and UC urges OSTP to engage them directly. Many societies are already working towards a full transition to open access; as noted, [ACM](#) recently struck a transformative agreement with UC as well as three other leading universities: Carnegie Mellon University, Massachusetts Institute of Technology and Iowa State University. Other societies are working with initiatives like [Transitioning Society Publications to OA](#), the [Society Publishers Coalition](#) and [Subscribe to Open](#), which all support society adoption of open access business models.

As noted, UC strongly recommends a zero-embargo policy for peer-reviewed author accepted manuscripts resulting from federally funded scientific research. This recommendation is broadly accepted in the U.S., as evidenced by the outpour of support in recent months, including from [21 Nobel Prize award-winning scientists and scholars](#) and the [Open Research Funders Group](#), a partnership of 16 philanthropies (including the Arcadia Foundation, Alfred P. Sloan Foundation, Bill & Melinda Gates Foundation, Gordon and Betty Moore Foundation and other) with combined assets of more than \$100 billion.

To ensure the success of any such public access policy, there must also be consistency of requirements and mandates. OSTP can play an important role in streamlining requirements across federal funding agencies. Researchers often hold grants from multiple agencies concurrently; therefore, uniform requirements and procedures regarding public access and deposit of peer-reviewed literature should be established across all funding agencies. Uniformity of deposit requirements will reduce the complexity and cost while at the same time increasing the rate of compliance.

In addition, and as reflected in the FAIR Principles, metadata associated with these articles should be viewed as a means for enabling specific actions to facilitate use, reuse and analysis of published work, rather than simply an item description. Metadata should be machine-readable, machine-interoperable and support the proper context for published resources.

Further, it is critical that federal agencies continue to fund publishing. As noted, UC is pursuing transformative agreements under which final, published versions of articles are immediately available upon publication directly through the publisher. While UC is transitioning its

subscription funding towards these agreements, our model also calls on authors to contribute grant funding. Federal funders currently support the use of grants towards publishing charges; UC asks that this support continue and that funders prominently and consistently remind grantees to consider their publishing needs when finalizing their budgets. As a further step, federal funders could directly pay institutions for supporting open access publishing costs through increasing institutions' ability to recover indirect costs. The current 26% cap on indirect cost recovery constrains universities' ability to pay for the infrastructure and additional resources necessary to ensure public access to research results.

How would American science leadership and American competitiveness benefit from immediate access to these resources? What are potential challenges and effective approaches for overcoming them? Analyses that weigh the trade-offs of different approaches and models, especially those that provide data, will be particularly helpful.

Immediate public access to scholarly publications, data and code accelerates innovation and the creation of new knowledge in ways unmatched by subscription-based publishing models, where public access to knowledge is paywalled or significantly delayed. This is evident in the scientific community's response to the coronavirus "with unprecedented speed and openness" and the devastating public health costs of locking important Ebola virus research behind a paywall. See, for example:

- "[Coronavirus and Ebola: could open access medical research find a cure?](#)" The Guardian
- "[Scientists are unraveling the Chinese coronavirus with unprecedented speed and openness](#)" The Washington Post
- "[Yes, We Were Warned About Ebola](#)" The New York Times

Aside from public health, federally funded research contributes to advancements across all sectors of the U.S. economy that drive innovations in information technology, energy and agricultural products.¹ Delaying access to federally funded research slows progress, putting American innovators at a disadvantage because they are limited to research results that are available to them rather than that which is most relevant. An open access policy with a zero-embargo period would empower startup ventures and businesses to deploy new technologies at pace with novel ideas. Not to mention, such a policy allows more users to stay abreast of new knowledge, ensuring that U.S. higher education institutions provide the best possible education to all students and training to scientists. At present, not even well-funded institutions can afford to subscribe to all of the journals required to meet their campus needs.

The pursuit of open access does not require one business model or approach; this is the foundational belief underlying the UC Libraries 2018 [Pathways to Open Access](#) report. UC has found that different approaches and strategies for advancing open access are not only more productive in facilitating the open access transition, but they mutually reinforce each other. At the heart of the matter, a zero-embargo policy for federally funded research is a critical component of the broader collective effort to make research results openly accessible. Such a policy supports

¹ Singer, Peter L. "Federally supported innovations: 22 examples of major technology advances that stem from federal research support." ITIF, February (2014). Accessed online: <http://www2.itif.org/2014-federally-supported-innovations.pdf>

both the pursuit of “green” open access through deposit of research outputs in open repositories, and “gold” open access facilitated through a publisher. UC supports both approaches.

Any additional information that might be considered for Federal policies related to public access to peer-reviewed author manuscripts, data, and code resulting from federally supported research.

Costs Related to Research Data Management and Sharing

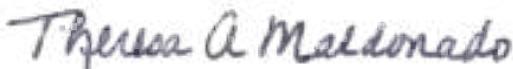
There are significant costs associated with long-term data management and sharing. Beyond curation and preservation costs, increasing data sharing activities often requires support from personnel outside of the traditional laboratory environment, including librarians and data scientists, to provide the necessary expertise and guidance needed to comply with a data sharing policy and build good data management practices into an investigator’s research process. UC strongly urges OSTP to work across federal funding agencies to allow researchers to budget for long-term data curation and preservation costs as part of the allowable costs; or at a minimum clarify that grantee institutions may pre-pay from their awards these long-term costs. UC also recommends that if these long-term costs are not permitted on a grant-by-grant basis, that funding agencies offer additional supplemental funding to institutions to enable the use of broader network-level infrastructure for data management and storage.

Advancing the Public’s Knowledge of Scientific Resources

While embargos and paywalls are a hindrance to public access to research results, they are not the only barrier in the dissemination of scientific knowledge. Public awareness of these resources through various outreach platforms should be addressed by the federal government, to ensure that Americans are aware of the vast repositories of knowledge freely available to them.

Thank you for your consideration of these comments on behalf of the University of California. We look forward to continued engagement on this issue.

Sincerely,



Theresa A. Maldonado, Ph.D., P.E.
Vice President for Research & Innovation

May 6, 2020

Dr. Kelvin Droegemeier
Director, Office of Science and Technology Policy
Eisenhower Executive Office Building
1650 Pennsylvania Avenue, NW
Washington, DC 20504

RE: AAP Response to OSTP RFI Concerning “Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research,” FR Doc. 2020-06622

Dear Dr. Droegemeier:

The Association of American Publishers (AAP) represents the leading book, journal, and education publishers in the United States on matters of law and policy. We believe strongly in the role of publishing in a democratic society, and advocate for outcomes that incentivize the publication of creative expression, professional content, and learning solutions to the benefit of the public. As key contributors to the American economy and U.S. exports, publishers invest in valuable intellectual property that furthers the scientific progress and intellectual advancements that are at the core of the research enterprise.

AAP’s membership is diverse but united by the goal of disseminating knowledge, particularly in the realm of professional and scholarly publishing. From scientific societies to university presses to commercial publishers, our members collectively publish thousands of scholarly journals, covering nearly every academic and professional field in science, technology, medicine, social sciences, and the humanities. Publishers not only invest in content, but also in the tools by which to make it available, making billions of dollars in private-sector investments to produce high-quality articles and disseminate them to readers around the world. Dissemination of knowledge is the purpose of the publishing industry.

In fostering dissemination, publishers support open science and have been essential to its evolution by developing an ever-increasing array of open access and public access models in the marketplace, as well as tools to enhance the dissemination and impact of publications. Through these innovations, publishers are continuously creating options by which researchers can communicate their ideas and discoveries to the world, while also ensuring the accuracy and peer-review that are indispensable to the process.

The importance of the marketplace was highlighted earlier this year as publishers across the country took the initiative to implement policies that ensure immediate and widespread free access to a great diversity of high-quality journal articles and other materials pertaining to the COVID-19 outbreak. These leaders—who publish some of the most respected research journals in the world—were able to make this invaluable contribution to the global pandemic response because, and only because, they had invested in and produced the journals in the first place. This shows that the private sector performs a different role than government, and more precisely that the private publishing industry is an important government partner.

As OSTP considers its policy priorities, we urge you to take special care to avoid policies that would reduce incentives for publishers to invest in high-quality content or would curtail the growing number of innovative open access and public access business models that are currently being developed in the marketplace through new agreements between publishers and their customers. We are particularly concerned by recent discussions proposing to curtail the marketplace through government-mandated free distribution of peer-reviewed manuscripts earlier than twelve months after publication.

We also hope that OSTP will give equal consideration to the broad diversity amongst research fields, and the associated diversity in the means, needs, and preferences of authors who write peer-reviewed journal articles and readers who consume them. It would be bad policy to mandate a one-size-fits-all framework that would force all publishers into one business model that may work for some author and reader communities, but not for others. In particular, we urge OSTP not to pursue policies that would leave

authors no alternative other than to pay in order to publish their works in peer-reviewed journals, as would almost certainly occur if authors were required to make peer-reviewed manuscripts freely available earlier than twelve months after publication. This concern would be further exacerbated by insufficient funding for researchers to support open access publishing.

The success of America's federal grant programs is grounded in the understanding that government can only do so much. To truly harness the value of federal grant dollars, the government incentivizes the private sector to invest in and commercialize research outcomes, most notably through the Bayh-Dole Act, which this year celebrates 40 years of promoting American research and innovation. A key insight behind the success of the Bayh-Dole Act is that in order to maximize the return on government investment in research, private sector incentives and partnerships are a vital ingredient in bringing scientific discoveries and innovation to the public in the form of downstream, value-added products.

For publishers, copyright protection (rather than patent protection under Bayh-Dole) enables investment in high-quality peer-reviewed publications that discuss and analyze grant-funded research results. These publications exist as important downstream value-added products only because of the intellectual property incentives that enable hundreds of publishers across the country to make billions of dollars in private sector investments. Within this framework, since the very founding of our country, publishers have fostered the discovery and use of scientific advances to the benefit of the American public.

As OSTP continues to “explore opportunities to make the knowledge, information and data generated by federally funded research more readily accessible,” we encourage you to recognize the essential role of the American publishing industry as government partners and global innovators.

Thank you for the opportunity to respond to this RFI, and we look forward to further discussions.

Question 1: What current limitations exist to the effective communication of research outputs (publications, data, and code) and how might communications evolve to accelerate public access while advancing the quality of scientific research? What are the barriers to and opportunities for change?

When it comes to public access to research outputs, there is a significant difference between the current state of access to publications and the current state of access to data. With respect to the former, there are multiple ways for researchers and the public to immediately access any journal article—for example through subscriptions, inter-library loan, purchasing access to articles, and publisher or other publicly available websites where articles have been made freely available via publisher open access programs.

In most cases researchers and practitioners who need access to peer-reviewed articles do not need to personally purchase subscriptions; many have access through institutional subscriptions or membership in professional societies. Where these options are insufficient, researchers and practitioners—along with the general public—can freely access articles at thousands of libraries throughout the country.

Additionally, millions of peer-reviewed manuscripts are available for free online, either immediately upon publication or after a short embargo period. AAP's members have taken major steps to help make the federal government's public access policies—as mandated in the 2013 OSTP memorandum on “Increasing Access to the Results of Federally Funded Scientific Research” (the “OSTP Memo”)—a success for federal agencies and the public. Among other things, AAP's members have adjusted their publishing policies and are working with several agencies under the CHORUS partnership to facilitate access to journal articles that discuss federally funded research. But they have only been able to do this because the OSTP Memo includes safeguards and built-in flexibility designed to protect sustainable business models and the quality of published articles in the long term.¹

In short, AAP is not aware of any credible evidence that researchers, practitioners, or other consumers who need access to peer-reviewed journal articles suffer from meaningful lack of access. And this is not

¹ Among other things, the OSTP Memo notes that “publishers provide valuable services, including the coordination of peer review, that are essential for ensuring the high quality and integrity of many scholarly publications. It is critical that these services continue to be made available.”

surprising, given that distributing content in the marketplace—and thereby providing access to countless readers around the world—is the core mission of the publishing industry. Collectively, our members provide access to millions of articles through billions of downloads every year. And when access isn't available immediately for free, it is still available immediately through the marketplace for anyone who subscribes to or otherwise licenses the content, just as anyone can go online to purchase a book, movie, song, or other work.

Importantly, the same cannot be said for data. There are many instances where researchers and practitioners are not able to access specific research datasets in any way. Simply put, the data is not made accessible for public consumption, which can affect the quality of scientific research, particularly in instances where the data is necessary to replicate or otherwise test the rigor of scientific discoveries.

The problem exists even for data resulting directly from federally funded research, despite the OSTP Memo's requirement that "[t]o the extent feasible . . . digitally formatted scientific data resulting from unclassified research supported wholly or in part by Federal funding should be stored and publicly accessible to search, retrieve, and analyze." In fact, in its November 2019 report on "Additional Actions Needed to Improve Public Access to Research Results,"² the Government Accountability Office found that while all of the nineteen agencies it reviewed had identified repositories to support public access to *publications* discussing federally funded research, several agencies had not yet taken important steps to facilitate public access to *data* resulting from federally funded research.

Publishers are taking major steps to facilitate access to research data—including by working with specific research communities to develop standards for data sharing—and the publishing industry is eager to pursue new opportunities for incentives, education, and collaboration with partners to make research data more openly available where appropriate. In this context, it is also important to recognize that not all data is alike, and not every researcher is in the same position with regard to their ability to share data (for example, privacy concerns may limit data sharing in certain instances).

In summary, the lack of access to data represents both the most significant barrier and the most significant opportunity for change in the research space, and the publishing industry stands ready to work together with OSTP to identify and implement appropriate solutions.

Question 2: What more can Federal agencies do to make tax-payer funded research results, including peer-reviewed author manuscripts, data, and code funded by the Federal Government, freely and publicly accessible in a way that minimizes delay, maximizes access, and enhances usability? How can the Federal Government engage with other sectors to achieve these goals?

When examining options to make taxpayer-funded research results freely available to the public, it is essential to distinguish between research results that are obtained through funding by taxpayers—e.g. data collected through studies financed by federal grants—and downstream products that discuss or build upon taxpayer-funded research, but that are not themselves funded by taxpayers. This second category includes peer-reviewed articles reporting on and analyzing grant-funded research results, newspaper articles or other publications discussing such results, as well as hundreds of thousands of other downstream consumer products like automobiles, electronics, and healthcare products that benefit from and incorporate upstream federally funded research and data. Any policy proposals targeted at privately produced downstream products should carefully consider the private sector markets, investments, and incentives that enable the production and distribution of these products in the first place.

With respect to peer-reviewed journal articles, currently the vast majority of investment in the production, distribution, and long-term stewardship of these articles is supported by private marketplace transactions—chiefly copyright licenses—in the United States and hundreds of foreign countries. These transactions cover a wide range of open access, subscription, and blended agreements. Importantly, the marketplace is working very well—hundreds of American publishers vigorously compete with each other,

² United States Government Accountability Office Report to Congressional Requesters, *FEDERAL RESEARCH Additional Actions Needed to Improve Public Access to Research Results*, GAO-20-81 (November 2019), available at: <https://www.gao.gov/assets/710/702847.pdf>.

both on price and non-price terms, as they seek to innovate and improve their products and services in order to meet the evolving and diverse needs of their authors and readers. Collectively, publishers offer authors and readers a tremendous amount of choice—open access and otherwise—in how to publish and consume journal articles.

We must emphasize that publishing is not a broken marketplace in need of government intervention. On the contrary, the current publishing marketplace is a highly successful one for the United States, highlighted by innovative, competitive transactions and investments that produce the highest quality, largest quantity, and widest dissemination of peer-reviewed journal articles, including through open access agreements. OSTP should support this marketplace, avoiding intrusions such as government-mandated free distribution of articles earlier than twelve months after publication. Such regulatory intrusions would significantly disrupt scholarly communication by rendering irrelevant the copyright protection that lies at the heart of marketplace incentives, investments, and transactions that drive the economy. As a result, they would make private sector investment very difficult and would effectively amount to a decision to replace private sector investment with government funding, requiring billions of dollars in additional appropriations simply to maintain the current quantity and quality of research article output.

In this regard, AAP was deeply troubled by a recent suggestion that the government could replace the private sector and fund the peer review and publication of articles discussing federally funded research for approximately \$100 million dollars in additional government spending per year. Setting aside the significant concerns that arise from placing the government in the position of deciding how much money will be invested in peer review and publication of journal articles, \$100 million is not close to the sum that would actually be required. By way of comparison, private sector publishers currently invest many hundreds of millions—if not billions—of dollars per year in producing and disseminating these articles.³ Such a massive reduction in investment would substantially decrease the quality and quantity of peer-reviewed articles produced in the United States. It would also have serious negative implications for academic freedom, as the lack of investment would leave thousands of authors unable to publish their works unless they can find funding to underwrite the costs.

Instead of government mandates that risk significant market disruption, we urge OSTP to encourage increased free access to articles by supporting voluntary initiatives—coupled with dedicated appropriated funds—to enable more authors to participate in the many open access publishing options offered in the marketplace. In addition to avoiding marketplace disruption and allowing for continued private sector investment, this approach would also ensure that authors can publish their works regardless of whether they have access to funds to cover the costs.

Question 3: How would American science leadership and American competitiveness benefit from immediate access to these resources? What are potential challenges and effective approaches for overcoming them? Analyses that weigh the trade-offs of different approaches and models, especially those that provide data, will be particularly helpful.

Researchers, practitioners, and the public already enjoy immediate access to peer-reviewed articles, whether via marketplace transactions, free access through libraries, or in some instances free access on publisher websites and through public repositories. This immediate access is supported by marketplace mechanisms and intellectual property rights that enable ongoing private sector investments and that advance American science leadership and competitiveness.

Government-mandated immediate free online access, however, risks causing significant harm to American science leadership and competitiveness. There are many reasons for this, but due to the RFI's page limitations, we will only note three issues that warrant significant further consultation with concerned stakeholders both in government and in the private sector.

³ Estimates range from \$600 million to \$1.35 billion per year.

Hundreds of non-profit research organizations, along with Members of Congress, private companies, and trade associations across a range of industries and interests have expressed concerns that a policy of government-mandated immediate free access would: (1) directly and negatively impact American researchers, scientists, and medical professionals, as well as the quality of scientific and medical research publications produced in the U.S.; (2) undermine American intellectual property rights that are fundamental to promoting investment and innovation in science and medicine; and (3) directly and negatively impact the American economy, jobs, and thriving U.S. intellectual property exports.

Evidence of these concerns is plentiful. Senator Thom Tillis (R-NC, and Chairman of the Senate Judiciary Intellectual Property Subcommittee) recently explained that “OSTP’s proposal to require the free online distribution of copyrighted peer-reviewed manuscripts earlier than one year after publication is a mistake. Ignoring Congress’ guidance, this policy would undermine American copyright incentives and set a dangerous precedent for American intellectual property rights in private sector-produced downstream products that build upon federally funded research.”⁴ The Senator additionally expressed concern that OSTP’s proposed policy “would risk negative consequences [for] hundreds of thousands of American jobs.”⁵ Furthermore, the Senator noted that this policy “could diminish the high quality of scientific and other scholarly research in the United States,” and would “have a detrimental impact on the millions of American researchers, scientists, and medical professionals informed by these journals.”⁶

Eight Republican Members of Congress with a background in medicine noted that “such a policy would undermine American jobs, exports, innovation, and intellectual property resulting in scientific societies ceasing operations or no longer disseminating U.S.-sponsored science that is key to maintaining U.S. leadership in science and technology on the global stage.”⁷ Ten other Republican Members of Congress explained that “this overreach into an effective private marketplace within the American economy” would eliminate “billions of dollars of U.S. exports currently attributable to publishers” and would “threaten to upend the most trusted form of scientific communication . . . limiting the quality and quantity of peer-reviewed articles that are available to the very scientists they are intended to inspire, and threaten[ing] an untold number of great medical and scientific breakthroughs.”⁸

The Copyright Alliance stated that such a policy “would eviscerate the copyrights of journal publishers throughout the country,” further noting that “today the government eviscerates copyright protection for peer-reviewed journal articles. What’s next tomorrow? Works of art, iconic photographs, documentaries?”⁹ Furthermore, hundreds of medical and scientific societies, together with the U.S. Chamber of Commerce, the Software and Information Industry Association, and several other companies and associations have warned that such a policy “would significantly harm the system of peer-reviewed scholarly communication that fuels America’s leadership in research and innovation.”¹⁰

We thank OSTP for taking these concerns seriously as it moves forward in this process.

Respectfully submitted,



Matthew Barblan
Vice President, Public Policy
Association of American Publishers

⁴ April 17, 2020 letter from Senator Thom Tillis to Dr. Kelvin Droegemeier.

⁵ *Id.*

⁶ December 12, 2019 letter from Senator Thom Tillis to Secretary Wilbur Ross and Director Mick Mulvaney.

⁷ February 18, 2020 letter from eight United States Representatives to President Trump.

⁸ April 9, 2020 letter from ten United States Representatives to Acting Director Russell T. Vought.

⁹ February 18, 2020 letter from the Copyright Alliance to President Trump, *available at*: <https://copyrightalliance.org/wp-content/uploads/2020/03/CA-Letter-Opposing-Journal-EO-Feb-2020.pdf>.

¹⁰ December 18, 2019 letter from 140+ organizations to President Trump, *available at*: <https://presspage-production-content.s3.amazonaws.com/uploads/1508/lettertothe-president-from-140-research-and-publishing-org-2.pdf?10000>.

May 4, 2020

Lisa Nichols
Office of Science and Technology Policy
publicaccess@ostp.eop.gov

Re: RFI Response: Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research

Dear Dr. Nichols:

STM is fully committed to the common goal to promote sustainable Open Science. I appreciate the continued dialogue with OSTP and the Administration on how to best promote openness and sharing and I particularly appreciate OSTP's recognition that publishers are valued partners that make important contributions to the advancement of research.

The International Association of Scientific, Technical and Medical Publishers (STM) is the leading global trade association for academic and professional publishers. It has more than 150 members in 21 countries who each year collectively publish more than 66% of all journal articles and tens of thousands of monographs and reference works. The majority of its members are small businesses and not-for-profit organizations, that represent tens of thousands of publishing employees, editors, reviewers, authors and readers, and other professionals across the United States and the world. They comprise the bulk of a \$25 billion publishing industry that contributes significantly to the U.S. economy and enhances the U.S. balance of trade.

STM supports its members in their mission to advance research worldwide. As academic and professional publishers, learned societies, university presses, start-ups and established players, we work together to serve society by developing standards and technology to ensure research is of high quality, trustworthy and easy to access. It promotes the contribution that publishers make to innovation, openness and the sharing of knowledge and embrace change to support the growth and sustainability of the research ecosystem. As a common good, it provides data and analysis for all involved in the global activity of research, such as the [STM Report](#) series.

STM stands ready to work with OSTP, federal agencies, and others in the research community to expand on our efforts to make outputs "more readily accessible to students, clinicians, businesses, entrepreneurs, researchers, technologists, and the general public." The potential for working together to improve innovation and practice has been evident during the current global health crisis, as publishers worked with OSTP, NIH, and global health and research agencies to make articles related to COVID-19 available. At the same time, these articles only exist with high quality and integrity because of publisher investments in research communication. Publishers are also accelerating the review and dissemination of new research because of their ability to continue to invest. It is critical that the need for sustainable models of access that ensure the integrity and permanence of the scholarly record be addressed as we move towards a more open scholarly communication ecosystem, and that the Government allow a variety of means to achieve shared

goals.¹ As potential approaches are considered, the government should work with all communities to assess the positive and negative impacts before implementing them more widely.

Some of these concerns were previously raised in [my letter to Director Droegemeier](#), where I also indicated we would be pleased to work with OSTP to continue building a more open, cutting-edge vision for the future of scholarly communication and research, in coordination with all of those whose efforts and budgets underpin the scholarly communications ecosystem.

STM notes that the issues surrounding public access to research outputs are significant and differ widely between publications, data, and code. Due to the restriction on length for this RFI, STM has focused here on public access to publications. For comments on data, I refer you to our previous submissions on the topic to OSTP, NIH, and in response to the Federal Data Strategy, amongst others, as well as the [STM 2020 Research Data Year initiative](#), and welcome opportunities to expand on efforts to make data and code publicly available.

What current limitations exist to the effective communication of research outputs (publications, data, and code) and how might communications evolve to accelerate public access while advancing the quality of scientific research? What are the barriers to and opportunities for change?

Challenges to quality, integrity, replication and reproducibility continue to threaten effective scholarly communication. While the academic community is always focused on research quality and integrity, there are opportunities to improve these efforts further. Publishers serve an important role in validating and disseminating research outputs, and STM's members actively explore how to improve upon and develop new solutions.² These include supporting the pre-registration of research, investing in existing and new form of peer review and infrastructure, developing automated checks for research misconduct (e.g. image manipulation, plagiarism, etc), and more. There is potential to develop these initiatives further through wider collaboration across the scholarly community as well as a need for explicit incentives to encourage their use.

There are also opportunities to improve access through existing initiatives. Publishers have invested significantly in discoverability, search engine optimization, and other efforts to make sure that published articles can be found and used to advance scientific research. Initiatives such as [seamlessaccess.org](#), and [GetFTR](#) have been launched to accelerate access, and these could benefit from refinement and wider adoption. Many publishers are experimenting with, and investing in, tools to improve the dissemination of new forms of content, including video and interactive information, alongside efforts to promote the sharing of data (as through the STM 2020 Research Data Year) and code. These experiments need to be fostered and recognized.

As more content is made available, it will be important to use the opportunities offered by machine learning and artificial intelligence to aid with synthesis, to identify themes and trends, and so forth. Publishers have developed tools, services and platforms that support and enhance machine learning, but machine learning and artificial intelligence are not without their own specific challenges. Funding, incentives, and intellectual property concerns will all need to be addressed to ensure that these opportunities reach their full potential.

Current funding mechanisms pose significant limitations to the effective and immediate communication of research and the sharing of research outputs. Many stakeholders will need to be

¹ See our statements on options at <https://www.stm-assoc.org/policy-advocacy/access-open-science/>

² See greater detail in our response to the [NSTC JCORE RFI on the American Research Environment](#)

engaged to shift funding, and likely to expand the overall funding pool, in order to adapt and create systems that accelerate public access. For example, immediate open access publishing costs for all articles reporting on federally funded research have been estimated from \$600 million to \$1.35 billion per year, and there are additional costs for the preparation and curation of data and code. The work processes and funding flows that currently enable the communication of high quality validated and vetted outputs related to federally funded research will also need to be investigated, in order to find ways to provide dedicated funding; level the playing field for grantees regardless of career stage, institution or discipline; and enable unfunded researchers to contribute to the advancement of scholarship.

STM believes that with careful and collaborative consideration, solutions are possible. Scholarly communication is a fundamental part of the cycle of discovery and innovation, and a holistic view of these issues has the potential to reap dividends. Proceeding through pilots and targeted initiatives could ensure that we achieve the best outcomes without undermining the quality and integrity of the system upon which U.S. research excellence relies.

What more can Federal agencies do to make tax-payer funded research results, including peer-reviewed author manuscripts, data, and code funded by the Federal Government, freely and publicly accessible in a way that minimizes delay, maximizes access, and enhances usability? How can the Federal Government engage with other sectors to achieve these goals?

Scholarly publishers are excited to work with OSTP to experiment with new approaches to scientific communication. STM believes that well-designed pilots are the best way to collect evidence and assess the impacts on the cost and quality of scientific communication before policy changes are implemented. Pilots need to be designed and implemented collaboratively with inputs from researchers, institutions, publishers and agencies, in collaboration and coordination with aligned efforts such as the STM 2020 Research Data Year.

Where immediate access is desired, appropriate funding needs to be identified to support gold open access publishing, together with guidance for researchers to help them understand the benefits of this publication route, and to help them comply with policy. STM would welcome the opportunity to work with OSTP and federal agencies, together with others, to explore what economic and behavioral factors, including attitudes toward immediate open access models, may be contributing to a resistance toward greater adoption of gold open access.

STM notes that only about 1 in 5 NIH-funded researchers currently use available research funds to support publishing. Surveys indicate many researchers believe that supporting publishing is an inappropriate use of grant funding.³ We believe these and other questions could be fruitfully explored by agencies to find the best, evidence-based policy that “minimizes delay, maximizes access, and enhances usability.” As these approaches are considered, they need to be paired with an assessment of the full extent of impacts on the American research environment.

Exploration will show that rewards and incentives need to be restructured to encourage the broader sharing of materials related to federally funded research earlier in the research cycle.⁴ An entire open scholarship ecosystem is being developed – of which immediate access is just one part – that offers the potential to minimize delay in sharing findings, increase impact, and achieve public access goals. Publishers support and invest in this evolution of research practices, in order to

³ E.g. nearly 1 in 6 in the 2016 [Pay It Forward Report](#) and 1 in 5 in the 2019 [Taylor & Francis Researcher Survey](#)

⁴ Additional detail provided in our response to the [NSTC JCORE RFI on the American Research Environment](#)

advance transparency, rigor, efficiency and hence the overall quality of scholarship.

The Federal government has a role to support the development of these services and incentivize their use, by providing recognition for various open scholarship practices. These include, but are not limited to, the sharing of data, preregistration of studies, open research methods, the publication of negative results, and similar activities. There is a role for institutional incentives here, and also for Federal incentives in grant review, awards, and the like.

It is critical that the Federal government work to reduce complexity and streamline practices, by aligning policies in collaboration with key stakeholders.⁵ Alignment is necessary across Federal agencies, to reduce the administrative burden associated with working with multiple agencies. Alignment is also necessary between the Federal government and research sectors, on emerging standards and best practices. For example, federal agencies are already active in the Research Data Alliance, and should seek opportunities to collaborate and engage in industry and non-profit initiatives, including Scholix for linking research objects, the FAIR Data initiative, the STM 2020 Year of Research Data, and other similar initiatives.

How would American science leadership and American competitiveness benefit from immediate access to these resources? What are potential challenges and effective approaches for overcoming them? Analyses that weigh the trade-offs of different approaches and models, especially those that provide data, will be particularly helpful.

Immediate access provides an opportunity to showcase new products and services described by articles (e.g. new pharmaceuticals, economic stimulus). Ultimately, a more open research environment may speed up the advancement of science and academic research, facilitate increased collaboration and interdisciplinary research, and drive the innovation and discovery that solves pressing societal problems and improves the American economy.

However, it is critical that immediate access policies do not risk the quality and integrity of scholarly communication that is necessary to achieve those benefits. We have seen in the current global health crisis that the current system continues to support high quality research communication that can advance public health. Embargoed green open access options – supported by business models that allow publishers to invest in producing the final published articles – help populate repositories without undermining the quality and integrity of the system, and allow publishers to recoup the investments incurred in their creation. STM is concerned that lowering embargoes for public access mandates below the current 12-month compromise would slow momentum for open science by limiting author choice and the ability of publishers to provide the options that scholars require. Rather than introducing government regulation, STM recommends harnessing the innovative spirit of the research community and its partners in the research enterprise to ensure the desired outcome.

As many studies have shown, there are significant costs involved in ensuring the provision of immediate access – costs that could be far in excess of current levels. For example, the 2016 [Pay It Forward Report](#) showed that, to transition to open access, resources beyond those currently allocated to universities would be necessary.⁶ Other studies and reports have indicated that that

⁵ Additional detail provided in our response to the [NSTC JCORE RFI on the American Research Environment](#)

⁶ “[O]ur analysis confirmed that for larger research-intensive institutions, publication charges in a fully APC-based OA environment are likely to exceed current journals budgets alone. Additional funds available to the researcher, including grant funding, should be considered to “top off” the funds redirected from libraries.” (pp. 116-117).

scientific societies may not be able to make the transition to provide immediate access to all articles reporting on federally funded research. The costs of supporting open scholarship when it comes to data, code, and other practices are likely even larger.

Moreover, there are global and disciplinary differences in scholarly communication practices, both in the pace of research and its communication and in the available funding for supporting the communication of discoveries and stewardship of research outputs. There are also challenges with respect to intellectual property and proprietary interests. Policies that undermine the current system of scholarly communication by providing unreciprocated free access to US outputs may cause private sector researchers – or those of competitor nations – to strategically reduce sharing their practices or results, and unintentionally reduce the speed and communication of research.

A careful, evidence-based approach that engages stakeholders in solutions can address all of these challenges. The Federal government can help innovation to flourish, new models to emerge, and encourage new entrants by approaching these issues in an experimental and collaborative manner. STM believes that there are opportunities for public-private cooperation around specific “pilots” designed to test out new ideas, enhance cooperation between agencies and the private sector, collect data and feedback, and avoid unintended consequences. The costs of such initiatives could be managed through regular review and assessment.

Any additional information that might be considered for Federal policies related to public access to peer-reviewed author manuscripts, data, and code resulting from federally supported research.

In order to promote open scholarship, it will be crucial to provide the required support and training for researchers alongside necessary incentives. Topics for such education include methodological training, guidelines for responsible research and integrity, and the identification of best practices and appropriate venues for research outputs. STM notes that OSTP has taken some steps in this direction with the RFI on guidance for data repositories, and publishers are engaging as well. Some examples include [Think Check Submit](#) to help researchers choose appropriate venues for publishing, and support for [Sense about Science](#), which promotes peer review. Most publishers also have training programmes and resources for researchers. We would welcome further collaboration on these topics.

In addition, I refer you to STM’s response to the [NSTC JCORE RFI on the American Research Environment](#), which provides additional comments related to the questions in this RFI.

The issues that define the research enterprise are important and weighty, and publishers continue to be important contributors to moving the enterprise forward. STM and its members look forward to a long-term dialogue with OSTP and federal agencies to enhance scholarly communication and economic competitiveness and stand ready to work with you on collaborative solutions that serve the public and the research enterprise.

Sincerely,



Ian Moss
CEO

Response from Hindawi Ltd to US OSTP RFI:
Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From
Federally Funded Research
*(submitted by Dr Catriona J. MacCallum, Director of Open Science, Hindawi Ltd)**

Topic 1. A. Limitations and barriers to the effective communication of research outputs:

1. A hypercompetitive research culture that prioritises in-fashion research/science, individual status and novelty over collaboration, research integrity and reusability¹⁻⁸.
2. A system of research communication, where the policies, practices and the processes of communication themselves are neither evidence-based nor subject to independent scrutiny⁹.
3. An academic evaluation, reward and career structure based on a limited set of outputs (heavily focussed on publications and primarily journal articles) that does not reward transparency, rigour, collaboration and the sharing and reuse of a variety of research outputs (such as data, code, etc.)^{1,10-14}.
4. A legacy publishing system based on the ownership and control of research outputs (e.g via subscriptions), rather than on the creation of tools, products and services that maximise effective and reliable research communication in a globally networked digital age^{15,16}.
 - a. A publishing market where the reputation of researchers is linked to scholarly publishers based on specific journal brands, often using Journal Impact Factor as a proxy for quality of the individual research output, rather than the individual merits of the researchers¹⁷. As stated by DORA, Journal Impact Factor and other journal-level metrics do not necessarily reflect the quality of an individual's published research, the range of individual outputs and/or the contributions of researchers^{18,19}.
 - b. A system of peer review that introduces delays and bias in research and which is not open to independent scrutiny to test its effectiveness and integrity^{20,21}.
5. No coherent, sustainable, open and interoperable infrastructure to support the effective communication of the full range of research outputs²².
 - a. In particular, much of the data and metadata to support the connections between different research outputs is controlled by commercial companies and kept closed and often monetized. As the dependence on proprietary data providers grows, universities and research funders risk becoming completely reliant on a few large companies for critical evaluation and decision support²³.
6. A disparity in progress and motivation among different disciplines and institutions, among different actors and organisations, and among researchers at different stages of their career.
7. A lack of policy alignment across local, regional, national and international jurisdictions, and no clear legal or regulatory framework for public or private individuals or actors. This disadvantages researchers collaborating in different jurisdictions and slows progress among other actors.

A hypercompetitive research culture alongside an evaluation system that ranks both researchers and institutions on a very limited set of proxy metrics is perhaps the key barrier to the effective communication of research. The consequences include an unwillingness among

researchers to collaborate and share research outputs, a tendency for them to maximise the number of publications (salami slicing) and a culture in which cutting corners and selective reporting is acceptable if it ensures work is put in the most favourable light for publication^{5,7,24-26}. All of which can (and does) severely disadvantage effective communication of research outputs.

Furthermore, research integrity and ethics are not commonly part of the education or continuing development of researchers and are not used as part of research or researcher evaluation. Several expert reports and surveys have demonstrated a lack of awareness, support, training and leadership around research and publication ethics and integrity, in particular among researchers²⁷.

B: Opportunities for change

There are three opportunities for meaningful systemic change across all of scholarly communication, irrespective of discipline or jurisdiction.

1. **Cultural & Social:** to foster a practice and process of research and scholarship that fuels innovation, promotes integrity, fosters collaboration, shares failure, celebrates success and rewards a diversity of talent, skills and performance. Key to this are:
 - a. a wholesale change to the reward and tenure system to align the reputation and career progression of researchers, and the mission of publicly funded institutions with the processes, practices and outputs that best serve science and society. This is applicable to every discipline and includes both applied and fundamental research.
2. **Technological:** to create a truly open, reusable and interoperable infrastructure for scholarly communication that makes collaboration, dissemination and discovery as frictionless as possible²³ (see response to questions 2 and 3)
3. **Economic and legal :** to fundamentally shift the business relationships between scholarly publishers and the research community from a model based on ownership, control, and journal brands to one based on value-added services, collaborative partnerships, and community engagement (see response to question 3)

An effective research communication system must ensure that there is trust in the research processes, and in the reliability of published articles, data, code or other related outputs – including those that don't necessarily lend themselves to novelty or directly benefit personal status

For example, researchers, institutions and publishers have little incentive to publish null, negative and inconclusive results. This has created substantial and damaging publication bias across the entire research system^{28,29}. Publication bias and related issues is likely to exist in some form in all disciplines, including the arts, humanities and social sciences³⁰, but research into the prevalence of such bias and its consequences have largely been limited to clinical and preclinical disciplines.

Researchers need to be empowered by a reward system that encourages them to collaborate and share their work openly, to be creative, honest and transparent and to take responsible risks. They should not be stigmatised for failure nor penalised for the publication and sharing of null, negative or inconclusive results.

Topic 2: A. What More Federal agencies can do:

1. Ensure public access to research outputs:
 - a. Mandate that peer reviewed publications are made open access on publication without any embargo period.
 - b. Promote FAIR data principles and management³¹.
 - c. Ensure that data management plans lay out the expectations for sharing the data and code underlying any published work.
 - d. Mandate that all grantees include a Data Availability Statement in any publication³².
2. Change academic culture and reward:
 - a. Encourage the adoption and implementation of [DORA](#) at all US Institutions and across all federal funding agencies³³. Ensure there is also adherence to principles about the responsible use of metrics in research communication³⁴.
 - b. Work with publishers, data repositories and other service providers to enable article-data or article-code linking.
 - c. Require citations to data and software code, and ensure they are given at least the same level of reward and recognition that are given to publications.
 - d. Provide training and education at all stages of researchers' careers on open access and open science. This includes training for
 - i. skills associated with research integrity, research and publication ethics, data/code stewardship, management and reuse.
 - ii. using infrastructure and the artificial intelligence tools necessary to mine data and text at scale.
3. Support the development of a fully open infrastructure for research communication:
 - a. Support a model in which commercial players can develop and support open infrastructure using service-based business models that don't involve ownership of this infrastructure or create dependencies on any single provider.
 - b. Provide mechanisms of funding, including for the creation and stewardship of data by institutions and repositories.
 - c. Provide dedicated investment to sustain the maintenance and ongoing development of cybersafe infrastructures and services.
 - d. Research, develop and implement community agreed standards for different disciplines. Crucially, this involves
 - i. the support and widespread international adoption of community-based, community-governed persistent identifiers (PIDS), such as [ORCID IDs](#) to track trace and discover research outputs and the emergence of new disciplines, and to help fuel collaboration.
 - ii. Community-agreed, international metadata standards, where the metadata themselves are openly available for independent scrutiny to enable effective services and tools to be built upon them.
4. Create an economic, legal and policy framework for public access:
 - a. Adopt an evidence-based approach to policy making by supporting and funding research about research (meta-research) as a direct bridge to policy development (see for example: the US Center for Science of Science and Innovation (CSSI)³⁵,

the Meta-Research Innovation Center at Stanford (METRICS)³⁶, and the Research on Research Institute (RORI)³⁷.

- i. As for funded research projects and outputs, it is important to review and evaluate what policies work or not in different contexts.
 - ii. Monitor any unintended or negative consequences, either for the research community, or other actors and entities (public and private), and the communities and society that it serves.
 - iii. Apply the same principles of research integrity, reuse and access to policy development that there are for research practice and process. For example, policies should be available for independent scrutiny (e.g. peer review)
- b. Provide clear roles and rights for re-users and consumers of publicly funded research outputs, in particular consumers should not be excluded because of affordability.
 - c. Remove obstacles for low-to-middle income countries (LMICs) to contribute, reuse and collaborate, within community agreed standards.

Topic 2 B. Engagement of Federal Agencies with other Actors

Enabling open and FAIR access to research outputs entails active partnerships and collaboration among all sectors and disciplines, including the involvement of researchers, business and local communities as well as institutions, research funders, governments as well as citizens.

Importantly, if such a system is to be trusted and effective, it must also manage the needs and responsibilities of different stakeholders, communities and jurisdictions .

Such a multi-stakeholder environment can only function if there is a common understanding of the importance and value of enabling access to these outputs and a responsibility from all stakeholders in how that research is conducted, produced and shared openly and reliably.

At a minimum Federal agencies need to:

1. Align key research communication policies at a State and Federal level.
2. Work with research funding agencies in Europe, China, Africa, India and South America, and also via the United Nations to develop a global framework for and standards of access and reuse.
3. Work with publishers, repositories, and other service and infrastructure providers to develop new business models for open access, FAIR data and open infrastructure.
4. Work with Scholarly Societies and National Academies to develop codes of research integrity and principles of scholarship that are discipline-specific but aligned to community principles and common objectives.

Topic 3. Benefits and challenges for American leadership and competitiveness

Openness is a vital instrument which, when used responsibly, can fuel a faster, more effective, more reliable, more trustworthy, more equitable and more innovative research communication system. Openness in science has the potential to not only respond to the world's greatest practical challenges but to also benefit industry, technology, society and scholarly research

itself. If delays and barriers to creating, sharing, verifying and discovering research can be removed, we can not only respond more quickly and effectively to public health emergencies (such as COVID19) but we can also harness this collective knowledge to ensure that the US and other national economies benefit and the UN Sustainable Development Goals are achieved more quickly. This is an opportunity for all actors and organisations to contribute and benefit.

Hindawi Ltd is a case in point. We are a commercial, Open Access publisher that makes the content of all our journals openly and freely available. We are developing and implementing standards for open science, such as data sharing, and data and code linking and citation. We are strengthening our editorial and research integrity policies to enable reuse and discovery. We deposit all our metadata and make it publicly available via Crossref, including citations and abstracts. We are developing new services and tools, in particular an open source, end-to-end, publishing management platform called Phenom³⁸, and creating publishing partnerships to deliver these services to other publishers, such as Wiley, AAAS and Geo Science World, as well as for our own journals, at scale. We are doing this because openness allows us to innovate and gives us a commercial advantage, and because this is to the benefit, rather than at the expense, of science, society and the economy.

The US has an opportunity to take a global leadership position on the development of evidence-based policy and practice. This will only be achieved, however if done in parallel with the development of processes and practices that maximize both 1) the reliability and useability of research outputs and 2) opportunities for collaboration and co-creation, both nationally and internationally. These processes and practices require dedicated tools, technology, appropriate funding and services set within an interoperable infrastructure and a clear legal regulatory framework to permit different actors and entities, commercial and not-for-profit, to contribute and gain from the system. These include but are not limited to:

- i. Clear relevant evidence-based policies that aim to increase the availability and reuse of research outputs in a global competitive context (see also response B4 to Topic 2)**
- ii. A global interoperable infrastructure of tools, services, hardware and software (see also response B2 to Topic 1 and A3 to Topic 2)**
- iii. Clear regulatory frameworks to manage the interests of different stakeholders (see also response A4 to Topic 2)**
- iv. A transparent, competitive market**

It is in the interest of US markets and the US economy to ensure a transparent competitive market that enables private companies, including small and mid-size enterprises (SMEs), as well as publicly funded organisations such as universities and research performing organisations, to contribute and benefit from publicly accessible research outputs. This emerging market has not yet been fully exploited, because of the constraints of the existing research communication system (incl. non-Disclosure Agreements, multi-year contract terms, and privately negotiated prices for journal subscriptions), a perceived incompatibility with intellectual property rights (IPR) and competitiveness policies and because of conflicting internal financial and legal rules.

Topic 4. Additional information.

At the heart of a system that prioritises access, reliability and reuse of research outputs are the researchers themselves. To harness their skills and expertise, all of the above needs to be embedded within a research culture that motivates experimentation, sharing, trust and collaboration while ensuring there is space for individual creativity and exchange with society, as well as economic return. It must also facilitate equity of opportunity across the globe in how knowledge and expertise is contributed to this system, as well as how it is accessed, disseminated, discovered and reused.

**Note that this response was informed by discussions and writing contributions of Catriona J. MacCallum to the EU Open Science Policy Platform Final Report 'Progress on Open Science: Towards a Shared Research Knowledge System' led by the European Commission Directorate-General for Research and Innovation, which will be published later in May 2020*

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[END]

May 6, 2020

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1650 Pennsylvania Avenue, NW
Washington, DC 20504

Response to OSTP Request for Information – FR Doc. 2020-06622 – “Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research”

Dear Dr. Nichols,

SAGE Publishing is grateful to have the opportunity to respond to the above request for information.

In our response, we want to re-emphasize the main points that we made when we met you with other publishers in February:

- That the scholarly communication environment has been evolving fast over many years, with much of the change driven by innovations and investments that publishers have made.
- That while we believe that evolution must continue, and that funder and other government mandates can and should influence it, policymakers must be careful to assess, and if necessary be prepared to mitigate, any negative unintended consequences of any changes that are mandated, alongside accruing the intended benefits. In particular, as a leading publisher in the social and behavioral sciences, we are concerned that a mandate reducing the current 12-month embargo on free distribution of peer-reviewed manuscripts could cause considerable damage to these disciplines without mitigating policies.
- That SAGE, as we are sure other publishers are too, is open to participating in experiments that can improve the scholarly information system. We see opportunities in particular to improve data sharing, and the leadership of OSTP in this area, enabling publishers to collaborate without risking being accused of anti-competitive practices, would be very welcome.

SAGE Publishing is a US-owned and headquartered company, employing 700 staff in the United States. We are an independent business, still owned by our original founder

and are mission driven: our role is to support and promote education and research. We publish over 1,000 journals, both owned and on behalf of 390 societies across diverse disciplines like Medicine, Engineering, Behavioral and Social Science and Humanities. Ultimately, SAGE's ownership will transfer to a number of higher education institutions with its independence and mission focus guaranteed. This allows us to plan for the long term and it is from this background that this submission is made: we want to ensure that the scholarly communication system is effective and sustainable for the very long term, serving the needs of researchers, of their societies, and of the general public.

We would also like to note what publishers add to the publication process. Amongst many other efforts, we take in a manuscript in its raw state; manage the peer review process; format the accepted manuscript for publication, ensuring references are linked to their sources; make it available online in multiple formats and highly discoverable; deposit NIH funded papers in Pub Med Central and utilize CHORUS to enable access to articles that result from grants provided by other agencies; enable the publication of research data to be made openly available via Figshare at no additional cost to the author; guarantee the article's availability for the foreseeable future through a range of archiving strategies; and handle disputes and challenges that occur after publication, including, where necessary, withdrawing the article, to ensure the integrity of the academic record.

SAGE has been involved in open access (OA) publishing for many years – we were founding members of OASPA – and we see 'Gold' OA funded by Article Processing Charges (APCs) working well in disciplines where research is well-funded and money can be taken from research grants to fund publication output.

It should be noted though that Gold OA does change the distribution of costs from that existing under the subscription model, and that a significant expansion of Gold OA would further that change. Within the US, under Gold OA, research-intensive institutions bear the greater part of the costs of publication, while other institutions, freed from paying subscriptions, make savings. Similar changes of distributions occur at the nation state level: highly research productive nations like the US pay more for research dissemination and less research productive nations are beneficiaries. We are not here applying any value judgement to this fact; we just want to ensure that policymakers are aware of the financial consequences of a shift to Gold OA.

Where we see Gold OA to be more problematic is in disciplines which do not attract significant research funding: social and behavioral sciences, humanities, dentistry and nursing being examples we are particularly familiar with.

SAGE does publish through Gold OA models in these areas, via hybrid journals, and through our own dedicated open access mega journal *SAGE Open* dedicated to the social and behavioral sciences and humanities. However, the latter, with an article processing fee of \$800, is not financially viable.

It might seem that a mandate reducing the embargo for all federally funded articles should not impact disciplines without significant federal funding. However, a policy change like this cannot be considered in isolation.

One of the tools that currently enables broad dissemination of articles that are published under the subscription model is 'Green' OA. SAGE has very liberal Green OA policies that allow authors to share their accepted manuscript with colleagues, place it on personal websites, and to deposit it in institutional repositories. However, this is not a business model: to work it depends on ongoing subscription payments from libraries for access to the published version.

This model is already under pressure from libraries cancelling journal deals due to financial constraints, and from tools such as Unpaywall that help discover free-to-access versions of accepted manuscripts. Setting an expectation via federal policy of zero mandates for articles without any other compensating policies will place further pressure on libraries that could end up undermining the subscription model and hence easy access to content through Green OA. Gold OA would become the only viable option for publishers.

But a move to universal Gold OA would not just impact publishers and access to content.

Researchers in low funded areas would find new barriers to publication are created if they are unable to find funds to pay APCs for Gold OA. The policy change would risk swapping highly porous access walls that currently enable broad public access to knowledge for new and more impenetrable walls around the dissemination of knowledge.

It would also impact academic societies who in many cases depend on journal revenue. This impact is not just collateral damage: societies are central to the scholarly communication process and to the development of disciplines through research, and so this is an unintended consequence that should not be ignored.

As we noted, the scholarly communication process can and will continue to evolve and we would like to make some suggestions about how that evolution could be managed to the benefit of all disciplines:

- Hybrid journals, those containing a combination of Gold OA articles and subscription articles, should be encouraged, with sufficient transparency of the balance between the two to ensure that subscription rates remain reflective of the paid-for OA content.

- Federal Agencies should do more to engage with novel initiatives that attempt to redistribute the funds towards Gold OA publishing. For example, in 2019, SAGE entered into a pilot with the University of North Carolina, Chapel Hill. This involves an innovative model that provides a mechanism to repurpose a proportion of the subscription spend of the university to making unfunded disciplines OA while the research funders themselves fund OA for funded articles. We are in discussions with several other institutions in the US regarding similar arrangements.
- Agreements that provide OA through the repurposing of existing library funds provide a crucial mechanism to enable a transition to openness and should be encouraged. SAGE was among the first to embrace what are now known as 'Transformative' or 'Read and Publish' agreements in Europe as they provide a viable route to OA, particularly for low-funded disciplines. While national-level consortia deals may not be appropriate for the US, we believe similar institutional level agreements provide part of the solution.
- Federal agencies should encourage greater use of preprint archives. This enables the distribution of early versions of research outputs but does not undermine the subscription model. SAGE has already taken an initiative in this area by creating *SAGE Advance*, a preprint server focused on the social and behavioral sciences.
- Viable models for low and unfunded research disciplines must be supported. This preferably includes enabling a viable subscription model for low funded disciplines with public access provided through mechanisms outlined above. It is critical that an embargo on the widespread deposit of author manuscripts is allowed to support this.
- However, if there is a determination that all articles must be made immediately available, and hence the scholarly communication system be pushed into a Gold open access model as a standard, funds should be allocated annually to enable low funded disciplines such as the social and behavioral sciences to continue to publish the output of their research without new barriers.
- The publicly accessible publication of internal research reports that all grants require to be prepared on completion of a research study should be encouraged. This is a valuable mechanism for providing the public an overview of taxpayer-funded research that is often overlooked.
- Finally, the research community, including the funding agencies, must address the perverse incentives of the academic reward system. The reliance on the volume of publication in prestige outlets (using the Journal Impact Factor as a

proxy for quality) as a measure of academic value encourages a proliferation of articles and retards the development of new publication vehicles but offers no reward for the critical work of peer review.

SAGE is committed to the continued development of the scholarly communication system, believing it to be central to advancing the health and well-being of society.

We would welcome the opportunity to engage in further discussions or in pilots with OSTP that can advance the impact of research.

Sincerely,

A handwritten signature in blue ink that reads 'Bob Howard'.

Bob Howard
Senior Vice President of Research



Before the Office of Science and Technology Policy

**Public Access to Peer-Reviewed Scholarly
Publications, Data and Code Resulting
From Federally Funded Research**

ER Doc. 2020-06622

COMMENTS OF THE COPYRIGHT ALLIANCE

The Copyright Alliance appreciates the opportunity to submit the following comments in response to the [Request for Information](#) published by the Office of Science and Technology Policy in the Federal Register on February 19, 2020, regarding approaches for ensuring public access to the peer-reviewed scholarly publications, data, and code that result from federally funded scientific research.

The Copyright Alliance is a non-profit, non-partisan public interest and educational organization representing the copyright interests of over 1.8 million individual creators and over 13,000 organizations in the United States, across the spectrum of copyright disciplines. The Copyright Alliance is dedicated to advocating policies that promote and preserve the value of copyright, and to protecting the rights of creators and innovators. The individual creators and organizations that we represent rely on copyright law to protect their creativity, efforts, and investments in the creation and distribution of new copyrighted works for the public to enjoy.

General Comments

The recent policy change proposed by the Office of Science and Technology Policy (OSTP) would eviscerate the copyrights of journal publishers throughout the country by requiring them to make their privately-owned and privately-produced copyrighted articles freely available to the public immediately upon publication when those articles discuss research funded in whole or in part by a government grant. Articles that discuss federally funded research are already subject to a strict copyright limitation put in place several years ago. Any further reduction in copyright protection afforded to these articles would severely harm the marketplace for peer-reviewed scholarly communications. While we appreciate efforts to make federally funded research readily accessible to the public, it is essential that any policy distinguish between research that is funded by the government, on the one hand, and downstream products (such as peer-reviewed articles) that discuss that research but that are funded and produced entirely by the private sector, on the other hand. OSTP's focus on making downstream peer-reviewed articles immediately freely available, by eliminating the already limited copyright protections that support the production and distribution of those articles, reveals an unfamiliarity and overly simplistic view of the role intellectual property plays in advancing research and innovation.

Current OSTP policy already overcompensates for alleged (but unproven) barriers to access by requiring that peer-reviewed journal articles discussing federally funded research be distributed to the public online for free no later than 12 months after publication. This policy represents a significant regulatory overreach into the private marketplace, effectively giving copyright owners only one year—rather than a full copyright term of the author's life plus 70 years—to recoup their investment before being forced to give their property away for free. Any further reduction of this 12-month embargo would significantly reduce the quality and quantity of peer-reviewed articles produced by U.S. scholars and publishers and would have grave consequences for American innovation, research, jobs, and global competitiveness.

It is particularly troubling that OSTP continues to propose this reduction in copyright protection even as the organizations that would be most negatively affected by it are playing a critical role in the COVID-19 relief effort. America's medical professional and research societies are supporting doctors and researchers on the front lines of the battle against COVID-19, doing everything they can to expedite the publication of peer-reviewed articles related to COVID-19 and ensuring that the research community has immediate access to these articles.¹ Instead of supporting these critical organizations in the midst of this pandemic, OSTP is actively pursuing a policy change that would be devastating to their ability to produce high-quality, rigorous peer-reviewed articles. Furthermore, in a stunning failure to recognize the strain these organizations are currently under and the negative impact its proposed policy would have on them, as recently as last week OSTP convened a "final" stakeholder roundtable on its proposed policy—billed as including a broad range of stakeholders—but *did not invite a single medical professional society* to participate in this important invitation-only discussion.

Equally troubling is that the current proposal has been put forward with no evidence that this untested, one-size-fits-all immediate free distribution model is viable or sustainable across the broad range of authors and publishers that produce peer-reviewed journal articles. Nor has anyone presented evidence of failures in the current market for publishing peer-reviewed articles—a market that is in fact incredibly innovative, diverse, and competitive. In an attempt to hastily eliminate unproven barriers to access, the proposal to eradicate the 12-month embargo ignores the Constitutional purpose of copyright law in promoting the progress of science *by securing for limited times to authors the exclusive right in their writings*.

We hope that a better understanding of the relevance and value of copyright protection in these scholarly articles will persuade OSTP to abandon the current proposal and any similar future proposals.

Peer-Reviewed Articles that Discuss Federally Funded Research are Protected by Copyright, Regardless of Whether the Articles are in Draft or Final Form

At the center of the proposed policy appears to be a question of whether peer-reviewed manuscripts that report on federally funded research are protected under U.S. copyright law. As the only association in the United States devoted exclusively to copyright, we can say beyond a shadow of a doubt that these peer-reviewed manuscripts are protected by copyright. As copyrighted works, these manuscripts are valuable American intellectual property, privately owned and produced by hundreds of publishers across the country.

Copyright protects original works of authorship. Just about anything that can be fixed in a tangible form and constitutes a creator's expression is protectable as a work of authorship under the Copyright Act. This includes literary works, such as peer-reviewed journal articles, regardless of whether they are published or unpublished or in draft or final form, and regardless of whether they report on federally funded research.² Although prior to 1978, federal copyright protection generally was available only for published works, such protection is now available for unpublished works as well. The Copyright Act makes that abundantly clear throughout the text of the Act and through the documents and practices of the U.S. Copyright Office.

To be protected by copyright these articles need only meet three basic requirements: originality, creativity, and fixation. Out of the wide variety of creative works that fall within the subject matter of copyright—such as literary works—very few fail to satisfy these requirements. When considering the applicable criteria, *it is incontrovertible that copyright subsists in peer-reviewed journal articles from the moment the earliest drafts of these articles are written*. If OSTP continues to have any doubts about the protections afforded to peer-reviewed journal articles under copyright law, we strongly encourage OSTP staff to discuss their doubts with the expert

¹ See here: <https://www.the-scientist.com/news-opinion/journals-open-access-to-coronavirus-resources--67105>.

² To be clear, we are not suggesting that the underlying data and/or the results of the research itself are protected by copyright, but rather that the expressive works that discuss the research—i.e. the journal articles—are protected. Furthermore, even though these journal articles discuss research that was funded in part by the federal government, since they are not written by federal employees, they are not subject to the limitations on copyright for United States Government works.

agencies on copyright law within the U.S. Government—the U.S. Copyright Office and the U.S. Patent and Trademark Office.

The basis for copyright protection stems directly from the U.S. Constitution. The Framers believed that securing for limited times the exclusive rights of authors to their writings would “promote the progress of science and useful arts.” They understood that this goal would primarily be achieved by inducing and rewarding creators of all types, through the provision of property rights, to create new works. By granting certain exclusive rights to copyright owners that allow them to protect their works against others using them without their permission, copyright owners receive the benefit of economic rewards and the public receives the benefit of the works that might not otherwise be created or disseminated without copyright protection.³

In this regard, a peer-reviewed journal article is no different than a movie, a song, a photograph, a computer program or any other copyrighted work. Copyright—as a property right—forms the foundation for the market for creative works, providing the incentive to invest in the creation of new works, as well as the incentive to invest in commercializing works through development, refinement, and distribution to the public. In the case of peer-reviewed journal articles, while the underlying data discussed in the articles may have initially been collected through support from federal research funding, copyright protection in the articles provides the incentive for publishers of all stripes—including non-profit medical and scientific societies as well as commercial publishers—to collectively invest billions of dollars in producing and disseminating the articles—improving them through the peer-review process, editing them, refining them, and distributing them through subscriptions in the U.S. and hundreds of foreign countries.

Requiring the immediate free distribution of copyrighted peer-reviewed journal *articles*—as opposed to any underlying *data* the government may have actually funded—would set a dangerous precedent by effectively removing the incentives provided by copyright to invest in producing and disseminating these articles. Such a policy also suggests that if government funding can be associated with anything discussed in a copyrighted work, the government can claim ownership over *the entire work*, even if it the government has invested nothing in producing the copyrightable elements of the work. This is an incredibly slippery slope, and this logic could be used to justify eliminating copyright protections across millions of creative works that highlight, discuss, report on, or comment on research or activities funded by the government.

The Current 12 Month Embargo Already Undermines Intellectual Property Rights

Since 2013, OSTP’s policy has been that peer-reviewed journal articles that report on federally funded scientific research must be made freely available to the public 12 months after publication. That policy represents a significant regulatory intrusion into the private marketplace that essentially gives copyright owners only one year—rather than a full copyright term of the author’s life plus 70 years—to recoup their investment before being forced to give their property away for free.

We have long voiced concerns about this government regulation of copyrighted journal articles. The government should not be undermining the Constitution and the Copyright Act by effectively reducing the level of copyright protection for any type of copyrighted work, including peer-reviewed articles that discuss federally funded research. But at least the 2013 OSTP policy was the result of extensive public discussions and negotiations with stakeholders, and the 12-month embargo period provides an essential (albeit narrow) time period for journal publishers to recoup the substantial investments they make in the peer-review and publication process. If OSTP further reduces or eliminates this embargo period, it would essentially repudiate the difficult

³ While the copyright law is intended to serve the purpose of enriching the general public through access to works, it is important to understand that the copyright law imposes no obligation upon copyright owners to make their copyrighted works available. As a result, an unpublished work that is never distributed to the public receives the same copyright protection that a published work would receive.

compromise that was reached in 2013, and the whole ecosystem for publishing peer-reviewed articles as it exists today would collapse.

We strongly object to this approach. Today the government eviscerates copyright protection for peer-reviewed journal articles. What's next tomorrow? Works of art, iconic photographs, documentaries, news reports, historical writings?

It is even more troubling that OSTP is considering this approach in the midst of a global pandemic that is causing economic distress across a wide range of creative, information, and research industries. At the very moment that our society more than ever needs organizations to continue investing in producing high-quality, reliable peer-reviewed journal articles, OSTP is moving towards a policy that would cripple investment in these articles. The result would be that our doctors and scientists would have fewer—and lower quality—peer-reviewed reviewed articles to guide their vital decisions in treating patients and combatting disease. OSTP's proposed approach would be a serious mistake under normal circumstances; its push for it during the current crisis is nothing short of reckless.

As the world continues to face unprecedented challenges brought by the novel coronavirus, initial reports from countries most affected by the pandemic show that piracy of copyrighted works online has increased substantially over the past few months. This increase in infringement, coupled with the near complete shutdown of many copyright-based industries has resulted in massive disruptions in global creative ecosystems. Without the assurances that intellectual property rights provide, incentives to invest will diminish, more jobs will be lost, and the future production of copyrighted works spanning all genres will be threatened.

We know the Administration has been contacted by numerous journal publishers—including hundreds of scientific and medical societies—discussing the tremendous private sector investment made by these organizations in the peer-review and publication process.⁴ We won't discuss in great length the peer-review process or the investments that are crucial to that process because they will do a better job than we ever can. But we want to emphasize that these investments in peer-review and publication are crucial to bringing these important copyrighted articles to the public.

There has been widespread opposition to OSTP's proposal, not only from stakeholders but also from Congress. Late last year, Senator Thom Tillis (R-NC), who chairs the Senate Judiciary Committee's Intellectual Property Subcommittee sent a letter to Commerce Secretary Wilbur Ross and OMB Director Mick Mulvaney voicing his concern that the proposal “would undermine the incentives for journal publishers to invest in the publishing and archiving of scientific journal articles” and “could diminish the high quality of scientific and other scholarly research in the United States.”⁵ In February, Eight Republican Members of Congress with backgrounds in medicine sent a letter to the President raising concerns that OSTP's proposed policy “would undermine American jobs, exports, innovation, and intellectual property” and would “likely result in a cost shift, placing billions of dollars of burden on taxpayers.”⁶

Last month, ten Members of Congress—including half of the Republican Members on the House Judiciary Committee (which has jurisdiction over intellectual property issues)—sent a letter to the Acting Director of OMB warning that OSTP's proposed policy change “would be a costly mistake for American scientific research, intellectual property, and for the economy as a whole.”⁷ The letter echoes concerns surrounding the elimination of publishing incentives, explaining that the proposed policy would upend the entire peer-review process and jeopardize “the most trusted form of scientific communication.” At a time when the quality and reliability of articles reporting on scientific and medical breakthroughs is absolutely critical, undermining the process by which these works are developed, reviewed, and distributed would have grave consequences.

⁴ December 18, 2019 [letter](#) to President Trump from More than 125 scientific societies and journal publishers.

⁵ December 12, 2019 [letter](#) to Secretary Wilbur Ross and OMB Director Mick Mulvaney from Senator Thom Tillis.

⁶ February 18, 2020 [letter](#) to President Trump from eight Republican House Members with a medical background.

⁷ April 9, 2020 [letter](#) to OMB Acting Director Russell Vought from ten Republican House Members.

Finally, in response to the current RFI, Senator Tillis recently sent a letter to OSTP Director Droegemeier expressing serious concerns with the proposed policy.⁸ Senator Tillis confirms, as these comments do, that peer-reviewed journal articles produced by private-sector organizations are protected by U.S. copyright law, regardless of whether they are in draft or final form. The letter explains that while copyright protection does not extend to underlying data discussed in the articles, the great deal of expressive content that goes into the articles qualifies them for protection. In this way, the journal articles are no different than newspaper articles, books, television programs, or films that comment on or discuss federally funded research.

We agree with these Members of Congress that the proposed policy will also have a ripple effect through the federal government, the marketplace, and research and innovation. For one thing, it will result in American taxpayers being forced to pay for peer review. Since publishers will no longer be able to recoup their investments, they will look to researchers to pay to have their articles peer-reviewed and published. These researchers will then look to the federal government to finance this new expense or, when possible, may divert monies from their existing federal research grants to finance it, which means ultimately it will be American taxpayers who are paying the bill.

Moreover, copyrighted products are one of our nation's top exports, and American peer-reviewed articles are an important part of this. They are licensed in hundreds of foreign countries, generating billions of dollars in U.S. exports and contributing positively to our balance of trade. Requiring free distribution of these articles would erase those exports and amount to a U.S. subsidy of the rest of the world's consumption of this valuable American intellectual property.

In sum, upending the marketplace—as OSTP is proposing—makes no fiscal or policy sense. America's federal research grant programs are based on the understanding that the best way to spend federal money is to incentivize private actors to make follow-on investments that leverage and build upon the results of federal grants. Nothing has changed over the past several years, and no evidence has been offered to justify altering that successful approach.

We therefore implore OSTP not to change the current policy and to retain the 12-month embargo period on the government-mandated free distribution of peer-reviewed journal articles that discuss federally funded research.

Conclusion

The Copyright Alliance thanks the Office of Science and Technology Policy for the opportunity to share our views on this matter. We look forward to answering any further questions the Office may have.

Respectfully submitted,

Keith Kupferschmid

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Copyright Alliance
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May 6, 2020

⁸ April 17, 2020 [letter](#) to OSTP Director Kelvin K. Droegemeier from Senator Thom Tillis.

May 6, 2020

Via Email to: publicaccess@ostp.eop.gov

Office of Science and Technology Policy
The White House
Washington, DC 20500

Re: RFI RESPONSE – PUBLIC ACCESS (85 FR 9488)

Elsevier appreciates the opportunity to respond to your Request for Information (“RFI”). Scientific, technical and medical (STM) journal publishers, like Elsevier, exist to serve the global research community by organizing the review, editing and dissemination of primary research, reference and professional education content. Elsevier’s customers include scientists, academic and research institutions, students, medical and health professionals, as well as hospitals, healthcare organizations, corporations and governments. Elsevier and its sister companies employ 15,000 people in the U.S., and Elsevier enjoys principal operations in Massachusetts, New York, Pennsylvania, Missouri and California. More than 850 of Elsevier’s journals are based in the U.S., and we enjoy publishing partnerships on behalf of more than 200 American learned societies and associations. Our society partners represent well over a million researchers, clinicians and patients.

Elsevier was proud to partner with OSTP to ensure that all our publications relevant to the fight against COVID-19 were not only freely available on our own Novel Coronavirus Information Center, but also on PubMed Central in both readable and text mineable formats. We look forward to continuing this collaboration in search for a vaccine.

Executive Summary

We wholeheartedly share OSTP’s commitment to advancing an open science agenda that supports access and scientific integrity. So how do we move forward? Although the topic does not lend itself to “easy” answers, we see three areas where the White House can advance the agenda in a manner that draws broad stakeholder consensus, reinforces long-standing public-private collaborations that serve as the backbone of the U.S. research ecosystem, and supports high-quality research:

1. First, the direct results of federally-funded research—that is, the outputs directly paid by taxpayers—should be made freely and publicly available. This includes **final project reports, underlying data sets and code**, all of which remain largely inaccessible in today’s research landscape. Publishers like Elsevier make no claims to such outputs because they are funded directly by the taxpayer and do not yet include any value-add from the private sector.

2. Second, there is an opportunity to encourage greater access to and uptake of so-called “**preprints**”—which are the draft articles prepared for submission to journals. These draft articles have not yet been improved through publisher-led investments, such as peer and editorial review processes, and can be made available in a responsible manner.

3. Third, the White House could play a unique role in bringing together—in an ongoing manner—diverse stakeholders to map out a sustainable path forward under the “Open Access” model, in which authors (or funders) pay for publication costs so more **peer reviewed articles** are free to read upon publication. For this “pay-to-publish” or “open access” model to flourish, certain structural challenges need to be addressed.

We share the concerns voiced by numerous scientific and medical societies, as well as various other journal publishers, regarding proposed policies that seek to mandate immediate, free access to versions of scholarly communications that are prepared through private sector funding. We are similarly concerned with policy proposals that may dictate how and when researchers can publish their works, thereby restricting “author choice.” Any government-imposed directive along these lines would risk harming the system of peer-reviewed scholarly communication that supports science and innovation, and would be contrary to well-established U.S. commitments to public-private partnerships.

The research ecosystem is complex and subject to multiple perspectives and views *within and amongst* different stakeholders—from (1) researchers, *as readers*; (2) researchers, *as authors*; (3) funding bodies; (4) universities (*e.g.*, libraries, research officers, CIOs, faculty, etc.); (5) learned societies; (6) non-profit publishers; (7) commercial publishers; and (8) the global academic community. We urge the Administration to resist any one-size-fits-all “solution,” and to refrain from imposing any sweeping rules governing the complex and multidimensional scholarly communication ecosystem.

Guiding Principles

Elsevier remains committed to driving towards an increasingly open future. For purposes of this RFI, we have formulated a set of “**Guiding Principles**” that may be used as a tool and reference guide to advance this discussion in a clear and balanced manner that supports, and does not undermine, critical scholarly communication frameworks. These principles apply to the different types of research outputs because, in our view, it is essential to distinguish between these distinctive outputs and research stages in formulating sound evidence-based policies.

Outputs	Guiding Principles	Recommendations
Publicly Funded Research Results <i>E.g., Final Reports, Data Sets, Code, etc.</i>	If taxpayer funded, with no publisher contribution, it should be freely available	<ul style="list-style-type: none"> ➤ OSTP should facilitate access to project reports ➤ OSTP should explore incentives to help researchers share data without undue burdens (& unfunded mandates)
Non-Funded or Post-Grant Authorship, With No Publisher Value-Added Services <i>E.g., Preprints/Submitted Manuscripts</i>	If outside of grant, and work contains no publisher contribution, authors should be free to share as they choose	<ul style="list-style-type: none"> ➤ OSTP could encourage greater uptake & early sharing ➤ Important to emphasize that these drafts have not been fully vetted by the scientific community and are not considered formally published works
Private-Sector Value Added Works <i>E.g., Accepted Author Manuscripts (“AAMs”) and Published Journal Articles based on federally funded research</i>	If enhanced article is produced by way of a <i>non-governmental</i> peer review & editorial process, the resulting work should be subject to market principles	<ul style="list-style-type: none"> ➤ Diverse publishing funding models should continue to be respected, including pay-to-publish & pay-to-read options ➤ If articles are not funded via a pay-to-publish model, then articles/AAMs may be freely shared after 12 months

RFI Responses (By Output)

Based on these principles, we have arranged our comments primarily by the *nature of the output*, with a corresponding reference to the RFI topic as applicable. This allows us to address the ins-and-outs of articles, data and code in a more consolidated answer, especially seeing that all of the RFI topics focus on some version of accessibility—*e.g.*, “public access” (Topic 1), “free” access (Topic 2), and “immediate access” (Topic 3). To do otherwise artificially bifurcates the proposed opportunity across the three interrelated “access”-based questions.

A. Publicly Funded Outputs (*e.g.*, Project Reports, Data & Code). We agree with OSTP’s objectives to ensure that the results of federally-funded research (RFI, No. 2)—that is, the outputs directly paid by the taxpayers—are made freely available. As noted below, however, the peer-reviewed author manuscript is not funded by taxpayers, as this value-added version exists as a collaboration between authors and publishers. As a result, we focus here on those facets of the research lifecycle that are directly funded by taxpayers, and not otherwise touched by publishers.

A great deal more can be done to make taxpayer funded outputs more available. Publicly funded research (as all research) generates numerous outputs. For example, final project reports are required to be filed with all funding agencies under federal acquisition regulations. In most cases, these reports remain wholly unavailable and an untapped resource.¹ Final project reports represent perhaps the most effective vehicle for public understanding of how taxpayer funds were used. Focusing only on peer-reviewed outputs limits the universe of publicly financed research to a smaller subset of projects.

Similarly, Elsevier is eager to work with OSTP on improving the uptake of open research data practices in order to embed reproducibility firmly into the scientific process. Our shared goals on reproducibility could help create a more supportive environment for researchers to make their data free, open and discoverable to all researchers wherever possible. Open research data practices are therefore best implemented through a range of incentives, delivered through a positive policy ecosystem and complementary tools to make the process of sharing data seamless and unobtrusive to researchers’ work.²

B. Non-Funded or Post-Grant Authorship - With No Publisher Value-Added Services. Moving a step further away from the direct results of publicly funded research, “preprints” (or “submitted manuscripts”) are another avenue to accelerate open science. A “preprint” is the original draft article to which no value has been added by publishers (through

¹ The America Competes Act requires, for example, that the National Science Foundation make available to the public in a timely manner all “final project reports” resulting from research funded, in whole or in part, from the Foundation. *See* 42 U.S.C. § 1862o-2.

² *See* Elsevier Policies, “Research Data,” at <https://www.elsevier.com/about/policies/research-data>; and the Elsevier-Leiden University report on data practices, “Open Data: The Research Perspective” (2017), at <https://www.elsevier.com/about/open-science/research-data/open-data-report>.

editing, peer-review, and other processes). Although this output is typically voluntary, and may occur outside of the grant cycle, preprints have not yet been touched by publishers (*i.e.*, no “value added”). For this reason, Elsevier has long espoused the position that [*“Authors can share their preprint anywhere at any time.”*](#)

There is a robust and growing culture for sharing this type of work, and Elsevier’s own [SSRN](#) is an excellent example of a community that has been developed around the free sharing of preprints. While many preprints are shared this way, there remains a large corpus of similar content that is not. OSTP may want to consider how to further encourage the uptake in a responsible manner, in line with researcher needs and associated integrity and public health concerns.

C. Private-Sector, Value-Added Works. Getting the results of research out to the public is one thing; getting a *specialized, improved version* of articles analyzing that work is another. With respect to the former, researchers can get their work out to the public in a number of ways. They submit research findings to funders (who are in a position to share the works, as noted above), and they are free to publicly share their research finding and post their papers, including preprints, in publicly accessible repositories. However, if a researcher has the further aim of ensuring his/her work receives specialist support—that is, is assessed for validity, significance and originality, and is produced in the form of a high-quality article—he/she will turn to a publisher for support. This activity benefits the author and reader alike, lifting the entirety of the research ecosystem. **All of these publishing activities occur outside of any grant obligations, public funding, or governmental oversight, and constitute a separate private sector-led value-added service.**

As U.S. CTO Michael Kratsios noted in an article titled [Connecting Americans to Coronavirus Information Online](#), “there is no shortage of coronavirus content on the internet,” the challenge lies in ensuring that people have access to “the most up-to-date” and “most relevant” information. Publishers play a critical role in highlighting the most promising developments in research, while also ensuring that fake science does not pollute the mainstream. When faced with a flood of information, busy scientists, clinicians and other professionals will turn to and rely upon the imprimatur of authoritative journals—many of which have decades of renown in their specialized fields—to stay up-to-date on the latest developments. In a pointed [interview response](#), Dr. Fauci said that he handles the pandemic’s “information deluge” by relying on trusted journals: “If something is published in places like *New England Journal of Medicine, Science, Nature, Cell*, or JAMA—you know, generally that is quite well peer reviewed because the editors and the editorial staff of those journals really take things very seriously.” Put simply, mere (free) access to content is not enough when unaccompanied by some indicia of trust and quality. The RFI’s focus on “access” should not cause the complexities and nuances of the research system to be overlooked.

The challenge is not in increasing open science outputs, but rather how to get there in a sustainable manner while supporting diverse researcher needs. To this end, we see some opportunities, and share some existing barriers that need to be overcome through further engagements and collaboration. These include:

1. Accelerating Open Access. Each year, approximately 2.5M articles embodying the advancements of science are published. Roughly 80% are published on a subscription basis, meaning it’s free for authors to publish their works while subscribers pay to read them. The remaining 20% are published on a “Open Access” basis, where authors (or funders) pay an Article Publication Charge (APC), removing the need for a subscription and providing immediate and free access.

Elsevier supports a flexible environment where researchers have a variety of options on how to publish. Elsevier has pursued innovative business models to support authors in the manner that they request. In 2019, Elsevier published almost 50,000 Open Access articles, making Elsevier one of the world’s largest “OA” publishers. The challenge before us is how to both increase adoption of this pay-to-publish model while supporting a well-functioning and sustainable system.

For a number of reasons, this model has not been widely adopted in the U.S. or around the world. By way of example, NIH allows researchers to use grant funds to publish papers on an “open access” basis. Elsevier currently observes 24% uptake among NIH-funded authors for the open access model, whereas 76% elect not to do so. There is more work to be done to increase demand for, and support adoption of, a pay-to-publish model, and Elsevier welcomes the opportunity to work with OSTP on ways to build on the open access participation figures. Researchers, funders and publishers need to better understand the current limitations to increase adoption and drive the necessary change. For example:

- *Are articles being submitted after grant closure?*
- *Do OA levels fall upon 2nd+ article submissions?*
- *How do different grant ranges and disciplines fare?*
- *Would an escrow arrangement encourage uptake?*

During our February roundtable session, OSTP acknowledged that it does not yet have answers to these and other questions necessary to inform public and private sector actions. More evidence, and piloting of models, is needed.

2. Barriers and Limitations. RFI No. 1 asks about barriers affecting the adoption of some of these initiatives. With respect to accelerating open access, one leading study found that both researcher attitudes and associated costs, at both the individual and institutional levels, pose challenges to a greater adoption of a pay-to-publish “open access” model.³ This thoughtful study, funded by the Mellon Foundation and conducted on behalf of the University of California Libraries, recognized a great opportunity to advance the pay-to-publish model, however, in doing so the study also found:

a. ADDED COSTS AND OPEN QUESTIONS AROUND FINANCING MODELS:

- “[F]or larger research-intensive institutions,” a flip to a single pay-to-publish model will cause a “significant funding gap” as “the total cost to publish...will exceed current library journal budgets.” (PIF at 6-7)
- “[F]unds available to the researcher, including grant funding, should be considered” to cover publication costs (PIF at 116)

b. RESEARCHER ATTITUDES – NO WIDESPREAD “BUY-IN”:

- “From the authoring point of view, concern was expressed about the financial ramifications of widespread open access, not only personally, but also as it might impact departments[.]” (PIF at 12)
- “Opinions about publishing in open access outlets, and the model in general, ranged from extremely positive to extremely negative, with most participants somewhere in the middle.” (PIF at 22)
- “[O]pen access was rated the lowest in importance across all position types and...disciplines.” (PIF at 28)
- “[R]espondents were reluctant to pay author charges to publish their papers...For the amount respondents would be willing pay from their personal research funds, the majority...chose ‘none’ (55.2%)[.]” (PIF at 29)

c. THE NEED FOR FURTHER EVALUATION AND OPERATIONAL INFRASTRUCTURE:

- “[S]uch a transition [to a pay-to-publish model] will be *extremely complex*, with *significant risk* on many sides. Moving in this direction will *require careful balancing of resources* and the *development of entirely new operational infrastructure*[.]” (PIF at 131, emphasis added)
- “The shift to an APC funding model implies the introduction of a *new socio-technical system* for scholarly publishing. This will undoubtedly produce *changes in workflow for numerous stakeholders*[.]” (PIF at 19, emphasis added)
- “[C]onverting the cost of scholarly communication to an ‘author pays’ or, potentially, an ‘institution pays’ model has *huge implications* for large research institutions...Finding the *right financial model* to pay for a more open form of scholarly communication...requires *significantly more evaluation*.” (PIF at 10, emphasis added)

These concerns are real and would not disappear by the issuance of a top-down policy directive. Instead, thoughtful pilot projects could be developed to find sustainable solutions to such well-recognized difficulties. These projects could bring together funders, researchers, publishers and universities to work together to support a sustainable path forward.

The White House has been engaged in one-on-one meetings and a few sector-specific roundtable discussions since Dr. Droegemeier’s confirmation. Yet to date there has only been one (1) convened cross-sectoral group including publishers to begin to talk through specific action items around open access uptake on publisher produced article outputs. This meeting just took place a few days ago, on April 30, and we respectfully submit that this first meeting should not be OSTP’s “final” multi-stakeholder meeting to work through transition models recognized as being “extremely complex, with significant risk on many sides.” Only through continued dialogue and a data-driven *test and pilot approach* can we ensure that the right mechanisms are in place to collectively overcome funding flow and related challenges.

³ See University of California Libraries. “Pay It Forward: Investigating a Sustainable Model of Open Access Article Processing Charges for Large North American Research Institutions” (Oakland: 2016), hereinafter the “PIF” report. Last accessed at: https://www.library.ucdavis.edu/wp-content/uploads/2018/11/ICIS-UC-Pay-It-Forward-Final-Report.rev_.7.18.16.pdf.

3. Additional Considerations. The RFI’s final topic invites additional information that should be considered in connection with any federal policy around peer-reviewed content. With the RFI’s predominate focus on “access,” it is important that we close by emphasizing that publishers exist to *enable* broad access. To interpret the current debate as one between a “closed and open” framework is improper, and indeed, factually incorrect for several reasons.

First, publishers like Elsevier make *all* articles published in their journals publicly available to read *immediately* upon their publication. Researchers and the general public enjoy a broad and diverse environment in which to consume content by paying for certain versions and receiving others for free:

ARTICLES PUBLISHED OA (fee paid by authors; free for readers) <i>Available Day 1</i>	SUBSCRIPTION CONTENT (fee paid by readers; authors publish for free) <i>Available Day 1</i>	ARTICLE SHARING (free for authors & readers, see n. 4) <i>Available Day 1</i>
PATIENT AND CAREGIVER ACCESS (requested articles provided at no cost) <i>Available Day 1</i>	WALK-IN ACCESS (free public access at licensed universities) <i>Available Day 1</i>	ARTICLE ABSTRACTS (summary provided at no cost) <i>Available Day 1</i>

In addition to these Day 1 access options, subscription articles reporting on federally funded research are made *freely* available to the public at the end of Year 1. This additional form of “public access” balances the need for timely access to research with a sustainable mechanism to provide that access via subscriptions for articles that are not paid for up front. To shorten or do away with “embargo” periods, while *not simultaneously funding* open access frameworks and supporting U.S. authors, would result in a U.S. research landscape that is inefficient if not also unsustainable. Similarly, talks of “price caps” on articles ensure a non-dynamic marketplace. There exists vast diversity among journals and research disciplines.

Second, just because certain versions of value-added research may have associated costs does not mean that research is “closed.” Elsevier’s journals received over **1 billion downloads** in 2019. This is not a “closed” system. The issue, to be precise, appears not to be one of a lack of access *per se* but rather about whether and how to provide “free” access (RFI, No. 2). OSTP must understand that the value-added peer-reviewed article is not free to produce, and publishers collectively invest *billions of dollars each year* to bring these articles to readers.

Publishers work intensively with the research community and make investments that go into producing the peer-reviewed manuscript by way of operating *business frameworks, systems, processes and policies* that govern the *solicitation, vetting, curation, editing, dissemination and long-term preservation* of high-quality content. Every day, some 8,000 Elsevier employees, 22,000 editors, 80,000 editorial board members and a network of 800,000 peer reviewers support Elsevier’s 2,500 journals across a wide variety of scientific disciplines. The effective and sustainable operation of these business models—be it as a society publisher, a non-profit or commercial publisher—is critical to a well-functioning research landscape.

As a result, it is difficult to see how “American competitiveness” (RFI, No. 3) is supported if researchers face new restrictions on how or where to publish their works, or private sector investments to support the production of these high-quality outputs are undermined through overbroad regulatory policies, including a “zero embargo.” Talks of “trade-offs” (RFI, No. 3) are misplaced if they assume that the government can maintain today’s quality outputs financed by the private sector but dictate how the private sector should operate. There is a long list of unsuccessful examples of where governments have tried to fix markets by directing business models, removing market choice or flexibility, and setting price controls. The guaranteed effect is to distort behavior, create inefficiency and erode value.

Elsevier shares the goal of making high quality research outputs publicly available. We believe this must be done in a manner that is both fair to the researcher/author *and* sustainable for the corresponding partner publisher, all while ensuring that innovative business models and frameworks may be tested in the marketplace. Any one-size-fits-all government-imposed model will not drive innovation, and may needlessly undermine the robust research landscape.

We appreciate your effort to engage stakeholders on these important issues and look forward to further discussion with OSTP. If you have any questions, please do not hesitate to contact Daniel Marti at daniel.marti@relx.com.

⁴ See Elsevier Policies, “Article Sharing,” at <https://www.elsevier.com/about/policies/sharing>.



Darilyn V. Moyer, MD, FACP, FRCP, FIDSA
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May 6, 2020

Dr. Lisa Nichols, Assistant Director for Academic Engagement
Office of Science and Technology Policy
publicaccess@ostp.eop.gov

Dr. Kelvin K. Droegemeier, Director
Office of Science and Technology Policy

Dear Drs. Nichols and Droegemeier,

The American College of Physicians (ACP) appreciates this opportunity to respond to Document 85 FR 9488, *Request for Information (RFI): Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting from Federally Funded Research*.

ACP is a nonprofit organization with a mission to enhance the quality and effectiveness of health care by fostering excellence in the practice of medicine. Founded in 1915 and now with over 159,000 members, ACP is the largest medical specialty organization and second-largest physician group in the U.S. We are a recognized leader in developing and delivering trusted, authoritative, evidence-based information and educational programs to physicians and other clinicians. As a professional learned association, we work to serve society by developing evidence-based clinical recommendations, carefully vetting and disseminating research, advocating for patient-centered health policy, and developing educational materials to help clinicians keep their knowledge current. At present, ACP is highly engaged in efforts responding to the COVID-19 pandemic. We produce and keep updated a freely available [ACP COVID-19 Resource Hub](#) that offers a variety of tools and information products, along with a [collection](#) of content from the *Annals of Internal Medicine*, for internists and others on the front lines. Revenue from our publications and membership dues support these and other activities.

Access to Peer-Reviewed Publications

ACP owns and has self-published since 1927 the top-tier, peer-reviewed, influential journal *Annals of Internal Medicine*. The journal is a benefit of ACP membership and a fairly priced subscription publication. It makes more than 25% of its content publicly available without charge immediately upon publication, including clinical guidelines and systematic reviews that ACP supports and produces.

Annals content is trusted by physicians, researchers, healthcare executives and policy makers for its rigor and relevance. As a result, it has significant usage and is the most highly cited internal medicine journal in the world. Ensuring the rigor and relevance of *Annals* content requires an enormous investment of time and resources by professional physician editors, statisticians, publishers and staff. The journal is highly selective with a rigorous peer-review process. The U.S. editorial staff has expertise in clinical medicine and research methodology. In addition to internal review of the large volume of submitted manuscripts, the editors identify external reviewers and engage the journal's PhD-level biostatistician editors in the review process. The editorial team discusses manuscripts at weekly content and methodology meetings and provides authors extensive guidance to assist them in revising their manuscripts. Input from the journal routinely results in important adjustments to a study's analysis, interpretation, and conclusions. In addition, journal editors solicit related editorials to provide context, produce continuing medical education activities, and write article summaries for the lay public. The staff handle copyediting and many production activities in house. We invest substantial resources that include content creation, curation, copy-editing, development of print and digital journal formats, dissemination, and preservation. ACP collects data about the use of published articles that are of interest to authors and funders. Such rigorous review, publication, and communication processes help to maximize what is learned from the studies, enhance reproducibility, and ensure that the scientific community moves as efficiently as possible toward improvements in health care.

Current typical Article Processing Charges paid by authors or funders are insufficient to support a highly selective journal that invests substantial resources to ensure high-quality, trusted published material and effective distribution of content to audiences who rely on it. An embargo time to support the creation of such content is critical for us to recover the investments made to ensure the delivery of a high-quality, clinically influential journal. Both authors and readers value the careful vetting and publication processes. Authors are proud to publish their work in journals like *Annals*, and readers rely on them as a trusted information source.

Examples of advancements we have made with the STM community include requiring authors to register clinical trials, outline data sharing plans, disclose conflicts of interest, provide transparent descriptions of author contributions, and adhere to reporting standards that enable clinicians to apply and other researchers to build upon study findings. In addition, other work includes the establishment and implementation of standards that improve search and discovery, accessibility, tracking papers and linking content, reporting on federally funded research through CHORUS, and adhering to best preservation practices.

Data and Code Sharing

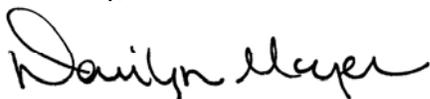
The February 22, 2013, memorandum from John P. Holdren, former Director of OSTP, to federal agencies on "Increasing Access to the Results of Federally Funded Scientific Research" was a significant move toward making research results accessible to the largest possible audience while recognizing the value of copyright (1). Better and consistent agency compliance

to what has already been directed would improve early and more complete access to scientific information and improve research productivity. As outlined in the November 2019 U.S. Government Accountability Office report, the area in need of further compliance is related to data access and mechanisms to ensure researchers comply with public access requirements (2). Increasing access to data and code will introduce opportunities to improve reproducibility and build on the research performed, thereby accelerating innovation through open science. Research articles report findings, but the relevant data and code are rarely available in a reusable form. Although there is a start toward enabling sharing of data and code, there is significant work needed to define the path and change incentives to enable this transformation. A funded program of researcher training, education, standards creation, and full support for data curation, storage, and long-term preservation are required. With collective work among the various stakeholders matched by a financially sustainable policy, many opportunities to advance the research enterprise would be available.

With respect to data sharing, through our industry membership organization STM, we are working toward new initiatives to increase sharing, linking, and citation of research data. The need to develop and evolve data standards is critical to support researchers with their data management plans. In 2007, as a first step toward the larger goal of promoting widespread sharing and reproducibility of research, *Annals* implemented a policy that requires authors to document their willingness to share study protocols, statistical code, and data. In 2018, *Annals*, along with 14 member journals of the International Committee of Medical Journal Editors, agreed to require manuscripts reporting the results of clinical trials to state whether the de-identified individual participant data underlying the results will be shared with others. Protecting the privacy of trial participants, ensuring appropriate incentives and rewards for investigators and funding sources, and establishing data storage and sharing infrastructures can be a monumental undertaking but has the potential of great reward. Additional steps are in the planning stages.

Although progress is evident, there is more to be done to take advantage of open scholarship for the benefit of the U.S. and the world. This can happen more quickly and less expensively with public-private partnerships and various stakeholder contributions that avoid duplicating efforts while ensuring sustainable, broad access to scholarly communications. We look forward to participating in this advancement.

Sincerely,



Darilyn Moyer, MD, FACP, FRCP, FIDSA
Executive Vice President and
Chief Executive Officer

- (1) https://obamawhitehouse.archives.gov/sites/default/files/microsites/ostp/ostp_public_access_memo_2013.pdf
- (2) <https://www.gao.gov/assets/710/702847.pdf>

**Response to Request for Information: Public Access to Peer-Reviewed Scholarly
Publications, Data and Code Resulting From Federally Funded Research,
85 FR 9488**

May 6, 2020

Dear Drs. Droegemeier and Nichols,

We write in response to the recent OSTP Request For Information regarding increasing access to the results of publicly funded research. We would like to thank you for your continued diligence on this important topic and for pushing forward on the next steps to evolve our research enterprise toward open science.

We have recently come together as an informal group of progressive nonprofit publishers to help forge a path forward to fundamentally improve the way we communicate research results. We appreciate your thoughtful questions and provide you here with what we believe to be a progressive path toward a more open and effective research communication enterprise.

We collectively publish over 600 research journals, including journals from 287 research societies spanning the sciences. Here we provide information and policy options that we hope will assist you in making informed decisions on forthcoming policies. We stand ready to support you through this process and want to be clear that we are not espousing any particular policy position, but that we see real value for our societies, organizations, and the larger scientific enterprise in the options outlined below.

The 2013 OSTP directive to Federal agencies on “Increasing Access to the Results of Federally Funded Scientific Research” was the first of what we hope to be a series of deliberate steps to modernize our scientific communication ecosystem toward a more open enterprise. While the 2013 memo was an essential step forward, there have been challenges on implementing it at the agency level as detailed in the November 2019 GAO report¹. That report details how implementation of the previous OSTP directive has been inconsistent at the agency level. Beyond the need to improve agency compliance with the previous directive and their own public access plans, there remain tremendous opportunities to accelerate science, improve research productivity, and improve scientific reproducibility and efficiency through open science. We believe that the most effective of these opportunities lie in increasing access to data and code, as well as addressing the critical need to modernize the way we communicate research methods. Below we outline what we see as the critical problems that could be addressed through sound policy and sustainable policy options that collectively take us further toward a more open research ecosystem.

Access to Publications

Each of the organizations represented in this group has made a clear commitment to open science. We are all at different stages toward achieving those goals, and the different needs of different research communities have become increasingly clear. We understand the desire to

¹ <https://www.gao.gov/assets/710/702847.pdf>

rapidly reach the goal of immediate open access to research publications, but strongly suggest that the route to such a change needs to be carefully considered so it does not have unintended consequences.

We believe that implementing open access to research articles in a stepped manner is the best route for a number of reasons. First, we are in the middle of an extraordinary transition in the publishing industry. Open access journals are the fastest growing sector of scholarly publishing. That movement is forcing a wholesale reimagining of business models and it is taking time for publishers to adjust to the changes. Current business models do not work across all fields for all communities, and further experimentation, support, and guidance are needed to find new ways to improve the publication of research.

It is important to recognize that we are not faced with choosing between subscription or an author-pays APC (Article Processing Charge) model—rather, we envision a broad range of models that can be applied in different contexts and that are appropriate for each community and research field. We feel there is an important role to be played in this evolution by Federal agencies by providing support for business model development and experimentation to demonstrate the applicability of a diversity of models.

The APC model predominates current Gold OA programs, yet it is flawed in many ways, particularly in that it merely shifts inequity in the system from the reader to the author, potentially shutting out the voices of less-funded authors, and entire fields of research that lack adequate funding to cover APCs. Journals rely upon diverse revenue streams, many of which may disappear if a singular business model is imposed as the sole route to OA. If revenue from sources outside of the research community (e.g., corporate subscriptions, rights licensing, print advertising) are eliminated, recovering those lost funds will increase the financial burden on researchers. Hence, APCs are important for supporting publications, but cannot be relied upon as the sole source of support for OA publishing and a diversity of new models needs to be developed.

Research societies remain vital to the scientific enterprise, and the work they do on behalf of the community and scientific progress is largely funded through journal revenues. For many scientific society journals, a rapid abolishment of the subscription model would be financially devastating and potentially cause them to fold. One of the key benefits research societies offer to paying members is access to their journal(s). Without the ability to offer this inducement, society membership will likely wane, further endangering their existence.

For most selective journals the APC model is inadequate, because it forces authors of accepted papers to pay for the work done on rejected papers. For example, at PLOS, the two highly selective journals, *PLOS Biology* and *PLOS Medicine* (each rejecting approximately 90% of submissions) have always lost money, despite their \$3,000 APC. It is estimated that the journals would need a prohibitive \$7,000 APC rate to break even. These journals are subsidized through *PLOS ONE*, which has a much higher acceptance rate and publishes a much larger volume of papers.

The APC model can create an incentive to publish a higher quantity of research. The only alternatives under this model are charging authors significantly higher APC rates than are currently seen in the market, or, as we hope to develop in collaboration with the OSTP and Federal agencies, diversifying the available business models for research publishing. The APC model also favors larger publishers who can offer economies of scale that outcompete society journals and smaller publishers.

Innovative models such as institutional or individual membership schemes and submission fees have largely proven untenable due to intense competition and market forces. Library budgets are under intense pressure and voluntary spending is not an option for most universities. OA models will need to prove cost-effective and to exist in a level playing field with other approaches before the industry can sustainably adjust to more open models.

Without a variety of new business models, we are concerned that scientific rigor will no longer be supported and that small publishers and scientific societies will be driven to either sell off their journals, or move their publishing operations to partnerships with larger (mostly European-based) commercial publishers who can provide economies of scale (a trend that is ongoing). Consolidation in this manner would reduce choice for authors and reduce competition in the market, leading to dominant market positions closer to monopoly. We are concerned that actions leading to further consolidation would result in more of the research literature being governed by organizations who are motivated by profit, rather than solely by scientific advances and the benefit of the research community.

For these reasons, we propose the following potential activities that could inform the OSTP's and the Federal agencies' policies toward public access to research publications:

1) Begin by requiring agencies to fully implement existing requirements. The recent GAO report indicated that there are still numerous challenges with Federal agencies implementing requirements from the 2013 OSTP directive on access to research results². We believe that it is critical for agencies to fully implement the existing directives before changing the directives, which could cause confusion in the research community. This would allow researchers, agencies, and publishers to become more acclimated to compliance procedures, resulting in better results as new requirements are phased in. Of particular utility would be to follow the example set by the NIH and not allow grant applicants to claim credit for previous publications unless those publications are submitted to the designated agency repository. We believe that inconsistent and uncoordinated implementation of existing rules is reducing researcher compliance, and hence reducing public access to funded research.

2) Support for the development of a broad array of open access business models. We feel that the evolution of new models and a diverse ecosystem of models is essential for a successful and sustainable transition to immediate and full open access to research publications. This can be supported through:

- Explicit guidance on which publication costs can be covered by Federal grants.

² <https://www.gao.gov/products/GAO-20-81>

- Providing Federal support/incentives for experimentation with new business models that help maintain high standards of rigorous editorial review. Funds for trials of new business models should be offered in order to determine whether they are able to overcome the market forces that, to date, have prevented their adoption;
- Providing support for models and infrastructure necessary to shift current subscription spending to open access. The OSTP and Federal agencies are uniquely placed to bring together research community stakeholders to build standard approaches supporting the shifting of library budgets toward the support of publishing openly accessible materials. Reducing the complexity of these models and the necessary negotiations will greatly benefit the smaller and independent organizations, which lack the capacity of larger publishers.
- Fund the development of a public-private partnership to build a system to assess compliance and reduce complexity and administrative burden on researchers and duplicative efforts by Federal agencies.

Access to Data, Code, and Research Methodologies

In addition to the steps that could be taken to increase access to publications, we believe that there is an enormous potential for benefit to the scientific enterprise and society through increasing access to data and code, and innovation around the reporting of scientific methods. While access to the written publications that describe research findings is important, the real game-changer for the larger scientific enterprise will come when we fundamentally improve how we describe scientific research. Here we will address three clear opportunities.

Data and Code Sharing. Access to research data sets and software can accelerate economic growth and discovery by allowing researchers to focus resources and efforts on understanding and fully exploiting discoveries. For example, making human genome sequences publicly available drove tremendous growth in the biotechnology industry and fundamentally transformed biological research. Going forward, wider availability of scientific data and code will create innovative economic markets for services related to data curation, preservation, analysis, and visualization, among others.

However, right now, the majority of scientific research data that are being drawn upon for the conclusions of research papers, are not widely available. When they are available, they are often presented in a non-reusable manner in article's supplementary information, or, in hard to find and non-permanent storage solutions. We have little doubt that the continued practice of limiting access to research data has been a major contributing factor to the reproducibility and replicability challenges in the sciences today.

The 2013 OSTP memo set clear goals for research data. It plainly stated that funding agencies should ensure that “digitally formatted scientific data resulting from unclassified research supported wholly or in part by Federal funding should be stored and publicly accessible to search, retrieve, and analyze.”

We believe there is a need for additional directives, incentives, and timelines for opening access to research data and code that is relevant to the findings reported in research articles at the time of publication. There is little evidence that policies that “encourage” data and code sharing have

driven an appreciable increase in sharing. Where journals have required authors to make data publicly available, there has been no appreciable decline in submission or publication.³ We believe there is an important opportunity to maximize the value of federally funded research and enhance scientific reproducibility through the transparency offered by requiring data sharing and believe that the White House can play an important role in taking the bold steps necessary to drive data and code sharing.

We believe that the only way that the scientific enterprise will fully embrace open data is if funds are provided to support the cultural shift necessary to ensure the deposition and immediate access of data underlying the conclusions in scientific publications at the time of publication. Further, we believe that such policies should include requirements that data sharing adhere to FAIR data principles⁴. Reaching these goals will require a funded program of researcher training, education, standards creation, and full support for data curation, storage, and long-term preservation costs.

The advantage of such a policy is that it describes the parameters of which data need to be made available and leaves control of when data is made available in the hands of the researchers who produced it. Researchers will retain the ability to refrain from publishing until such time that they are comfortable releasing their data. Each field of research differs in the types of data that are generated and necessary to support the conclusions reached in a research paper. Field-specific standards will be an important aspect of a successful policy that makes clear to researchers what is required. Research societies are the ideal partners for federal agencies in developing these standards.

Doing so will directly address one major aspect of the reproducibility challenge and, with sufficient ramp-up time, we believe there is an opportunity for Federal agencies to work toward the development of an International Research Data Commons that links storage solutions together and provides a seamless mechanism for crediting scientists for their data and publications.

International Research Data Commons. There are excellent examples, across the sciences, of publicly available databases for the storage of highly structured monotypic data (e.g., GenBank, the Protein Data Bank in the biological sciences). These databases are of enormous value to the scientific community and we should seek to establish similar databases where clear opportunities for research acceleration arise. But while the lessons learned from these repositories are important, it is unrealistic to think that the increasingly broad array of data-types will be well-served solely by monotypic databases.

There remains an extraordinary opportunity to liberate the large amounts of heterogeneous data that do not fit neatly into existing monotypic databases. Moving toward open, machine readable, interoperable, and publicly accessible standards as the norms for all scientific research data will require a scalable effort to establish mechanisms for storing, sharing, finding, and using data. We feel that research societies are ideally placed to work with Federal agencies to develop standards

³ As an example, PLOS introduced data requirements for authors in 2014 and has now published over 130,000 articles with the underlying data available. Over the past 12 months, these datasets have received over 30M views and downloads.

⁴ <https://www.go-fair.org/fair-principles/>

for field-specific common data types, and the creation of these standards should be encouraged and funded.

We believe that a combination of publicly-funded, not-for-profit, and commercial databases, all following the same standards and policies, will be critical for the open availability of research data and code.

Improving Scientific Methods Reporting. While open availability of data is important, the quality of that data cannot be determined without a clear picture of how that data was obtained. The information contained in the methods section of the overwhelming majority of research publications is insufficient to definitively evaluate research practices, let alone reproduce the work. Further, the reuse of detailed research methodologies has enormous potential for both time and cost savings, as well as accelerating the pace of research. The lack of detailed methodology reporting has been the case for decades, largely driven by a print-dominant publication model aimed at reducing the number of pages in journal issues and a lack of incentives to improve methods reporting. We believe that in a digital era, this is an anachronism that could be reasonably addressed if the right incentives were established through public policy.

Over the past two decades publishers have launched a series of methods and protocols publications that aim to capture the critical details of experimental science. Such publications have generally done well in the marketplace, but, in reality, were never designed to solve the larger issue that most scientific publications insufficiently document the experimental method. Other efforts by individual publishers or journals to increase disclosure of methods and protocols have led to incremental improvements in reporting, but, similarly, are not intended to address the systemic failures.

We see this as an urgently important opportunity. Resolving this problem will require policies that create incentives for researchers and publishers. Requiring and recognizing the reporting of detailed experimental methodologies as valuable research outputs creates incentives for scientists through additional recognition of their work. For publishers, this recognition and requirement would create potential business opportunities for new services that could be offered to the research community.

We believe the first step toward accelerating progress in this area would be for Federal agencies to be directed to work with the research community and publishers to develop new standards for reporting and crediting methodologies. Common standards are proving invaluable for the recognition and reuse of open data, and the same principles could be applied to open methods. Collective action will reduce confusion and effort by scientists, and place all publishers on an equal playing field (and at an advantage over those publishers who choose not to participate). Without a level playing field, collective action will be stymied by differences between publishers that confuse authors and create disincentives to engage in better practices.

Incentives and Recognition. The scholarly publishing ecosystem is built around the need for researchers to communicate and receive credit for their work. The Journal Impact Factor (JIF) has become a dominant metric in this ecosystem, but is regularly misused as a means to evaluate the relative contribution of researchers to their field. Measuring researcher impact via metrics

such as JIF has many drawbacks. As we move toward a more open science ecosystem, there is an opportunity to evolve research assessment and evaluation. Funding agencies, research administrators, researchers, and community-driven scholarly societies should be part of developing more effective research assessment and evaluation tools and we believe that Federal agencies should be directed to drive this conversation and help create the incentives necessary for the evolution of hiring, tenure, and promotion systems that better reflect the value of research contributions.

We sincerely hope that you will include such directives as described above in any action that you choose to take. We are ready to discuss what these processes could look like and believe that the outcome of such activities could drive research progress and positively transform science toward a more open state.

Summary

We believe that appropriate public policy should drive an increase in access, reproducibility, and interoperability of scientific communications, research data, and methods. However, we are concerned that a directive that rapidly requires immediate access to the version of record of research publications will have devastating financial impacts on scientific societies and the journals they publish. It is vital that any such transformation for publications, data, code, and research methods must be carefully assessed so as to be sustainable and not overly burdensome for the researchers who will be asked to comply with these changes.

There are immediate, productive activities that could be taken to broaden access to research results, including better enforcement of current policies, and the development of a broad array of approaches to support open access publication.

In a world moving toward open science, there is great value in focusing on the research itself, rather than just the articles written about the research. Requiring open access to research data, software code, and detailed research methodologies as detailed above will greatly improve reproducibility and accelerate progress.

We believe that Federal agencies should be directed to develop standards and policies requiring the data underlying the conclusions for scientific research publications to be made freely available in databases that conform to archival standards and that conform with FAIR data principles. This will require a ramp-up period for the development of infrastructure, coordination between agencies and nations, the development of standards for different fields and data types, and additional training and education for researchers.

Publishers are ready to require and enable data sharing requirements if funding agencies are able to work with us to develop standards for which data are required to be shared, develop standards for what constitutes a sufficient archival solution, and provide ramp-up time for the requirement to begin, but there is also a need to make data useful and findable. A data commons platform that allows for seamless search, retrieval, and interlinking of data and content is necessary to create a robust data sharing ecosystem. We are prepared to work with agencies to ensure that such an ecosystem can be developed, but it will require agencies to work together to create a commons platform and standards in support of data sharing.

The publishing community is ready to embrace and adopt new standards for describing research methods and improve their openness and transparency, but there is no effective mechanism for collective action. Directing Federal agencies to work with publishers and scientific societies to develop new standards and require researchers to conform with such standards once in place can fundamentally improve the way research is understood. We believe that open methods are one of the most important ways to improve efficiency and reproducibility in research reporting.

We are ready to work with you and discuss these ideas further including presenting more detailed options for implementation. Please feel free to contact us at Contact@PublishersforProgress.org

Sincerely,

Colette E. Bean, Chief Publishing Officer, American Physiological Society

Amy Brand PhD, Director, The MIT Press

Angela Cochran, Managing Director and Publisher, American Society of Civil Engineers

Alison Denby, Vice President Journals, Oxford University Press

John S. Haynes, CEO, AIP Publishing

Alison Mudditt, CEO, PLOS (Public Library of Science)

Diane Scott-Lichter, Senior Vice President, Publishing, American College of Physicians

Diane Sullenberger, Executive Editor, PNAS (Proceedings of the National Academy of Sciences)

Alexandra Vance, CEO, GeoScienceWorld

May 6, 2020

The Honorable Kelvin K. Droegemeier
Director, White House Office of Science and Technology Policy
Executive Office of the President
Eisenhower Executive Office Building
Washington, DC 20504

Dear Director Droegemeier,

As you and your colleagues contemplate changes to policies regarding public access to peer-reviewed scholarly publications of federally funded scientific research, as research managers of higher education institutions in the Midwest we ask that you consider our views outlined below.

Summary:

Hasty elimination of an embargo period for federally-funded peer-reviewed publications will have disproportionate negative impacts on the research productivity of a majority of U.S. higher education institutions, particularly R2, R3 and HBCU institutions. Any transition to immediate open access for publications must be accompanied by mechanisms that ensure institutions of all sizes and demographics have equal opportunity to participate in the national research enterprise. Locking these voices out of communicating their discoveries would limit discovery and innovation to the detriment of our nation's leadership in research.

Discussion:

R2, R3 and HBCU institutions are crucial to training the U.S. STEM workforce and to U.S. innovation.

Emerging research-intensive institutions, such as R2s, R3s and HBCUs, are vital to the democratization of science because of their location, accessibility, student body demographics, and workforce training. In the field of physics, for example, institutions outside the top 20 R1s are the engine of the U.S. STEM workforce, generating 70% of the nation's PhDs. In addition, these schools are a critical source of diversity in the U.S. STEM workforce, often having high proportions of students from underrepresented minorities. Together, they provide an essential diversity of experience that enables broad-impact innovations from the U.S. research enterprise.

R2, R3 and HBCU institutions, and the students they serve, have limited resources for research and will be disproportionately impacted by a transfer of publication costs to the author or institution.

The resource gap between R2s, R3s and HBCUs and the largest research institutions (*i.e.*, R1 institutions) threatens this democratization. The National Science Foundation (NSF) Higher Education Research and Development (HERD) survey, which reports a total of \$79 billion in R&D expenditures in 2018, helps illustrate this disparity. According to the survey, the top 160 (20%) institutions, which roughly correspond to the R1s, account for \$71B (90%) of the total funding. Conversely, the bottom 760 (80%) institutions reporting research activity enjoy only

\$7B (10%) of the total national research funding. This resource gap could also become a substantial publication gap, as publication costs are transferred onto authors, which particularly impacts early career faculty.

University subscriptions at R2, R3 and HBCU institutions cannot be immediately transferred to cover publication charges.

One might imagine that redeployment of institutions' subscription funds offers a compensatory path; however, to expect these funds to be reallocated to authors for publication charges is unrealistic. Most institutions are suffering from decreasing revenues because of demographics and state disinvestment in higher education. Libraries and institutions will likely use these funds elsewhere, or at the very least, there will be stiff competition for these funds. Redirecting subscription funds in a manner that does not compensate for increasing publication costs will be exacerbated by the lack of a national mechanism overseeing reallocation of funds to publication costs. Resource-rich institutions are most likely to have the means to fund publications costs, but the majority of institutions will have limited resources to do so.

The most equitable manner for maintaining discipline-based peer review and limiting the negative impacts on emerging research institutions would be for the federal research funding agencies to provide funding for publication costs, but only if used for professional journals. Funds should be added to the grants, rather than redeployed from other direct costs, to avoid decreased research activity.

Conclusion:

Rapid elimination of the current embargo period, without a compensatory source of publication funds, would disproportionately and negatively impact the research productivity of a majority of U.S. higher education institutions that are essential for training a diverse U.S. STEM workforce.

Sincerely,

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David E. Ash
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George Chase
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Gary R. Kinsel
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Southern Illinois University Carbondale

Terri Goss Kinzy
Vice President for Research and Innovation
Western Michigan University

Rachel McGinnis
Director, Office of Research Administration
Missouri State University

James T. Oris
Vice President for Research and Innovation
Miami University, Oxford Ohio

Wade Tornquist
Interim Associate Provost and Associate Vice President for Graduate Studies and Research
Eastern Michigan University



Lisa Nichols, Ph.D.
Assistant Director for Academic Engagement
Office of Science and Technology Policy
Washington DC
May 5, 2020

Dear Dr. Nichols,

I serve as the Executive Director of the [Health Research Alliance](#). HRA is a membership organization of over 90 nonprofit funders of biomedically-related research. HRA's mission is to work collaboratively to **maximize the impact of research funding** to improve human health. I believe that open access to research outputs is one important way we can multiple the impact that research funding has on both society and the economy. I am *not* writing on behalf of the HRA, but my comments are informed by my experience working for a nonprofit medical research organization for 20 years before moving to HRA, and while at HRA working on behalf of many disparate nonprofit funders of biomedical research. I *can* speak for HRA in saying we do appreciate the attention OSTP has paid to this issue, especially in reaching out to such a wide variety of stakeholders.

Introduction

I am writing as a member of the philanthropic sector, but also as a scientist, a taxpayer, a patient, a caregiver, and a parent. I strongly believe that the United States needs the Federal Government to take the lead on opening up the outputs of research. This strategy will lead to both an increase in national competitiveness and an increased return on our investment in research. To realize this potential, we need a strong national policy that enables other sectors to emulate and implement best practices. It will also facilitate realigning the incentive structure, so our scientists get rewarded and not penalized for sharing the outputs of their research. This is one of the biggest barriers to the open sharing of research outputs and only a national policy can eliminate this barrier.

What current limitations exist to the effective communication of research outputs (publications, data and code), etc?

Access is Knowledge. Knowledge is Power. Fostering social justice and addressing health disparities depends on everyone having equal access to scientific research. Why should patients and caregivers have to pay to read about the side effects of treatments, if research that brought that drug to the clinic was funded by their tax dollars? Why should scientists and educators at community colleges, minority-serving institutions, and other less wealthy institutions not have access to the same research outputs that those at private institutions with large endowments have? The US government spends billions of taxpayer dollars on research. We should all be able to reap the benefits of that research. This does not just mean that we are able to download a pdf. Society can only benefit from the research if those outputs (data, code, manuscripts, etc.) are made freely available in a manner that can be accessed not only by man

but also by machine. Current limitations include lack of incentives for sharing outputs, lack of even minimal standards for sharing, and of course lack of resources to lower the barriers to sharing research outputs.

As mentioned above, there are no tangible incentives for a researcher to share his/her research outputs. In fact, this behavior is widely disincentivized. Researchers are encouraged to publish their research in high profile journals with high journal impact factors (JIF), which are rarely Open Access. Researchers, especially Early Career Investigators, believe that they need to have papers in these journals to move up the academic ladder. The perception is that researchers need to have manuscripts in these journals to have a competitive application (both for faculty jobs and for funding) and then as part of their promotion and tenure package. They believe academic institutions and funding agencies use JIF as a significant factor in the review. Unfortunately, at many research institutions and for many funding organizations this is true. If funders or researchers choose to pay Article Page Charges to open up publications, the cost is significant. Article Page Charges have almost doubled over the past decade and one can say that paying APCs is basically rewarding bad behavior. If researchers choose to publish in Open Access journals, they often receive lower evaluation scores, based on the name of the journal.

With respect to sharing their data in a Findable, Accessible, Interoperable and Reusable manner, researchers are disincentivized in doing this as well. They are afraid that if they share their data before they have pursued as many lines of research as possible, others could use their public data to make a scientific discovery that they or their trainees could have made.

In addition to the fear of others using others' data to make discoveries without crediting the original data generator, it is also costly to curate data that complies with the FAIR principles. There is no norm for who pays for this data curation and data storage. Also, how do researchers know in what repository they should share their data? What are the standards for data sharing? In fact, the question of exactly WHAT data to share is not trivial. What metadata is necessary for others to use the data? We need the Federal Government to set policy that would result in creating best practices and standards, and thus enable the sharing of data to be the norm and behavior that is rewarded not penalized.

What can Federal agencies do to make taxpayer funded research results, freely and publicly accessible?

The Federal Government can create a strong, clear, and well-resourced policy to ensure that scientists, educators, patients, caregivers, policymakers and all taxpayers have access and ability to use the complete results of the scientific research funded by tax dollars.

A robust federal policy will not only set standards that federally funded researchers should follow, it will enable nonprofit funders to also implement these standards and give them the tools to enforce compliance. The barriers to publishing open access and sharing data should be as low as we can make them. Having consistent guidelines is important and the federal government needs to lead the way in establishing these guidelines. To be able to comply with

these guidelines, researchers, funders, and others in the scientific community need support. We need resources that share clear instructions and best practices. We need guidance on how stakeholders can and should reward open behavior. We also need to put in place metrics for evaluation to make sure everyone is complying with the new policies and put in place consistent actions to be taken when the policies are not followed. We need our researchers to know they will be rewarded for sharing their research outputs and not penalized for sharing, but instead penalized for NOT sharing.

As a start, the NAS Roundtable for Aligning Incentives has drafted language that can be added to applications for funding and progress reports but can also be added to applications for academic positions and promotion and tenure guidelines. This language is just a first step. It sends a signal to researchers that this behavior is valued, and studies have shown that signaling a behavior is valued can lead to increases in that behavior. An example of that language is included below.

“The National Cancer Institute values the open sharing of research outputs. If applicable, describe

- 1) instances where you have engaged in "open" activities (such as making articles open access and sharing data/code according to FAIR principles)***
- 2) examples of how your open research outputs have been used by others in your discipline, in other disciplines, and/or outside of academia (include DOIs if possible), and***
- 3) plans to engage in open activities in the future.”***

We need to start by showing researchers that we value this behavior, and this is one small step in that direction and can be a way to phase in requirements. In addition, I suggest that the NIH Biosketch instructions (and similar documents) be modified to include language like the following statement.

“If (public) sharing of your research outputs such as data, code, or material led to scientific advances by others, you are encouraged to detail that as well.”

But to really work, reviewers need to have guidance on how to evaluate this behavior when noted in cv’s and applications. We need to enable institutions and funders to use valid metrics for open behavior instead of metrics for journal impact factor, or geographical location of the lab, or “pedigree” of the scientist. But before we penalize for not openly sharing research outputs, we need to make it the norm. We do not want to have unintended consequence be that researchers who share are less competitive for faculty position than those who don’t, for example.

Many publishers already have robust policies for data sharing. But we can’t leave it up to publishers to dictate policy on data sharing. In addition, having researchers put in place the appropriate resources and infrastructure for sharing outputs at the start of the project is much more efficient than trying to comply with requirements at the time of publication.

How would American science leadership and American competitiveness benefit from immediate access to these resources?

Open sharing of research outputs multiplies the impact of the original research. By enabling others to build on the original research, in new and different ways and incorporating a variety of perspectives, the return on investment in research will be amplified. This will boost innovation and increase our national competitiveness. The philanthropic sector has realized the value of opening up access to funded research can play in increasing the return on research investments. I believe that taxpayers also deserve to see the return on their tax dollars multiplied. Even before any discussion of implementing a strong national policy that would enable other sectors to emulate and implement best practices, nonprofits understood the importance of providing immediate barrier-free access to the results of the research that they fund and have been working to foster that sharing. HRA members from the very large such as the American Heart Association to smaller organizations such as the Children's Tumor Foundation, the V Foundation and Alex's Lemonade Stand have all expended quite a bit of time and financial resources developing and implementing their policies. These organizations do not have the resources that the Gates Foundation or the Wellcome Trust have, yet have seen the value of devoting limited resources to implementing open policies. Though nonprofits are taking action, it is critical that the US government craft a strong national policy so we can have standardization, consistency, evaluation and iteration of the original policy.

Other countries have already acknowledged that providing open access to publicly funded research is a successful strategy to increase the return on the government's investment and have adopted open policies. The European Commission has a full Open Access policy for its articles and data. Canada recently announced a similar policy. Countries such as India, China, and Brazil have also implemented policies. The US is trailing most of the world in adopting policies that can accelerate scientific discovery and enhance national competitiveness. It is time we took the lead on developing policies that will help improve rigor and reliability of taxpayer funded research. Robust and adequately resourced policies will lead to more therapies to patients, more startup companies, increased enthusiasm for the scientific enterprise -- thereby boosting our economy and our leadership in the global scientific community.

I want to thank you again for your time and consideration of this important topic. Please do not hesitate to reach out to me for additional questions or clarification.

Sincerely,



Maryrose Franko
Executive Director, Health Research Alliance

May 6, 2020

Dr. Kelvin K. Droegemeier
Director, Office of Science and Technology Policy
Eisenhower Executive Office Building
1650 Pennsylvania Avenue, NW
Washington, DC 20504

Response to OSTP Request for Information – FR Doc. 2020-06622 – “Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting from Federally Funded Research”

Dear Dr. Droegemeier,

The American Society for Microbiology (ASM) appreciates the opportunity to provide our perspective and recommendations on how to ensure broad access to peer-reviewed scholarly publications, data, and code that result from federally-funded scientific research. As one of the oldest and largest life science societies with more than 30,000 members in the United States and around the globe, our mission is to promote and advance the microbial sciences.

ASM’s sixteen peer-reviewed journals, five of which are open access (OA), are fundamental to its mission and provide a critical service not only to our ASM members, but also to the advancement of the microbial sciences globally.

As you consider policies that affect nonprofit scientific publishers and their publications, we stand ready to work with you to ensure a thoughtful, balanced approach. ASM embraces the spirit of open access, and as a result, we have embarked on a journey to transform our publication business model to allow this transition to happen.

Given the scope, size, unique and indispensable function of the nonprofit, scientific society ecosystem in the United States, policy changes need to be made in a transparent, flexible and stepwise fashion. The uniqueness of the association world goes back to the foundation of American democracy, as noted by Alexis de Tocqueville in his landmark publication *Democracy in America*. If governmental decisions hinder, or even worse, hurt, this ecosystem, the unintended consequences could actually result in reducing access to the quality published scientific research provided by non-profit scientific societies in the United States. A key strength of this community is the diversity of its publishing operations. Each organization must be afforded the opportunity to find its own path forward and have the flexibility to adjust its business model to accommodate OA accordingly.

In addition to embracing the concept of OA, ASM believes that data availability and data sharing are critical to our mission to advance the microbial sciences. In October, we expanded our data policy to be more comprehensive and to apply across all of our journals, not just those that are open access.¹ Authors are now required to make their data publicly available (except in rare circumstances) in order to publish in any ASM journal, preferably by depositing it in publicly-accessible, curated and sustainable data repositories. While our new policy is not without challenges, we believe the open data policy benefits both authors and readers in the long run.

Below are more specific answers to the questions outlined in the RFI.

What current limitations exist to the effective communication of research outputs (publications, data, and code) and how might communications evolve to accelerate public access while advancing the quality of scientific research? What are the barriers to and opportunities for change?

A major barrier to effective communication currently is the continued reliance on what is essentially a static digital version of fiber paper, i.e. a “PDF.” Although the paper itself is valuable in that it tells the narrative of how the researchers conducted their work, there are yet unrealized opportunities in terms of linking the data that goes with the paper with the author’s narrative. Having the ability to link seamlessly and securely to underlying data would allow other researchers to build on previously published results. This in turn could improve the rigor of peer review if those data links were provided during manuscript submission.

ASM has seized the opportunity to change and moved to address this barrier through its new data policy, cited above. When authors deposit their data in a publicly-available repository, it receives a persistent, unique identifier, making it findable and citable. Readers then have access to the original underlying data described in a paper, enabling the reuse of that data either for reproducibility purposes or for entirely new analyses. In return, the original data generators (i.e. the authors) will receive credit for their work in the form of data citations. Formal data citations promote reproducibility and help identify how data are reused.

The federal government could help address this barrier by working with the community to establish more uniform standards around data archiving and sharing.

- **What more can Federal agencies do to make tax-payer funded research results, including peer-reviewed author manuscripts, data, and code funded by the Federal Government, freely and publicly accessible in a way that minimizes delay,**

¹ https://journals.asm.org/content/open-data-policy?_ga=2.31103164.223548841.1577910900-1577609744.1550589292

American Society for Microbiology

Response to RFI on Public Access to Peer-reviewed, Scholarly Research

May 6, 2020

maximizes access, and enhances usability? How can the Federal Government engage with other sectors to achieve these goals?

Scientific advances are predicated upon the principle that experiments and conclusions drawn from published information can be repeated and further advanced by others. The federal government can lead by taking thoughtful steps toward requiring open data such as ASM has done, but must do so with input from the nonprofit scientific publishers. One step the federal government can take is to establish expectations by publishing clear guidelines governing data stewardship for grantees, funds for data management, including archiving, and OA publishing. Working together, we can all ensure that historical barriers to scientific progress are not perpetuated.

Technology has increasingly transformed how science is conducted; for example, basic cell biologists and molecular biologists now use digital technologies for lab processes that previously were conducted with analogue approaches. The federal government can both establish standards for how metadata is captured and tagged, and encourage or incentivize companies that manufacture these new machines to harmonize their approaches to metadata underlying experiments. This would help provide consistency in data management and organization.

An example of this in microbial research is the technological advance away from using film images to digital images. Basic metadata can be captured through either method, but much richer data can be captured through the use of digital technology, which could provide greater insights into the underlying experiment.

- **How would American science leadership and American competitiveness benefit from immediate access to these resources? What are potential challenges and effective approaches for overcoming them? Analyses that weigh the trade-offs of different approaches and models, especially those that provide data, will be particularly helpful.**

Better and more rigorous requirements for data management solutions will lead to more rigorous peer review. A critical component of peer review is to piece together what the authors did to ensure results are both understandable and interpreted correctly. Better data management with metadata that provides crucial insight into exactly what was done and when would alleviate much of the guess work in peer review, and in turn enhance the quality of the science that is published.

But creating a peer review process that allows for open data sharing will require investment and technological development by the vendors that create the systems journals use for peer review. It also will require investments by companies that create the tools that scientists use to collect their data (e.g., to enable conversion of proprietary file types into open file types while retaining any underlying metadata). There may be a role for the federal government in facilitating or encouraging these investments.

American Society for Microbiology

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Much of the change needed, in addition to adjustments to business models, is cultural. Getting “buy-in” from the scientific community on issues like consistency of data will be challenging, but is necessary to enact lasting change in the way business is done. Hence, helping and incentivizing corporations that design and manufacture the machines that generate data to standardize their approaches to data management can help with standardizing data.

Conclusion

The American Society for Microbiology thanks the White House Office of Science and Technology Policy for the opportunity to provide input on this important issue, and we encourage you to continue the open dialogue you began earlier this year with nonprofit scientific publishers and other stakeholders. Through open communication and by working together, ASM is confident that we can move boldly toward a world of open science, while also preserving the critical organizational infrastructure, including the financial health of nonprofit scientific societies, that has been foundational to publishing research in this country.

ASM and its members look forward to next steps in this endeavor and stand ready to assist you. For more information, please contact Allen Segal, ASM Director of Public Policy and Advocacy, at asegal@asmusa.org or 202-942-9294.

Sincerely,

A handwritten signature in black ink, appearing to read 'Stefano Bertuzzi'.

Stefano Bertuzzi, PhD
ASM Chief Executive Officer



May 4, 2020

Dr. Lisa Nichols
Assistant Director for Academic Engagement
Office of Science and Technology Policy
Submitted via email: OpenScience@ostp.eop.gov

RE: Document ID [OSTP-2020-03189](#) Request for Public Comment on Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research

Dear Dr. Nichols:

We write on behalf of the University of California (UC) San Diego to respond to the Request for Public Comment on Draft Desirable Characteristics of Repositories for Managing and Sharing Data Resulting From Federally Funded Research issued on January 17, 2020.

UC San Diego is one of ten campuses in the UC system. With over \$1.3 Billion annually in funded research expenditures, UC San Diego is a major recipient of federal funding. Through our research and academic programs UC San Diego's economic impact to the San Diego community is estimated at over \$16.5 Billion and 100,000 jobs.

UC San Diego strongly values open science and open access to scholarship and is supportive of the efforts of the Office of Science and Technology Policy (OSTP) to advance work in these areas. In 2013 UC Faculty adopted an [Open Access Policy](#) and in 2018 the Academic Council endorsed the [Declaration of Rights and Principles to Transform Scholarly Communication](#). Faculty lead and direct the system's open access initiatives in partnership with the libraries, and are critical to UC's pursuit of open access transformation.

As part of this support UC San Diego faculty endorsed the signature of the OA 2020 Letter of Interest to foster "the transformation of today's scholarly journals from the current subscription (paywall) system to new open access publishing models that enable unrestricted use and re-use of scholarly outputs and assure transparency and sustainability of publishing costs (OA 2020)."

Zero-embargo policies will accelerate the transformation to open access

UC San Diego supports a zero-embargo policy for author accepted manuscripts and affirm that such a policy represents a measured step forward, in alignment with UC's mission to serve society and provide long-term benefits through the transmission of research and knowledge.

Science is improved through peer review and the curation of publications, data and code. High quality review and sustainable scholarship requires sustained partnerships with the societies and organizations that ensure the generation, review, publication, discoverability and preservation of high-quality science. As such, UC San Diego affirms the role of scholarly societies in scholarship and believes that active partnerships with societies during this period of transition will help scholars lead the transformation to open access. A zero-embargo policy will motivate this transition to sustainable and open scholarly publishing models.

The sharing of published scholarship and the connected data and code is critical to support open science

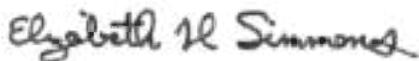
Open science is only enabled when researchers can have access to and understand the work underlying published results. By publishing the data and code used in the generation of scholarly publications researchers help advance science and increase the impact of publicly funded research. The availability of data and code is only meaningful if they are managed in such a way that enables discovery, analysis and re-use. As such UC San Diego endorses the OSTP's work to standardize characteristics for data sharing 85 FR 3085 and believes that a similar standardization process is important to foster the sharing and re-use of software code.

Human subjects privacy is paramount in the sharing of data and code

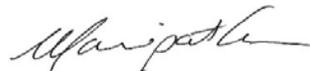
The effort to make science more accessible and repeatable through open access, open data and open code should not be confused with a continuing commitment to the privacy and protection of human research subjects. Recognizing that in our data-intensive environments even de-identified data cannot always protect subjects, we recommend that OSTP develop guidelines that will help federal funders and awardees design and implement practices that support open scholarship in context of the need for the privacy and protection of human subjects.

Thank you for the opportunity to comment on this topic. We look forward to OSTP's continued work in this area and will readily engage the process and policies and guidelines are developed.

Sincerely,



Elizabeth H. Simmons, Ph.D.
Executive Vice Chancellor
University of California San Diego



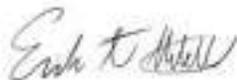
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Sandra Brown, Ph.D.
Vice Chancellor for Research
University of California San Diego



Steve Constable, Ph.D.
UC San Diego Academic Senate Vice Chair
Distinguished Professor of Geophysics
University of California San Diego



Erik Mitchell, Ph.D.
University Librarian
University of California San Diego

Radical OSTP Proposal Would Undermine American Research and Sacrifice American Intellectual Property

Adam Mossoff

KEY TAKEAWAYS

An Office of Science and Technology Policy policy proposal would give away U.S. intellectual property, undermining U.S. trade positions and weakening U.S. leadership.

America's Founders understood citizens would only engage in productive labors if the fruits of their labors were secured to them under law.

The Trump Administration should reaffirm the vital role copyright serves in securing the productive labors of those who create and disseminate journal articles.

Over the past three years, the Trump Administration has placed a high priority on protecting American intellectual property (IP) from foreign theft—especially by China. The Administration's concern about protecting U.S. creators and innovators is one of the principal reasons for its trade war with China. The Trump Administration understands the importance of American IP in spurring innovation, creating jobs, driving more exports, and growing the economy.

Paradoxically, one division of the White House—the Office of Science and Technology Policy (OSTP)—is considering a new policy that conflicts with these key economic priorities of the Trump Administration. The OSTP policy would force private American IP owners to forfeit their valuable property for “free,” permitting China and the rest of the world to take advantage of and benefit from the fruits of their labors.

This paper, in its entirety, can be found at <http://report.heritage.org/lm263>

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Nothing written here is to be construed as necessarily reflecting the views of The Heritage Foundation or as an attempt to aid or hinder the passage of any bill before Congress.

In sum, the OSTP policy would allow China and others around the world to take U.S. IP without having to steal it.

Under the proposed OSTP policy, if a copyrighted, peer-reviewed journal article reports on or discusses research that was funded with only *one cent* by a government grant, the journal article—a product created with private, nongovernmental investments that is distinct from the underlying government-funded research—must be made freely available online immediately upon publication.¹

The OSTP proposal builds off an incredibly aggressive Obama-era regulatory framework that requires free distribution of journal articles no later than one year after publication, reducing the effective copyright term for these articles from “life of the author plus 70 years” provided under the Copyright Act to just one year. The OSTP proposal would not only reinforce the Obama-era regulation, it would push it even further, essentially nationalizing private property by eliminating even the one-year effective copyright term that the Obama Administration left intact.

Copyright and Its Role in the U.S. Economy

To understand the significance of this proposed policy, it is first helpful to understand the economic importance of safeguarding the IP right at issue—copyright. Our Founding Fathers understood the importance of copyrights, as they empowered Congress in Article 1, Section 8, Clause 8 to secure copyrights under federal law—placing the protection of this “exclusive right” on par with Congress’s other powers to create an army and navy, create federal courts, and declare war. They understood that the nascent United States of America would grow on the basis of the creative and innovative labors of its citizens, who, just like a farmer, would only engage in these productive labors if the fruits of their labors were secured to them under law.

As James Madison explained in *The Federalist No. 43*, the “utility of this power [to secure copyrights and patents] will scarcely be questioned.... The public good fully coincides in both cases with the claims of individuals.” Thus, it is unsurprising that the First Congress, which included James Madison and many of the other Framers of our Constitution, passed the Copyright Act of 1790 as one of its first legislative enactments.

The Founders proved prescient, as the importance of protecting IP rights like copyright in promoting economic growth is indisputable. In 2017, core copyright industries added more than \$1.3 trillion in value to U.S. gross domestic product, accounting for 6.85 percent of the economy.² Relative to other sectors of the U.S. economy, these industries grew at a rate 137 percent faster than the remainder of the economy.³ These industries employed more

than 5.7 million workers, accounting for more than 4.5 percent of the entire private-sector workforce in the U.S.⁴ Finally, these are good jobs, with an average annual compensation of \$98,336, which is 39 percent higher than the average U.S. annual wage rate.⁵

Globally, copyrighted works are one of the strongest exports of the U.S. In 2017, companies and individuals in the U.S. made over \$190 billion in foreign sales of copyrighted works and products.⁶ This was far more than many other well-known sectors of the U.S. economy that year. It was, for instance, more than the total foreign sales of electronic equipment (\$174.2 billion), agricultural products (\$138.2 billion), chemicals (\$137.0 billion), aerospace products (\$134.4 billion), or pharmaceutical products and medicines (\$55.8 billion).⁷

In sum, copyrighted works are one of the crown jewels of the U.S. domestic economy—and they certainly are a crown jewel of U.S. exports, contributing significantly to the positive balance of trade. It is therefore deeply concerning that the OSTP would consider a policy that would significantly undermine American copyright protection both domestically and abroad.

The Flawed Justification for the OSTP Proposal

The OSTP proposal would mandate that any journal article reporting on any research funded with even one cent from the federal government must be made available for free for anyone in the world to access and copy. Supporters of this proposal argue that if the government funded some portion of the underlying research, then U.S. taxpayers deserve free access to articles discussing this research.

But there is a subtle equivocation in this argument: *The journal articles are not the same thing as the basic research that was funded by federal grants.* On the one hand, the research is the data and other information collected in the laboratory. On the other hand, the journal articles are privately funded and produced by professional associations, scientific and medical societies, and commercial publishers.⁸

These private organizations do not receive federal funding to publish these journal articles, and they invest hundreds of millions (if not billions) of dollars producing these articles, running peer-review systems, editing and enhancing articles, and creating online databases and interconnected citation networks to make the high-quality, peer-reviewed, standardized, networked, and accessible articles that researchers, doctors, scientists, scholars, and academics have come to rely on.⁹

Many people believe that, in our modern digital world, publishing is zero cost, but this is deeply mistaken.¹⁰ As economist Mark McCabe has observed, his fellow academic “economists knew the value of their journals, but not their prices.”¹¹ There are substantial capital and labor costs in running and managing initial review, peer review, editing, and publication of millions of submissions and published articles—a process that is performed by tens of thousands of highly skilled journal employees and paid editors across the country.¹² There are additional massive costs and investments in capital and highly skilled professional labor in creating and maintaining the digital infrastructure that delivers up-to-date, standardized, networked, reliable journal articles to readers around the world through sophisticated platforms. The data confirms that even just this second component involves up-front investments and ongoing expenditures that run in the hundreds of millions of dollars annually—and ultimately billions of dollars.¹³

In sum, taxpayers may have paid for part of the underlying research that is reported on in a journal article, but taxpayers did not pay for the billions in downstream commercial investments and activities that create these articles and make them so useful to the scientific and medical communities.¹⁴

Exposing this equivocation in the alleged justification for the OSTP proposal makes clear exactly what the OSTP is considering doing to an innovative and flourishing sector of the U.S. innovation economy—the scientific and medical publishing industry. The OSTP proposal would decimate this industry by eviscerating its market-based business models on the grounds that its privately produced downstream products—peer-reviewed, edited, standardized, digitally formatted, and networked articles—must be given away for free to anyone in the world because these articles report on federally funded upstream research.

If the logic of the OSTP proposal was applied consistently by the Trump Administration, this would justify the destruction of many private companies and their business models in which they sell products in the free market. For example, it would justify the government mandating that Ford Motor Company must give away its automobiles for free if Ford incorporates in its automobiles products and services based on data from researchers who received government funding in any respect, such as federally funded safety testing of automobiles and their components. Similarly, if a *Wall Street Journal* article reports on a research study that was funded even in small part by a government grant, then according to the policy rationale of the OSTP proposal, the *Wall Street Journal* must give its article away for free to everyone in the world because it discusses federally funded research.

There are hundreds of thousands of privately produced products that discuss, leverage, or otherwise benefit from upstream government-funded research for which the government claims no ownership stake. And for good reason. If the government required free distribution of downstream products merely by virtue of the fact that they benefit in even the slightest amount from upstream activities that received some government funds, there would be no investments or productive activities to create a free market. The pharmaceutical industry, for instance, would not invest annually more than \$129 billion in private funding of research if the \$43 billion in federal grants from the National Institute of Health meant that all derivative products of this research and development—new medical devices, diagnostics tests, drugs, and vaccines—must be given away for free.¹⁵

The private sector should be left free to make investments and develop new products and services, regardless of whether the government funds upstream activities in research or even funds the public schools and universities that educate people who later work in this private sector. Private companies and organizations should own the products and services that result from their own investments in time, labor, and capital.

Instead of considering policies to encourage more private-sector investment in efficiently producing peer-reviewed journal articles that discuss federally funded research, the OSTP proposes to actively decimate market-based business models and make any future private-sector investments in producing these articles impossible, given the effective nationalization of the product (in this case, peer-reviewed journal articles).

Reasons for Concern

The OSTP's proposed policy is alarming for at least two reasons. First, it would be shocking for an Administration that promotes reliable and effective IP rights and the free market to undermine private-sector investment in order to substitute it with nationalization of IP-based products and increased government spending. Once it becomes economically impossible under the OSTP proposal for the private sector to invest in and develop business models to produce reliable, standardized, networked, peer-reviewed articles, the cost of doing this will not go away. Who then will be left bearing this inescapable cost of production of journal articles? The most viable source of funding will be the government.

As a result, taxpayers would be forced to pay twice: They will pay taxes to fund the research, and then they will pay more taxes to fund the downstream

publications reporting on this research. But it does not have to be this way, given the existence of a vibrant private-sector publishing industry that, absent unnecessary regulation, is perfectly willing to invest in producing these downstream publications.

Second, and equally concerning, the OSTP proposal would have a significant impact on U.S. exports of these copyrighted journal articles. It would effectively amount to the U.S. federal government subsidizing global consumption of this valuable U.S. IP. In order to give these copyrighted articles away for free to others, OSTP would have scientists and their government funding bodies “pay-to-publish” each work. Under this inverted model, the U.S. research community would need to cover 100 percent of the financing of U.S. scientific publications for the rest of the world to read for free—while China and the rest of the world sit back and reap the benefit.

In short, U.S. researchers and taxpayers would be burdened by OSTP’s new intrusive regulation, while Chinese and other non-U.S. researchers would operate unburdened, able to publish their works for free (keeping them under subscription for people to pay to read) and not having to pay any subscription fees to the publishers of American research. Taxpayers would then not only be paying twice, they would also be paying for consumers in other countries, such as China, to access and use the U.S. journal articles reporting on this research.

OSTP Proposal Undermines U.S. IP Exports and Research Leadership

Peer-reviewed scientific and medical articles published in the U.S. are the gold standard globally. Companies, hospitals, universities, libraries, and other customers in Asia, Europe, and numerous other foreign countries collectively pay billions of dollars annually for copyright licenses to access and use articles published in U.S. journals. Approximately 59 percent of journal revenues come from outside the U.S., and this share is likely to grow in the coming years, especially from customers in Asia.

In brief, journal articles are an important and valuable U.S. IP export, albeit often overlooked by many who focus on more recognizable IP exports in consumer goods, such as high-tech mobile devices or pharmaceuticals. Furthermore, since the U.S. is already the leader in this sector of the global economy, there is significant opportunity to *expand* these exports in the coming years. Given the current Administration’s stance on increasing exports and reducing the trade deficit—particularly with respect to China—one would expect OSTP to be sensitive to how its proposed policies

concerning copyrighted journal articles would impact U.S. organizations' ability to continue exporting these articles throughout the world. Unfortunately, the opposite appears to be the case.

The OSTP proposal would essentially eliminate this entire class of exports, forcing U.S. IP owners to give their copyrighted works away for free to China and the rest of the world. As a result, the U.S. would lose billions of dollars in foreign sales. Even worse, given that the federal government would be forced to fund the production of this IP under the OSTP proposal—paying with taxpayer funds for the hundreds of millions (if not billions) of dollars spent annually in organizing peer review, editing, formatting, standardizing, and networking and distributing reliable and high-quality journal articles—the U.S. federal government would effectively *subsidize* the consumption of U.S. journal articles that customers in foreign countries are currently paying for, and are perfectly willing to pay for, given the billions they already spend.

The OSTP proposal is completely out of step with the Administration's oft-stated goal of *safeguarding* American IP against free-riding by foreign governments and entities, and it would significantly damage U.S. competitiveness on the global stage at the very moment that China is challenging U.S. leadership in research innovation.

The OSTP proposal undermines vital copyright protections that sustain the scientific and medical publishing industry. It undercuts the incentives provided by reliable and effective property rights—copyrights—that lead to the investments necessary to produce high-quality scientific and medical journals.¹⁶ It also jeopardizes the quality and quantity of American peer-reviewed journals, which serve a key role in communicating and advancing U.S. scientific research. Moreover, U.S. scientific societies that publish these journals serve an essential role in fostering and supporting American scientific, medical, and engineering talent.¹⁷ Casting aside this world-leading framework would do untold damage to the U.S. research ecosystem.

Chinese Ambitions

Meanwhile, China is actively working—through incentives like governmental subsidies—to increase the quality and quantity of Chinese journals.¹⁸ These efforts include bolstering funding for Chinese journals and revising how China assesses its researchers in order to discourage Chinese researchers from publishing in non-Chinese journals.¹⁹ If OSTP is permitted to erode the quality of U.S. research publications and undermine the scientific and medical societies and professional associations supported by these journals

that are core to supporting American researchers, China would be more than happy to step into the resulting void.

China has already made clear that it views the creation of world-renowned research journals as a key step in its efforts to become the global leader in research and innovation. This is integral to its long-term goals of dominating the cutting-edge fields of next-generational innovation like AI, just as it is currently working to dominate the deployment of 5G today.

The U.S. should not adopt policies that, in effect, actively support and subsidize China's domestic industrial and innovation policies—and it certainly should not do this when this directly contradicts the current Administration's explicit policies on trade and IP with China and the rest of the world.

Conclusion

It is surprising that OSTP would consider a policy that turns the promise of federal research programs in the U.S. into a worldwide giveaway that weakens U.S. trade positions, subsidizes the access and use of this research by China (and the rest of the world), and ultimately weakens U.S. global leadership in science and medicine.

It is even more surprising, given that the OSTP proposal, which effectively nationalizes *hundreds of thousands* of copyrighted journal articles and creates a worldwide giveaway of the results of billions of dollars in both private and public funding of U.S. research, runs counter to the current Administration's policies on supporting strong IP protections and on countering the rising global challenge presented by China.

The OSTP proposal is not just at odds with current U.S. policies concerning trade and innovation, it is fundamentally counter to the constitutional function of copyright to promote the progress of science.²⁰ As the Supreme Court has recognized, copyright is “the engine that ensures the progress of science,”²¹ because “copyright supplies the economic incentive to create and disseminate ideas.”²² The professional associations and publishers that invest billions to create the tens of thousands of academic journals published each year exemplify this fact.

The Administration should not permit OSTP to eviscerate this key constitutional and economic function of copyright law. Nor should it allow OSTP to contradict its own policies on trade and IP. It should join with the Senators and Representatives, as well as hundreds of professional organizations and publishers, who have already raised serious legal, policy, and economic concerns about the OSTP proposal.²³ Thus, the Administration

should reject the OSTP proposal and reaffirm the vital role that copyright serves in securing the fruits of the productive labors of those who create and disseminate journal articles.

Adam Mossoff is Visiting Intellectual Property Fellow in the Edwin Meese III Center for Legal and Judicial Studies at The Heritage Foundation, a Professor of Law at the Antonin Scalia Law School of George Mason University, and a Senior Fellow at the Hudson Institute.

Endnotes

1. While OSTP has not released the text of the proposed policy, news broke in December 2019 about an Executive Order under consideration that would require immediate free access to these articles. See, e.g., Rebecca Trager, *American Scientific Publishers Panic Over Paywall Policy Rumors*, CHEMISTRY WORLD (Dec. 23, 2019), <https://www.chemistryworld.com/news/american-scientific-publishers-panic-over-paywall-policy-rumours/4010959.article> (last visited Apr. 27, 2020); David Kramer, *Potential White House Open-Access Edict Could Upend Scientific Publishers*, PHYSICS TODAY (Dec. 19, 2019), <https://physicstoday.scitation.org/doi/10.1063/PT.6.2.20191219a/full/> (last visited Apr. 27, 2020); Lindsay McKenzie, *Concern Raised Over White House Open-Access Policy*, INSIDE HIGHER ED (Dec. 20, 2019), <https://www.insidehighered.com/quicktakes/2019/12/20/concern-raised-over-white-house-open-access-policy> (last visited Apr. 27, 2020). The proposed Executive Order prompted serious concerns from Republican Members of Congress, scientific and medical societies, trade associations (e.g., the U.S. Chamber of Commerce, the Association of American Publishers, the Copyright Alliance, and the Software and Information Industry Association), and many others, which appear to have stalled the Executive Order. Nonetheless, OSTP is still actively considering the issue, including through a pending Request for Information that shockingly makes no reference to intellectual property or U.S. IP exports. See <https://www.federalregister.gov/documents/2020/03/31/2020-06622/request-for-information-public-access-to-peer-reviewed-scholarly-publications-data-and-code>.
2. Stephen E. Siwek, *COPYRIGHT INDUSTRIES IN THE U.S. ECONOMY: THE 2018 REPORT*, <https://iipa.org/files/uploads/2018/12/2018CpyrtRptFull.pdf> (last visited Apr. 27, 2020).
3. *Id.*
4. *Id.*
5. *Id.*
6. *Id.*
7. *Id.*
8. For a sense of the breadth of organizations that produce these articles, it is worth reviewing the list of over 100 American academies, associations, and societies that joined a December 18, 2019, letter to the President raising significant concerns with the OSTP's proposed policy. The letter is available at <https://presspage-production-content.s3.amazonaws.com/uploads/1508/lettertothepresidentfrom140researchandpublishingorgs-2.pdf?10000>. Among many others, signatories include the Infectious Diseases Society of America, the American Heart Association, the American Cancer Society, the American Medical Association, the New England Journal of Medicine, the American Institute of Chemical Engineers, the American Institute of Aeronautics and Astronautics, and the Crop Science Society of America.
9. See Adam Mossoff, *How Copyright Drives Innovation: A Case Study of Scholarly Publishing in the Digital World*, 2015 MICH. STATE L. REV. 955, <https://ssrn.com/abstract=2243264> (last visited Apr. 27, 2020) (detailing the substantial investments and costs in running modern scholarly journals).
10. See *id.* at 969–971 (detailing this mistaken perspective of how digital technology makes publishing low cost). See, for example, Jerome H. Reichman & Ruth L. Okediji, *When Copyright Law and Science Collide: Empowering Digitally Integrated Research Methods on a Global Scale*, 96 MINN. L. REV. 1362, 1461 (2012) (“[O]nce costly front-end publishing function has increasingly been reduced to desktop publishing and automated formatting, while the peer-review function, of great importance to the integrity of science, is performed gratis by scientists.”).
11. *Id.* at 970 (quoting Mark J. McCabe, *Online Access and the Scientific Journal Market: An Economist's Perspective 2* (Mar. 2013), http://sites.nationalacademies.org/xpдио/groups/pgasite/documents/webpage/pgga_063400.pdf).
12. These paid employees and contractors additionally cultivate and coordinate extensive networks of volunteer peer-reviewers.
13. See Mossoff, *supra* note 9, at 969–986.
14. Others have also recognized this conflation between research and journal articles in OSTP's policy proposal and the justification offered for it. See, for example, Neil Turkewitz, *Academic Publishing: Beyond Intuition & Instinct* (Apr. 21, 2020), https://medium.com/@nturkewitz_56674/academic-publishing-beyond-intuition-instinct-29375ecd0cdb (last visited Apr. 27, 2020).
15. See U.S. INVESTMENTS IN MEDICAL AND HEALTH RESEARCH AND DEVELOPMENT 2013–2018 (Fall 2019), at 5, https://www.researchamerica.org/sites/default/files/Publications/InvestmentReport2019_Fnl.pdf (last visited Apr. 27, 2020).
16. See Mossoff, *supra* note 9.
17. See *supra* note 8.
18. See David Cyranoski, *China Splashes Millions on Hundreds of Home-Grown Journals*, NATURE (Dec. 11, 2019), <https://www.nature.com/articles/d41586-019-03770-3> (last visited Apr. 27, 2020).
19. See Yojana Sharma, *China Shifts from Reliance on International Publications*, UNIVERSITY WORLD NEWS (Feb. 25, 2020), <https://www.universityworldnews.com/post.php?story=20200225181649179> (last visited Apr. 27, 2020).
20. See U.S. Const., art. 1, § 8, cl. 8.
21. *Eldred v. Ashcroft*, 537 U.S. 186, 212 n.18 (2003) (*American Geophysical Union v. Texaco, Inc.*, 802 F. Supp. 1, (S.D.N.Y. 1992), *aff'd*, 60 F.3d 913 (2d Cir. 1994)). In *American Geophysical Union v. Texaco*, the district court observed that “[a]uthors recognize that publishers have little incentive to assume the financial risks of publishing unless the publisher is protected from copying. Accordingly, it is commonplace for authors to assign their rights of authorship to publishers.” *Id.* at 27.

22. Harper & Row, Publishers, Inc. v. Nation Enters., 471 U.S. 539, 558 (1985).
23. See Letter from Sen. Tillis to Secretary Ross and Director Mulvaney (Dec. 12, 2019), <https://copyrightalliance.org/wp-content/uploads/2019/12/Tillis-12.12-Ltr-to-DOC-and-OMB-re-Scientific-Journals.pdf> (last visited Apr. 27, 2020); Letter from Eight Members of Congress on the GOP Docs Caucus (Feb. 18, 2020), <https://copyrightalliance.org/wp-content/uploads/2020/04/Letter-to-President-Trump-Scientific-Journal-EO-Concern-Feb.-2020-1.pdf> (last visited Apr. 29, 2020).



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Adam Mossoff
Professor of Law

May 6, 2020

**Re: OSTP Request for Information FR Doc. 2020-06622, Regarding
“Public Access to Peer-Reviewed Scholarly Publications, Data,
and Code Resulting From Federally Funded Research”**

To Whom It May Concern:

I direct your attention to the following publication addressing the legal, policy, and economic concerns arising from a federal regulatory mandate of public access to scholarly journal articles reporting on research funded in part or in whole by the federal government:

Adam Mossoff, *Radical OSTP Proposal Would Undermine American Research and Sacrifice American Intellectual Property*, Legal Memorandum, Edwin Meese III Center for Legal & Judicial Studies of the Heritage Foundation (May 7, 2020).

Thank you.

Sincerely,

A handwritten signature in black ink that reads "Adam Mossoff". The signature is written in a cursive, flowing style.

Adam Mossoff

May 6, 2020

Dr. Lisa Nichols
Office of Science and Technology Policy
Eisenhower Executive Office Building
1650 Pennsylvania Avenue, NW
Washington, DC 20504

Response to OSTP Request for Information – FR Doc. 2020-06622 – “Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research”

Dear Dr. Nichols:

Thank you for the opportunity to share our views on opportunities to strengthen the scholarly communication system and increase public access to research arising from federal funding. We appreciate this important dialogue and look forward to working with you and all stakeholders to deliver meaningful outcomes that advance open research.

Wiley is a global leader in research and education. In research, our mission is simple: empower researchers to communicate great research, enable societies to do great publishing, and promote the dissemination of knowledge as widely as possible. As America’s largest research publisher – founded one year after Lewis and Clark returned from their pioneering scientific expedition across North America, we take pride in the role we have played in our country’s leadership in research and innovation. Today, we continue to partner with researchers and institutions in every state and discipline to help them push forward the boundaries of knowledge.

A few months ago, we had the opportunity to meet with you, Director Droegemeier, Administration colleagues and other publishers. Dr. Droegemeier issued a call to action to help define a concrete roadmap for the future of scholarly communication. An interconnected, open ecosystem where researchers can seamlessly communicate, collaborate and share across institutions and disciplines, accelerating the creation of knowledge and ensuring its benefits are broadly shared with society and the economy. This is Wiley’s vision for the future, and one that we work to advance every day.

The federal government is uniquely positioned to accelerate our progress towards this future by taking action in the following ways:

- (1) Engage the academic, non-profit and private sectors collectively to leverage their energy, innovation and investment;
- (2) Focus these stakeholders on unlocking the full potential of research data and breaking through critical roadblocks to open data; and
- (3) Use the government’s convening authority to not just design policy but to quickly pilot scalable tools and infrastructure that will accelerate implementation

America's scientific leadership and competitiveness are supported by a thriving scholarly communication ecosystem of researchers and institutions, public and private. Together we're creating the tools and infrastructure to advance research in the 21st century, and ensuring this system is imbued with the values that underpin the U.S. research community – rigor and integrity; academic freedom; openness; partnership; and respect for innovation, commercialization and intellectual property rights. I describe in more detail below how Wiley's Open Research focus and partnerships are driving innovation across the ecosystem. I also reflect on what we're learning as we join forces in the fight against COVID-19.

We are focused on advancing Open Research to meet the needs of researchers and institutions across the US and global scientific enterprise

Wiley is innovating to meet the needs of researchers and enable the effective and rapid communication of scholarly publications, including those that report on federally funded research. To start, we create and support journals – now nearly 1,700 published by Wiley in partnership with leading societies – that empower researchers to disseminate their discoveries and enable peer-reviewed publishing to happen in the first place. We are in constant dialogue with the research community, working to ensure we're ahead of the curve in providing researchers the publishing options they need. To date this includes launching 100+ fully open access journals and 1400+ hybrid journals, providing researchers choices and flexibility depending on their preferences and resources.

Even as we've scaled up to publish more journals and articles than ever before, we're also rapidly innovating at each leg of the process to accelerate communication and make life easier for researchers. Our Authorea and Manuscripts tools are used by 200,000 researchers to collaborate virtually to write, cite, collaborate, and host data; they also provide 1,300 journal submission templates that make it faster for researchers to submit manuscripts to journals. Wiley receives a manuscript submission every 39 seconds, and over the last year we've made significant investments to accelerate the timeline from submission to publication, reducing this crucial period by 40% while still maintaining high standards of quality and rigor. Investments such as these accelerate research discovery and communication – including of federally funded research – and are only possible because the United States has a supportive policy framework for publishing innovation and investment.

Wiley's long-term sustainability also enables us to make investments and experiment with innovative models to increase access and engagement in partnership with major research institutions and their communities worldwide. Last August, we announced the first comprehensive agreement in North America that combines open access publishing funds with journal subscriptions under an arrangement with the Virtual Library of Virginia. We were also grateful to partner with OhioLINK to sign a groundbreaking agreement last June that enables affiliated researchers to use a central fund for Article Processing Charges, a first for a North American library consortium. We have pioneered the development of additional transformative deals with partners in Germany, the United Kingdom and elsewhere that enable immediate open access in ways that continue to uphold academic freedom and ensure long-term funding and sustainability. We've also worked intensively with other publishers to launch the Get Full Text Research (GetFTR) service, a new tool that will help all readers – both subscribers and non-

subscribers – access research content more seamlessly than ever before. Our Atypon publishing platform handles over 3 billion user sessions per year, and we're making significant new investments to ensure that these sessions result in the most meaningful engagement with the research literature.

What we've found is that there is no one-size-fits-all solution: every participant in this ecosystem has its own set of needs and preferences. Policies that would significantly reduce the choices available to researchers and push all stakeholders towards a single model would upend our ability to serve this diverse community and constrain the dissemination of federally funded research.

Systematic, multi-stakeholder processes drive meaningful impact and should be applied to research data at scale

There are many more opportunities to strengthen the system of scholarly communication, advance open research and address common challenges, and we're excited to dive in and experiment in collaboration with our 800 publishing partners, including many of the world's leading scholarly and professional societies. We would welcome the opportunity to partner with OSTP, federal agencies and other stakeholders to advance these opportunities.

A recent example of the power of innovative partnership has been the way in which Wiley and the publishing and society community have responded to COVID-19. In early February, Wiley launched its COVID-19 Resource Site with free information updated daily with the latest research on the virus and links to more than 5,000 articles, helping deliver the world's best research on topics related to the coronavirus to frontline scientists and healthcare professionals. Wiley, in partnership with Atypon, also launched an AI-driven real-time Scitrus feed aggregating the latest research and news on COVID-19. Working with our society partners, we have prioritized the publication of COVID-19 research, accelerated dissemination by compressing the period of peer-review and publishing from months to days, and continue to make this content freely available for as long as needed.

When funders and governments asked us to participate in emergency efforts to make this material available in PubMed Central and other publicly funded repositories, such as the Wellcome Trust and WHO COVID-19 database, we didn't hesitate. It's the right thing to do in a public health emergency. We're able to do all these things because we have a sustainable business backed by diverse publishing models and America's long-standing respect for the intellectual property rights that make investment in high-quality content and knowledge dissemination possible. In the coming days and months, we are committed to working in partnership with government and the research communities to overcome COVID-19.

We believe such innovative partnerships hold the greatest promise to rapidly address common challenges and opportunities, leveraging the expertise and creativity of the private, public and non-profit sectors. As we move beyond the current crisis, we are committed to exploring additional partnership opportunities with OSTP. As this RFI notes, one of the largest, yet still mostly untapped opportunities in open research is supporting the management and sharing of research data. Access to data is vital for analyzing research outcomes and enhancing

reproducibility, and is often ripe for further study and investigation. But for a variety of reasons this resource is often underutilized and unavailable. We recognize there are major challenges to making more data FAIR (findable, accessible, interoperable, reusable), as well significant new costs. And there are valid reasons why researchers may be reluctant to share certain datasets.

We've barely scratched the surface in unleashing data's full potential. Wiley is committed to working with its authors, society partners, institutions, funders and the broader publishing industry to develop new standards and practices for sharing data. We've started by implementing data sharing policies across nearly all of our journals and piloting a data sharing service for select journals. Since September 2019, we've published more than 15,300 data availability statements guiding researchers to affiliated research data, including links to shared data whenever these are available.

We're keen to play our part in this exciting transformation in how research data is managed and shared – and look forward to exploring concrete ideas with OSTP on how we can work together to advance these common objectives. And data is just the start: we're hard at work experimenting and advancing pilots in new areas such as registered reports and open peer review. Pilot projects and voluntary initiatives can help to incubate and disseminate new open practices across the community. The National Science and Technology Council's Subcommittee on Open Science can play a critical role in convening key stakeholders to design policy, pilots and infrastructure to accelerate and scale open data, among other high-impact areas for collaboration.

We can move forward with speed and agility amid an evolving “new normal” by building on our progress

A basic set of principles should anchor us as we work collectively to accelerate open science: uphold researchers as our North Star, leverage all pathways to advance open access so we can serve every community and leave no one behind, recognize that sustainability isn't a buzz word but what enables societies and publishers to make research communication possible, and partner to advance shared goals.

These principles are the same ones that have guided efforts here in the United States to expand public access. And the results have been extraordinary: today all peer-reviewed articles reporting on federally funded research are being made freely accessible, researchers have more publishing options than ever before, and innovation is thriving across scholarly publishing. Publishers, societies, institutions, libraries, researchers, funders and many others are working day-in and day-out, hand in hand, to develop creative ways to disseminate knowledge. It's one of the most exciting times in scholarly publishing, and the United States is leading the way.

That's why we are concerned to learn that a primary focus of the discussion so far, including in this RFI, has revolved around lowering the 12-month embargo for scholarly publications reporting on federally funded research. This policy represents a vital compromise designed to meet the needs of all research stakeholders and is the basis of the unprecedented investments and innovations in the scholarly communication ecosystem. A blanket change to the embargo will weaken American leadership and investment in research communication, jeopardize America's

incredible non-profit societies, undermine long-standing U.S. respect for intellectual property rights, and prevent many researchers from communicating their ideas.

Importantly, there has never been any serious discussion as to how the federal government would authorize and appropriate funds for financing scholarly publishing on a permanent basis going forward. This raises complex budgeting questions across federal/state/local/institutional levels that will take time to resolve. These aren't minor details that can simply be left for future discussion. These are crucial questions for the Administration, Congress and stakeholders to discuss and resolve together before any policy changes can be seriously and responsibly considered.

We are particularly concerned that this important consultation is taking place in the midst of the COVID-19 pandemic and economic crisis. Today, the research community is throwing everything in its antiviral arsenal at this pandemic, and many important participants cannot meaningfully engage as they lead response efforts. As an organization, we are focused on supporting our partners to answer fundamental questions: *When will we find vaccines and therapies? How can we support the affected and their families? How can we help the unemployed millions? Can our institutions withstand the strain? When and how can we restart the global economy and return to some sort of normal?*

We look forward to working with OSTP and the wider community to address these questions, overcome this once-in-a-century crisis, and support recovery and rebuilding. And as we collectively come through the other side of this crisis, we are committed to working collaboratively to develop forward-looking partnerships that strengthen research and innovation and deliver on the promise of open science. The stakes have never been higher to leveraging the entrepreneurial spirit of the research community and private sector to enable our country's continued leadership and competitiveness.

Sincerely,



Andrew A. Tein
Vice President, Global Government Affairs
Wiley

From: Renee Fonseca <renee.fonseca@fulbrightmail.org>
Sent: Wednesday, May 6, 2020 10:40 PM
To: MBX OSTP Public Access <MBX.OSTP.PublicAccess@ostp.eop.gov>
Subject: [EXTERNAL] RFI Response: Public Access

Dear Lisa Nichols,

All taxpayer-funded research should be freely open and available to the public.

Thank you,
Renée Fonseca, M.S.

Bioinformatics & Computational Biology
Fulbright Research Scholar
Ph.D. Researcher, University of Chicago

Pronouns: she/her

[LinkedIn](#)
[Google Scholar](#)
[GitHub](#)
[Everything Else](#)

The Journal of Bone & Joint Surgery, Inc.
20 Pickering St., Needham, MA 02492

Wednesday, May 6, 2020

BY ELECTRONIC SUBMISSION

Dr. Kelvin K. Droegemeier
Director, Office of Science and Technology Policy
Eisenhower Executive Office Building
1650 Pennsylvania Avenue, NW
Washington, DC 20504

Response to OSTP Request for Information – FR Doc. 2020-06622 – “Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research”

Dear Dr. Droegemeier,

The Journal of Bone & Joint Surgery, Inc. is grateful for the opportunity to respond to this request for information. In particular, we write to caution OSTP against adopting a policy mandating the free distribution of peer-reviewed manuscripts earlier than one year after publication.

Our organizational mission is to improve musculoskeletal health across the globe by delivering gold standard information resources for clinicians, researchers, and orthopaedic care teams. *The Journal of Bone & Joint Surgery (JBJS)* has been the most valued source of information for orthopaedic surgeons and researchers for over 125 years and is the gold standard in peer-reviewed scientific information in the field. *The Journal of Bone and Joint Surgery* has its origin as the *Transactions of the American Orthopedic Association*. The first volume contained the proceedings of the meetings of 1887 and 1888. Volume XVI of the *Transactions of the American Orthopedic Association* is also Volume I of the *American Journal of Orthopedic Surgery*. The present title, *The Journal of Bone & Joint Surgery*, was adopted in 1922. The American Orthopaedic Association retained ownership of the journal until 1953, when an independent non-profit corporation, The Journal of Bone and Joint Surgery, Inc., was established. The organization also publishes *JBJS Reviews*, *JBJS Case Connector*, *JBJS Essential Surgical Techniques*, *JBJS Open Access* and *JBJS Journal of Orthopaedics for Physician Assistants*.

Ultimately, we strive to support the progress of science by producing and broadly disseminating the highest quality peer-reviewed content possible. Publishers and societies have worked to strengthen scholarly communication and promote open science. However, it is critical that these efforts take place within a framework that respects intellectual property rights and our ability to invest in high-quality publications, and that does not hinder researchers from communicating their discoveries.

Our organization is currently deeply engaged in efforts to respond to the COVID-19 pandemic. To date, we have peer-reviewed, edited and published more than 30 manuscripts dealing with the global effects of the COVID-19 within the orthopaedic community, all of which we have made freely available. We are concerned that OSTP’s significant new regulatory proposal is a

distraction from our ongoing efforts to respond to the current crisis and would undermine our stability and undercut our ability to respond to future health crises.

As you are aware, federal agencies currently require that peer-reviewed manuscripts be made freely available online—within one year of publication—if they discuss research funded at least in part by a government grant.¹ This policy represents a significant compromise that balances our shared goals of providing broad access with the need for our organization to recoup the substantial investments we make in the peer-review, editing, publication, distribution, and long-term stewardship] of these articles. This one-year compromise contrasts with the length of a full copyright term of life-of-the-author plus 70 years. Importantly, this compromise reflects Congress’ guidance (in the authorizing legislation for the current policy) that the Administration must “take into consideration the role that scientific publishers play in the peer review process in ensuring the integrity of the record of scientific research, including the investments and added value that they make.”²

Reducing or eliminating the current one-year embargo would significantly jeopardize our organization’s ability to invest in producing the high-quality peer-reviewed journals that our readers in the orthopaedic community rely on. In so doing, such a policy would contravene Congress’ clear guidance to take our role and investments into consideration. Furthermore, such a policy would directly result in a reduction in either the quantity or quality (or more likely, both) of peer-reviewed journal articles produced by hundreds of organizations like ours.

This would not only be harmful to the research enterprise, it would also be harmful to the residents, researchers, clinicians and related health care teams who are the ultimate beneficiaries of the scholarly content we produce.

We urge you not to disrupt our ability to support the advancement of research, practice and patient care] in musculoskeletal medicine and we look forward to working together to identify solutions that advance the goals of open science without undermining the communication of research findings and analyses through peer-reviewed journals.

Thank you again for the opportunity to submit these comments.

Sincerely,



Jason Miller
Chief Operating Officer
The Journal of Bone and Joint Surgery, Inc.

¹These policies were developed pursuant to OSTP’s requirement that agencies “shall use a twelve-month post-publication embargo period as a guideline for making research papers publicly available . . .” See OSTP Memorandum on “Increasing Access to the Results of Federally Funded Scientific Research” (Feb. 22, 2013).

² America COMPETES Reauthorization Act of 2010, Section 103(b)(9), *available at*: <https://www.congress.gov/111/plaws/publ358/PLAW-111publ358.pdf>.

I am pleased to submit this response to the Office of Science and Technology Policy (OSTP) Request for Information: Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting from Federally Funded Research. My sincerest thanks to OSTP for taking a deep interest in this topic and seeking input from stakeholders. My name is Tina Baich, and as Senior Associate Dean of IUPUI University Library, I am writing as the representative of the library of a public, urban research university in Indianapolis, Indiana. IUPUI University Library is a committed advocate of open access and facilitated the passage of a campus-wide open access policy in 2014. We firmly believe that publicly-funded research should be promptly and freely disseminated.

What current limitations exist to the effective communication of research outputs (publications, data and code) and how might communications evolve to accelerate public access while advancing the quality of scientific research? What are the barriers to and opportunities for change?

Comprehensive access to all research outputs can be difficult, even beyond the paywalled articles of subscription journals. The growth rate of open access continues to rise, but at a very slow rate so that the full impact of the open access movement has yet to be realized. Traditional publishing practices and processes have proven to be closed, blackbox systems and too slow to change to be truly effective, especially when compared to the potential that new technology can provide. For the past thirty years, funders, libraries and research institutions have been creating policies and initiatives to nudge the system towards positive and lasting change. With increasing momentum (e.g. [Plan S](#)), these stakeholders continue to adopt and adapt these policies as needed and have come to know that those imposing paywalls are often serving their own profit-driven interests that do not mirror the mission of the research community. Thus, this is an opportune time for federal agencies to take the natural next step to further improve open access to research.

Equitable access to information is a tenet of librarianship and essential to the advancement and creation of knowledge. The current methods for disseminating scholarly information in the U.S. prevents millions of taxpayers, whose tax dollars fund more than \$60 billion in scientific research each year, from accessing information that could enhance their health and well-being. As the current pandemic has so clearly illustrated, research locked behind paywalls slows scientific progress and the development of medical treatments and even cures. By reinforcing the research community's commitment to sharing research data and information and eliminating the obstacles that slow down progress, we can accelerate the development of new innovations for the world's most vulnerable populations.

When discussing who lacks access, the focus is often on those outside of academia, and appropriately so. However, even the privileged can and do suffer from a lack of access to publicly-funded research. From an academic library perspective, it was impossible for us to subscribe to all the journals our academic community might want prior to the pandemic, despite devoting approximately two-thirds of our entire collections budget to journal and database subscriptions. Due to financial losses related to the pandemic, we anticipate significant budget reductions, which will further reduce our ability to sustain subscriptions and will make it increasingly difficult to provide access through alternative paid methods. Our academic community, a scientific and economic driver for the central Indiana region, may also begin to feel the pains of lack of access without a national public access policy.

While there are challenges to accelerating public access to research, we are able to overcome and solve those challenges with modern infrastructure, strong policies, and our desire to completely change the way in which research is disseminated. The biggest opportunity is to establish, promote, and enforce policy that moves the sector closer to removing these barriers to energize global collaboration to solve the world's greatest problems. Such opportunities are being lived out right now with the Coronavirus (COVID-19) outbreak changing how [researchers communicate](#). Now is the time to embrace this change and place urgency on all issues recognizing "what is made clear in this moment of crisis: a robust scientific system and an informed citizenry requires immediate and [public access to research](#)."

What can Federal agencies do to make taxpayer funded research results, freely and publicly accessible?

The federal government should implement a strong national policy to ensure that taxpayers finally get immediate, barrier-free access to the full results of the scientific research that their tax dollars have funded. Setting such a policy and educating grantees on their options for compliance will prioritize the importance of open and available research outputs and highlight the time savings, breadth of access, and reusability. It will also inspire other U.S. funders and institutions to follow the government's lead. To truly make change, this policy should include the following.

- Eliminate embargos. Final peer-reviewed manuscripts or published articles and the data (and code, software, etc.) needed to validate/replicate the conclusion of an article should be made available immediately upon publication.
- Articles must be openly licensed to ensure full utility of articles. (CC-BY or similar license, or public domain designation)

- Data should adhere to the [FAIR Principles](#) (Findable, Accessible, Interoperable, Reusable).
- Final peer-reviewed manuscripts or published articles should be made available in open and machine-readable formats that fully enable productive reuse including text/data mining and computational analysis.
- Free public access to and long-term preservation of final peer-reviewed articles or published versions and supporting data should be provided via either a digital repository maintained by the funding agency or an academic/research institution.

Implementation of such a policy would accelerate the pace of scientific discovery and provide greater access to U.S. taxpayers, even those affiliated with a university. A national public access policy would provide some budgetary relief to academic libraries struggling under the existing subscription model and allow for the redirection of resources toward much needed services for researchers and support for scholarly societies.

Library subscription dollars currently play a significant role in supporting the operations of scholarly societies, and libraries would continue to support scholarly societies in new ways. For instance, a number of academic libraries, including my own, offer open access journal publishing platforms and support. We will work with societies to develop new, more sustainable publishing models and help mitigate the financial risks they may perceive. Without a strong public access policy, small publishers will most keenly feel the economic impact of the pandemic and the major publishers who already rake in enormous profits will be well positioned to exploit the market and further consolidate their power to enhance their oligopoly control of scholarly publishing.¹

What can Federal agencies do to make taxpayer funded research results, freely and publicly accessible?

Currently, America is being left behind as public access policies become the global norm. Providing public access to publicly-funded research outputs is a widely accepted international policy strategy to increase the government's return on investment in research, accelerate scientific research, boost innovation, and increase competitiveness. For example, the [European Commission](#) has a full open access policy for its articles and data, and [Canada](#) recently released its [Roadmap for Open Science](#). Other countries, including India, China, and Brazil, as well as research funders like the Gates Foundation and the Wellcome Trust also have policies.

¹ Moore, Samuel. "COVID-19 and the Future of Open Access." blog post, April 7, 2020, <https://www.samuelmoore.org/2020/04/07/covid-19-and-the-future-of-open-access/>.

This is a major opportunity for America to lead globally in a reimagining of research dissemination. Without the privileged access to subscriptions, industry and academia either experience a lack of information, use piracy, or rely strictly on open access materials to inform their work, which may provide only a partial view of a topic if other research is paywalled. In regard to the global research stage, we do not want U.S. industry to lag in or lack information that can provide a competitive advantage. In publishing quickly and openly, U.S. authors can establish themselves as leaders and remain competitive in the research space.

Thank you for your time, consideration, and attention on this important topic.

Intellectual Property Scholars' Response to OSTP Request for Information FR Doc. 2020-06622, Regarding "Public Access to Peer-Reviewed Scholarly Publications, Data, and Code Resulting from Federally Funded Research"

May 6, 2020

The Office of Science and Technology Policy (OSTP) issued a Request for Information: Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research on February 12, 2020 (RFI).¹ The undersigned intellectual property (IP) scholars submit these Comments under the extended deadline.² We appreciate this opportunity to share our views on this important topic.

The RFI directs comments along four vectors: (i) current limitations on effective communication of research outputs and potential responsive changes; (ii) possible actions by Federal agencies to increase free and public access to federally funded research results; (iii) benefits to American science leadership and competitiveness from "immediate" access to outputs of research funded in part by Federal agencies; and (iv) other "information that might be considered for Federal policies related to public access to peer-reviewed author manuscripts, data, and code resulting from federally supported research."

OSTP has a long and storied history across the twentieth century and down to the present. The Office played key roles in developing both the federal agency research funding system and the technology transfer system that are central policy components in America's success as the science and technology global leader. While many comments will likely be directed to copyright in the context of scientific journals as commercial market publishers, our contribution prompts OSTP to align any new publication policies with the longstanding science and technology research and development (R&D) policies enshrined in the Bayh Dole Act of 1980 and related regulations for different types of federal research funding.

Federal extramural³ research funding is divided into four categories: procurement contracts, governed by the Federal Acquisition Regulation (FAR);⁴ grants, governed by

¹ 85 F.R. 9488 (Feb. 19, 2020).

² 85 F.R. 17907 (Mar. 31, 2020).

³ "Extramural" refers to research outside government owned and operated facilities. "Intramural" would instead signify research done within government owned and operated facilities.

⁴ A procurement contract is used when ". . . the principal purpose of the instrument is to acquire (by purchase, lease, or barter) property or services for the direct benefit or use of the . . . Government;" 31 U.S.C. § 6303.

Bayh-Dole;⁵ cooperative agreements, also governed by Bayh-Dole;⁶ and “other transactions,” limited to the Department of Defense and arguably governed by neither FAR nor Bayh-Dole.⁷

The purpose behind the distinctions is central to our Comments on the RFI. Whereas procurement contracts are used for the Federal government to acquire goods or services for its own use as any other market purchaser, grants and cooperative agreements are used for private contractors to engage in R&D leading to knowledge and materials that will be used primarily *outside* of the government. Thus, while title, ownership, or control of procured goods and services can properly vest in the Government, as for any market purchaser, title, ownership, and control of research results funded by grants or cooperative agreements vests in the contractor under the fundamental allocation rule and purpose of Bayh-Dole.⁸

Accordingly, any sense that research results—including inventions, data, or materials (biological or otherwise)—are produced by, or on behalf of, the government is false. To the contrary, the fundamental premise of Bayh-Dole (originating in earlier patent and extramural research funding policies of both the Kennedy and Nixon Administrations) is that title to government funded extramural research results are best left to recipient organizations such as universities (“contractors” in Bayh-Dole parlance) to license to the private sector for commercialization.⁹ This is because the Federal government had proven woefully unable to secure the “practical application” of basic and applied sciences research. This meant that the benefits of such research were not realized by the public.

⁵ A grant agreement is used when “. . . the principal purpose of the relationship is to transfer a thing of value to the . . . recipient to carry out a public purpose of support or stimulation authorized by a law of the United States instead of acquiring . . . property or services for the direct benefit or use of the . . . Government; and . . . substantial involvement is not expected between the executive agency and the . . . recipient . . .”
31 U.S.C. § 6304.

⁶ A cooperative agreement is used when “. . . the principal purpose of the relationship is to transfer a thing of value to the . . . recipient to carry out a public purpose of support or stimulation authorized by a law of the United States instead of acquiring . . . property or services for the direct benefit or use of the . . . Government; and . . . substantial involvement is expected between the executive agency and the . . . recipient . . .”
31 U.S.C. § 6305.

⁷ See GAO, Intellectual Property: Information on the Federal Framework and DoD’s Other Transaction Authority (GAO-01-980T, Jul. 17, 2001) (Statement of Jack L. Brock, Managing Director, Acquisition and Sourcing Management and John B. Stephenson, Director, Natural Resources and Environment, before the Subcommittee on Technology and Procurement Policy, Committee on Government Reform, House of Representatives).

⁸ Federal agencies can modify the standard clauses of funding agreements (grants or cooperative agreements) to vest title, ownership, or control of research results in exceptional circumstances, but those have to be justified and documented.

⁹ See Sean M. O’Connor, *The Real Issue Behind Stanford v. Roche: Faulty Conceptions of University Assignment Policies Stemming from the 1947 Biddle Report*, 19 MICH. TELECOMM. & TECH. L. REV. 379, 387-412 (2013), available at <http://www.mttl.org/volnineteen/oconnor.pdf>.

The same logic applies to written materials produced by grant or cooperative agreement funded investigators discussing their research results. Scientific publishing ventures are subject to the same dynamics as are commercialization ventures for technology produced under federally funded research. As scholars have documented, reputable scientific publishing requires costly private investment to sustain the international gold standard of peer review and the level of quality production, graphics, and searchable databases that promote the progress of credible science.¹⁰ While copyrightable works are not covered by Bayh-Dole, neither are they “government works” when produced by grant or cooperative agreement funding recipients. This remains true even after the Supreme Court’s recent decision in *Georgia v. Public Resource Organization, Inc.*¹¹ Works commissioned under a procurement contract may be government works, and perhaps even statutory work made for hire, provided there was an express writing to that effect and the subject matter fit within one of the nine enumerated statutory types of works.¹² But again, that is not what is going on in federally funded extramural research occurring under grants and cooperative agreements.

At most, Federal agencies hold a non-exclusive license to use research results arising under grants or cooperative agreements for *government* purposes.¹³ This generally does not include providing these things to the general public as a government service. It is possible that the Government could do so if it was willing and able to pre-empt the entire private market for this product and deliver copies of the patent or copyright protected item to the market that are commensurate with the quality of market participants. But this would require appropriation of massive amounts of taxpayer dollars to recreate what the private sector already provides efficiently.

Further, the fully commercialized versions of goods, services, and peer-reviewed articles that derived in part from federally funded research results are nearly always downstream products produced without government funding. Thus, any government license to research results does not necessarily apply to these finished products. For example, if federal funding led to a patentable invention that could be used in a smartphone, the government license would apply only to that patent and not the entire phone. Likewise, for peer-reviewed publications: to the extent a government use license exists just by virtue of standard agency funding agreements, it only applies to the research results, perhaps in the form of written lab notes.

Accordingly, even OSTP’s 2013 Memorandum directing agencies to require federal funding recipients to allow free public access to the final version of peer-reviewed publications may have been overreach that undercuts Congress’ extramural research policy goals set out in Bayh-Dole. If the Federal government wants to provide peer-reviewed private market produced publications to the public for free, it can procure them through the normal FAR contract system. This will of course cost a lot of money. But the Federal government should not be trying to get for free through the grant and cooperative

¹⁰ See, e.g., Adam Mossoff, *How Copyright Drives Innovation: A Case Study of Scholarly Publishing in the Digital World*, 2015 MICH. ST. L. REV. 955 (2015).

¹¹ No. 18-1150, 590 U.S. __ slip op. (2020).

¹² 17 U.S.C. 101, 201(b).

¹³ See, e.g., 35 U.S.C. 202(c)(4)

agreement channels what it would otherwise have to buy in the open market. This principle should apply equally to peer-reviewed scientific publications as it does to other commercial market goods that embody Bayh-Dole subject inventions. The government does not get these goods for free, nor can it direct how contractors make them available to the market.¹⁴

Romantic notions of “open science” often used to justify open access policies are often based on idealistic myths not supported by the history of science. To the contrary, many of the greatest scientists in the Western tradition were highly protective and secretive with their research. Their processes and data were, after all, their competitive edge in the race for scientific priority and a long and fruitful research agenda. The *results* of their scientific inquiry, couched as “discoveries” or new laws or principles of nature, needed to be open and replicable, but that did not mean the underlying data or processes did.

While some bemoan “duplicative efforts” as wasteful, many of the most famous scientific races in history were replete with secretive independent traversing of the same ground. In fact, the British Royal Society allowed presentations of even research results to be done in private for awarding scientific priority and credit. This meant that such results were not made public. Ultimately, science seems to work best as a competitive market—at least as far as spurring rapid and pioneering advances. Open access works against this in the vain hope that a non-competitive collective will be equally motivated to long hours and expensive research.

No matter how you look at it, government-mandated immediate open access for copyrighted peer-reviewed manuscripts ignores and destroys the resource-intensive review, translation, and commercialization processes required to produce and disseminate these manuscripts. It confuses the so-called public domain with the public sphere or market. The most important is the latter—are innovative, creative, and valuable new writings being made available to the public in vetted commercially viable forms, perhaps for a fee, or are we simply mandating that inferior versions are made available for free? What is better? History and the market have already given us the answer.

We strongly urge OSTP to refrain from reducing further the already market-disruptive regulation that allows a mere 12-month embargo to recoup major investments in producing and disseminating peer-reviewed publications. Pushing access sooner will destroy the scientific publishing sector—with nothing to replace it in scale or quality—as well as dampen the successful competitive marketplace of scientific research. It will also unbalance the successful premise and system of R&D based off technology transfer under Bayh Dole.

¹⁴ While Bayh-Dole does provide “march-in rights” under 35 U.S.C. 203 that allow the funding agency to grant licenses to the subject invention to third parties, this is only in the case where a contractor fails to achieve “practical application,” in the sense of getting a product embodying the subject invention to the market.

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Date: May 6, 2020

To: Lisa Nichols, Assistant Director for Academic Engagement, OSTP

Subject: OSTP's RFI on Public Access to Peer-Reviewed Scholarly Publications

I write on behalf of the University of Colorado Boulder, I appreciate the opportunity to submit the following response to OSTP's RFI on Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting from Federally Funded Research (85 FR 9488). Our university community would like to thank OSTP for its interest and engagement with this important issue, and for taking the time to consult with a broad group of stakeholders on this issue of extreme importance for research universities.

Sincerely,



Robert H. McDonald
Dean of University Libraries & Sr. Vice Provost of Online Education

cc: Terri Fiez, Vice Chancellor for Research & Innovation
Larry Levine, Associate Vice Chancellor for IT and CIO
Russ Moore, Provost and Executive Vice Chancellor for Academic Affairs

1. What current limitations exist to the effective communication of research outputs (publications, data, and code) and how might communications evolve to accelerate public access while advancing the quality of scientific research? What are the barriers to and opportunities for change?

Lack of access is a real issue for the effective communication of research outputs. Research publications behind paywalls are the most obvious manifestation of this lack of access since they touch the broader public. This situation creates an uneven playing field for both individuals and institutions. At CU Boulder, journals have steadily eaten up most of the materials budget of the University Libraries, leaving a limited amount for purchases of monographs, databases, and other materials. In this environment, we cannot afford to purchase important materials, such as the full backfiles for *Science* and *Nature* journals and standards and protocols in fields like engineering (e.g., from ASTM, ASME, ISO, and SAE) and medicine. In the Libraries, we hear regularly from students who graduate and find they no longer have access to key information resources they need to launch their careers, continue with their research, or learn about an illness that is afflicting themselves or a family member. The same goes for scholars at smaller and less well-funded institutions, often those who were previously our graduate students. Our own faculty members cannot gain access to data for text and data mining from publishers whose databases we subscribe to. This often leads to these users creating workarounds just so they can get their work done -- going directly to authors trying to get an article, asking friends and colleagues at other institutions to send a copy.

Some of our researchers require access to large volumes of materials from databases for which we pay. This is precluded by contracts under our current subscription and severely limits the research that can be done. Given the billions of taxpayer dollars spent on research, we firmly believe the American public has a right to access and use those results. It is unfortunate that it takes a circumstance as extreme as the coronavirus pandemic to persuade publishers to make some of these paywalled resources open to the public. There is a good reason openness is used to speed scientific progress during times like these.

CU Boulder cares about making its research output open and has taken important steps in this direction by creating the CU Scholar institutional repository, passing a campus-wide open access policy for articles (2015), convening limited-term research data governance and advisory groups, and creating the Center for Research Data and Digital Scholarship (CRDDS), which offers key services supporting open access to CU research.

The Center for Research Data and Digital Scholarship (CRDDS) has been designated the responsibility for campus research data, which puts some of the structure in place to support open access to publicly funded research outputs. More work, however, needs to be done to realize the necessary support to our researchers, and that work requires significant campus investments: open access to data requires a significant technical and social infrastructure and therefore funding models need to be established to offer our researchers the necessary support to make their research data and code open. Institutions can encourage them by rewarding open research outputs in the tenure and promotion process. Institutions also will need to work together to find reasonable paths forward and ways to make their outputs interoperable. The action that the Association of American Universities and Association of Public and Land-Grant Universities are taking to coordinate efforts is an extremely important step forward, but support from campus administrations and from funders to support the necessary technical and human infrastructure will be critical for American institutions to fully participate in the open scholarly ecosystem.

Researchers' reluctance to make their outputs openly available is another barrier that must be addressed. Researchers are pulled in so many different directions in the modern university environment that they have to pick and choose where to invest their time and energy. Unless funders enforce open access policies, and they together with institutions provide reasonable and sustainable means for making these outputs openly available, only the most dedicated will do so (and there are some who do!).

In addition to the reward incentive in tenure and promotion, steps can be taken in researcher education that focuses on the importance of transparency and reproducibility to open science as a foundational value of scholarly research, reframing the discussion about when data is ready to be shared, and communicating the scholarly benefits of sharing (many researchers hold onto their data until projects are well over for fear of being “scooped”). Even when one can access articles, the basic data and code needed to verify or reproduce the results of articles published in peer-reviewed journals are too often unavailable or difficult to access. As guiding principles for access for humans and machines, the FAIR principles (findable, accessible, interoperable, and reusable) should be used.

Finally, even when the outputs are openly available, difficulties arise to integrate those data sets to realize the potential of data-driven science. The challenge for interdisciplinary data science work is that there is a lack of consistent data standards. Some research communities have developed interchangeable data formats, but not all research communities have yet developed community-based data standards. Solutions will require interdisciplinary collaboration to develop best practices for data standards and discipline-specific metadata.

2. What more can Federal agencies do to make tax-payer funded research results, including peer-reviewed author manuscripts, data, and code funded by the Federal Government, freely and publicly accessible in a way that minimizes delay, maximizes access, and enhances usability? How can the Federal Government engage with other sectors to achieve these goals?

We have outlined above some barriers to public access to taxpayer-funded research results, including peer-reviewed author manuscripts, data, and code. To accelerate the pace of public access to government-funded research results, we believe the federal government should implement a strong national policy that ensures the public gets immediate, barrier-free access to the full results of the scientific research that it finances coupled with funding for researchers and institutions to implement this policy. Implementing such a federal policy will require collaboration between the Research Office, IT, and colleges and departments, as well as a workforce equipped to support the data needs of the future research enterprise.

CU Boulder fully supports a strong national policy because open access to research is fundamental to scientific progress and the effective functioning of the research enterprise. Only results that can be discussed, critiqued, and -- when necessary -- tested and reproduced qualify as scientific. Thus science can only reasonably work if research findings are made openly available to the scientific community. The National Academies of Science, Engineering, and Medicine echo this logic in their 2018 report “Open Science by Design: Realizing a Vision for 21st Century Research,” which makes strong recommendations in support of making scholarly publications, data, and code openly available.

This national policy should require that: (1) final peer-reviewed manuscripts or published articles be made available immediately upon publication, eliminating any embargo period; (2) articles be openly licensed to ensure full utility (CC-BY, or public domain); (3) data (and code, software, etc.) required to validate or replicate an article’s findings be made immediately available; (4) other data be FAIR; (5) final peer-reviewed manuscripts or published articles be made available in open and machine-readable formats that fully enable productive reuse, including AI and text/data mining (the importance of which we have seen during the current COVID crisis); (6) free public access to and long-term preservation of final peer-reviewed articles or published versions and supporting data provided via either a repository maintained by federal agencies or any repository meeting the CoreTrustSeal or similar certifications.

This policy would benefit CU Boulder researchers and our institution immensely. As researchers, we would have immediate and broad access to important research results that we can verify and build upon. Our colleagues, whether or not they are at well-funded R1 institutions, would also have this access. This scenario, which allows for the free flow of ideas and research findings, makes for better science and helps drive the scholarly conversation forward in critical ways. As librarians, it means that researchers will not need to ask us to pay for access to research materials that are often only made available at an exacting price and or are only available as a part of publisher bundles, or to wait for access that may not materialize. We will also not have to tell CU Boulder alumni that we cannot supply access to needed materials because of restrictive publisher contracts, particularly on electronic materials.

CU Boulder researchers could undertake their work more effectively and efficiently if federally funded research outputs were openly available and limitations were placed on the publishers’ profit motive. One of our Leeds Business School faculty, for example, is using a large-scale corpus of social and behavioral sciences articles to automatically extract relevant theory and argumentation in these fields, which no individual researcher can follow on their own. The goal of the project would be to more effectively and efficiently advance research in the social and behavioral sciences by surveying existing literature and flagging impactful areas for researchers to build upon and focus their efforts. Currently, he is using an in-copyright corpus to which the Libraries obtained access for his use, which unfortunately limits the types of technologies he can propose out of the research. If he instead had access to an open corpus containing all social and behavioral sciences literature generated from federally funded research, he not only would have more efficient access to his corpus but also his research outcomes would not be restricted on the basis of its copyright status.

Lack of access to important data corpora, some built on freely available government information and allowing publishers to monetize and remonetize this data has also posed a challenge for CU Boulder faculty researchers and the students they are training. For instance, we have been struggling over two years to obtain access to data

in ProQuest's Legislative Insight database for a team of researchers in Political Science. Most, but not all, of the data is government-generated and openly available, and we subscribe to the ProQuest database. Even after paying an additional fee for the data, we have not been able to obtain all of the fields necessary for the research. In the meantime, the faculty member leading the project has taken on a new role and his graduate research assistants have moved on. He still does not have access to the required data to undertake his project.

3. How would American science leadership and American competitiveness benefit from immediate access to these resources? What are potential challenges and effective approaches for overcoming them? Analyses that weigh the trade-offs of different approaches and models, especially those that provide data, will be particularly helpful.

We have already addressed ways in which American science and competitiveness could benefit from immediate and broad access to publicly funded research, namely that entire fields of research would be driven forward more efficiently and effectively on this basis, at the same time increasing the government's return on investment in research. The results of a review conducted in 2019 reinforce this conclusion, showing that the economic benefits of open science have been realized in two main ways: (1) efficiency, that is, doing existing things at lower cost: individuals and companies do not need to pay to access findings, save on labor costs due to easier access and enabling text and data mining, and can avoid redundant research; and (2) enabling new products, services, companies, collaboration, and research that might not have happened otherwise.¹

These benefits are the reason why open access policies are quickly becoming the global norm. In order for American researchers to maintain international research collaborations, consistency will be important. The European Commission has a full open access policy for articles and data, facilitated by Plan S. Under this plan, European research funders have mandated full and immediate public access to publications resulting from funded research, and importantly, they also cannot be monetized in any way. Canada recently announced a similar policy, and countries as diverse as India, China, and Brazil have also put policies in place.

A recent DOE report² on the future of artificial intelligence in the sciences highlights how access to large, easily accessible, and well-curated data sets will transform and accelerate the scientific process. This report calls for the creation of FAIR scientific data collections to support AI-enabled scientific discovery.

If we do not heed the call of organizations like the American Academies and adopt a national open access policy, the U.S will surely be left behind in the race to accelerate scientific research, boost innovation, increase national competitiveness, and net increased returns on taxpayer investment in research. This conclusion has been widely supported by economic models and direct experience. But one example illustrating the benefits of open access to American science and the American economy is the Human Genome Project. Its open data generated an economic return of \$796 billion on a \$3.8 billion investment - a return on investment (ROI) of 141 to 1. That means that every \$1 of taxpayer money generated \$141 in economic activity, including job creation.³

Fostering open access is essential to supporting research at American institutions of higher education. We cannot play a leadership role in global higher education if our researchers cannot access critical research articles and data. Even the best-funded campus libraries cannot afford to subscribe to all journals or to obtain access to all of the data that their researchers need. We certainly cannot, which as demonstrated interferes with cutting-edge research.

¹ Fell, Michael J. (2019) The Economic Impacts of Open Science: A Rapid Evidence Assessment. *Publications* 7(3), 46. <https://doi.org/10.3390/publications7030046>.

² Stevens, Rick, et al. AI for Science. No. ANL-20/17. Argonne National Lab. (ANL), Argonne, IL (United States), 2020. <https://www.anl.gov/ai-for-science-report>.

³ <https://www.genome.gov/27544383/calculating-the-economic-impact-of-the-human-genome-project>

From: Andrea Wirth <aawirth100@gmail.com>
Sent: Wednesday, May 6, 2020 10:15 PM
To: MBX OSTP Public Access <MBX.OSTP.PublicAccess@ostp.eop.gov>
Subject: [EXTERNAL] RFI Response: Public Access

Hello,

I am writing to comment on the Request for Information: Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research. Thank for making the effort to consult with the public on this important topic.

I am writing as a taxpayer and also as a librarian. I do not represent any organization with my remarks.

- What current limitations exist to the effective communication of research outputs (publications, data, and code) and how might communications evolve to accelerate public access while advancing the quality of scientific research? What are the barriers to and opportunities for change?

Online access to peer reviewed research should be easier for researchers and the general public than it is today. Researchers affiliated with corporations and institutions do not have access to all of the publications that could inform their work due to budget limitations (and therefore limited subscription access) and capacity to conduct a thorough search across numerous discovery systems available.

Members of the public, the ones who have paid for federally funded research have even less access without the support of institutional subscriptions and no good way to discover the works that are being made available. This is particularly apparent in light of COVID-19 and the public's quest for authoritative answers to their concerns. Even when there is access to articles, the data to support the findings are infrequently made available.

- What more can Federal agencies do to make tax-payer funded research results, including peer-reviewed author manuscripts, data, and code funded by the Federal Government, freely and publicly accessible in a way that minimizes delay, maximizes access, and enhances usability? How can the Federal Government engage with other sectors to achieve these goals?

Make it simple. Unless a matter of national security, require that all funded research be made immediately available - no exceptions, no embargoes. Apply licenses for reuse to all publications as well making them available in a format that allows for machine readability including text mining. This would be particularly useful to researchers in light of COVID-19.

The federal government can encourage their own researchers and partners to seek out reputable open access publishers for their content and negotiate pricing where article processing charges are deemed unaffordable.

- How would American science leadership and American competitiveness benefit from immediate access to these resources? What are potential challenges and effective approaches for overcoming them? Analyses that weigh the trade-offs of different approaches and models, especially those that provide data, will be particularly helpful.

Right now, taxpayers can get access to more research published in other countries that have more robust public access policies and practices. This is absurd if we think the US should be leading in science, yet we are leaving it to the rest of the world to communicate advancements in STEM. Open access to research boosts innovation and makes us more competitive and we are currently trailing large and small countries worldwide.

The biggest trade off is likely in publishing revenues but for everyone else...authors who write for free yet can't access their own works and can't store/share their data effectively, reviewers and many editors who provide peer-review for free with no compensation to themselves or their employers immediate public access will benefit them. All of this unpaid work provides additional income to publishers. While the publishers have a valuable role to play, their role should no longer include being the sole source of availability for research findings.

I live and work in area where both innovation and community service are valued. Neither small businesses or small non-profits have seamless access to research results. Business owners and other potential consumers of the results of research currently need to pay for immediate access to many federally funded publications. Expanding public access would make small business more competitive and non-profits more easily able to inform their mission.

Current and future researchers will be better prepared if their own education and growth in their field includes fully open access to research in their field. This creates better, more informed scientists and researchers.

- Any additional information that might be considered for Federal policies related to public access to peer-reviewed author manuscripts, data, and code resulting from federally supported research.

Instead of asking each agency to figure out their own databases and access points, choose the best that we currently have and provide the mechanism for other agencies to adopt existing technology. This seems to have been a good start in this area with agencies other than NIH adopting the PMC platform (eg NASA).

Thank you again for taking the time to accept comments.

Andrea Wirth
Henderson, NV



Submitted electronically to: publicaccess@ostp.eop.gov

Dr. Kelvin K. Droegemeier
Director, Office of Science and Technology Policy
Eisenhower Executive Office Building
1650 Pennsylvania Avenue, NW
Washington, DC 20504

Tuesday 5th May 2020

Response to OSTP Request for Information – FR Doc. 2020-06622 – “Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research”

Dear Dr. Droegemeier,

The American Physical Society (APS) is a non-profit membership organization founded in 1899 which represents 54,000 members, working in academia, national laboratories and industry in the United States and throughout the world. We write to urge caution in adopting policies mandating the free distribution of peer-reviewed manuscripts earlier than one year after publication, that would compromise the sustainability and quality of peer reviewed scientific publications, imperil the integrity of the scientific record, and have the unintended consequence of reducing public access to scientific research.

The APS actively supports the wider dissemination of scientific research findings for the benefit of the scientific community and society in general via many routes including through the publishing of its world-leading Physical Review portfolio of 15 peer-reviewed primary research and review journals. The APS also supports self-archiving of author manuscripts on arXiv - a preprint server pioneered by the community that APS serves. Furthermore, APS allows researchers to archive articles that they author in the Physical Review journals on their personal and institutional websites, and permits the liberal reuse of articles published in its journals for educational and research collaborations. APS also makes all of its journal content available free of charge to US public libraries and high schools.

The practice of self-archiving of author manuscripts has come to be known as **green open access**, and is still the primary path to open access publishing for most APS journal authors. Green open access is free for authors, but does not generate any revenue to cover the costs of publishing high-quality journals such as those in the Physical Review portfolio. Instead, the significant investment made in publishing these journals is recovered from selling subscription packages to library, institutional and other customers. This model is sustained by allowing self-archiving of author manuscripts only after an ‘embargo period’ - typically 12 months - following publication of the finished journal article.

Further reducing or eliminating the embargo period would rapidly lead to fewer library, institutional and other subscribers supporting our journals (because they would be able to obtain the newest research for) and would quickly compromise the sustainability of the journals leading ultimately to their demise. This process has previously been experienced by other learned societies:

- The American Journal of Pathology went to a 6-month embargo and *lost 35%* of its subscribers in the first year, with 10% additional losses in subscribers in each of the next two years. Facing financial collapse, the learned society contracted their journal to a European commercial publisher.
- Annals of Mathematics went to a zero embargo and *lost 34%* of its subscriptions. Facing financial challenges, the Annals reinstated the embargo.
- The British Medical Journal went to zero embargo and *lost 25%* of its subscribers. Citing hemorrhaging revenue, the journal ended full free online access.

An alternative open access model is the so-called, **gold open access** or “author pays” model, in which publishers make the final peer-reviewed article publicly available online immediately at no cost to the reader, on payment of an Article Processing Charge (APC) by the author. This model places the financial burden of publishing on the authors, their institution and/or funders. Paying APCs out of existing grants diverts funding used to support students and postdoctoral researchers, thus threatening the quantity of research output to the detriment of the overall science enterprise and endangering the training of the future US STEM workforce. If the Federal Government mandates the **gold open access** route to fulfill its public access goals, additional funding needs to be provided to researchers to cover the open access APCs. Furthermore, any such change in policy must be introduced in a smooth and gradual manner (e.g. over at least five years) with careful monitoring to assess impact on research communities and the integrity of the scientific record.

Publishers, funders, libraries and the research community have come a long way together in advancing the goal of greater public access to scientific research. However, sustaining this effort depends on a fragile and complex ecosystem. We acknowledge that the traditional journals subscription model that currently supports so much of the value we provide, and allows us to provide green open access options to authors, is facing many pressures and that we must work together to develop alternative and sustainable funding models. However, it is critical that we proceed with all due caution so as not to disrupt the current research dissemination ecosystem before ensuring a viable long-term alternative is guaranteed. American scientific leadership and American competitiveness are at stake.

Sincerely,



Matthew Salter, PhD
Publisher
American Physical Society

Response to OSTP Request for Information – FR Doc. 2020-06622 – “Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research”

Additional material

What current limitations exist to the effective communication of research outputs (publications, data, and code) and how might communications evolve to accelerate public access while advancing the quality of scientific research? What are the barriers to and opportunities for change?

For decades APS, its partners, other scholarly societies, and the communities we all serve have made tremendous progress in the effective and broadly accessible communication of research outputs, towards improving research and advancing science. There is more work to do, and we are committed to partnering with the Federal Government and other stakeholders to ensure continued improvements that benefit science and the scientific community. Uncertainty around long-term sustainability is the biggest risk to the progress made to date, as well as to potential future advances. We must seize the current opportunity to collaborate towards developing sustainable financial models that support both the institutions that have served science well for centuries and the innovations that will drive advances in the future.

What more can Federal agencies do to make tax-payer funded research results, including peer-reviewed author manuscripts, data, and code funded by the Federal Government, freely and publicly accessible in a way that minimizes delay, maximizes access, and enhances usability? How can the Federal Government engage with other sectors to achieve these goals?

There are no doubt a multitude of opportunities for the Federal Government to advance these goals, but a critical consideration is ensuring the long-term sustainability of high-quality, peer-reviewed journals and the organizations that have long-served as stewards of such services and publications. We believe that APS and other scholarly societies are uniquely capable of providing the best possible peer review, and that this service is fundamental to scientific communication and broader scientific advancement.

There are a number of reasons societies are best-positioned to conduct rigorous peer review and publish the highest-quality journals. Consistent and scalable peer review of the highest quality requires a broad and deep network of experts to serve as editors and referees, and such networks are precisely what comprise societies. Societies are primarily motivated by missions to serve science and the scientific community, and our journals are for scientists, by scientists. Society-owned journals advance missions by ensuring the registration, certification, curation, dissemination, archiving, and other publishing services members of scientific communities need, value, and trust. Revenues generated by society-owned journals are reinvested not only into the development of journals and publishing services, but also directly into scientific communities through programs that support students and education, diversity and inclusion, career development, innovation, scientific journalism, and other initiatives. Members of the communities we serve appreciate and value all of this, as evidenced by the hundreds of thousands of researchers each year who read and use our published content, author manuscripts, and commit to serving as referees and editors.

May 6, 2020

Dear Lisa,

Thank you for the opportunity to comment on [public access to peer-reviewed scholarly publications, data and code resulting from Federally funded research](#). Iowa State University has worked closely with associations on this topic and strongly endorses the [response provided by AAU, APLU and COGR](#). The comments in this brief response are meant to highlight specific areas that are of particular importance to the Iowa State research mission.

What current limitations exist to the effective communication of research outputs (publications, data, and code) and how might communications evolve to accelerate public access while advancing the quality of scientific research? What are the barriers to and opportunities for change?

Iowa State University views public access to scholarly communications (publications, data, code, etc.) to be of paramount importance as part of the larger move towards open science. We are committed transitioning our own scholarly culture and support systems to assist our researchers in engaging in the transparent research practices that undergird open science.

Our primary motivations are: 1) that the quality and rigor of scholarship will be improved with more deliberate attention given to both the research process and to creating high quality research products that are broadly accessible; and 2) that the pace of discovery and translation of discoveries can be accelerated when information and knowledge are appropriately shared as they are generated.

That said, the transformation is complex and involves many dimensions, including behavioral changes in the way research is conducted, which will vary across disciplines, and establishing new or extending existing business models and infrastructure to ensure that publicly accessible scholarly products may be developed and accessed. This transformation impacts the entire scholarly enterprise including research institutions, research sponsors, scholarly societies, publishers, and others, and thus must be conducted with attention to the numerous interdependencies among these dimensions of the research enterprise.

As a “very high research activity” public university, Iowa State’s largest barrier is the financial support needed to stand up another required service to meet mandates from federal agencies and other sponsors. While financial constraints were previously present, they are now exacerbated by difficult economic situations induced on our state and our university by the pandemic. Financial support is necessary if we are going to develop the services and infrastructure needed by researchers to be productive with new transparent practices.

Particularly challenging for us as a large research university is the need to transform research practice for a vast array of heterogenous disciplines to effect campuswide culture change.

While commitment and understanding have been established in specific disciplinary areas, many scholarly areas face a much longer road to adopting appropriate transparent research practices for sharing quality scholarly products. This transformation of practice and culture will require a capable staff of data and information scientists who understand the impact that design, measurement, analysis and documentation have on producing a rigorous research process and associated products; are skilled with a variety of transparent research tools; and have expertise in several disciplinary traditions.

In addition, like other universities, we need support for a system and staff to monitor compliance and ensure researchers are proactively informed of and trained to execute their responsibilities, and researchers need clear guidance on covering their costs.

What more can Federal agencies do to make tax-payer funded research results, including peer-reviewed author manuscripts, data, and code funded by the Federal Government, freely and publicly accessible in a way that minimizes delay, maximizes access, and enhances usability? How can the Federal Government engage with other sectors to achieve these goals?

The amount of funding needed by researchers and institutions can be reduced by actions that Federal agencies take. The most significant action would be to establish common core policies, approaches, forms and systems across agencies (and other sponsors) for supporting public access to scholarly products. Harmonization of core elements of public access policy and practice would benefit all aspects of the research enterprise – researchers, research administrators, agencies, publishers and societies. We recognize that funding programs will need specialized disciplinary requirements, and it is our hope that these requirements are developed in concert with societies and standards that already exist or need to be developed for sharing scholarly products.

In addition, some form of centralized repository system across agencies would reduce costs and burden in sharing scholarly products for institutions and researchers.

Another area that we are persistently face is navigating conversations on research security and open access. While we view this dichotomy as a continuum between protected and accessible scholarly products, Federal agencies are not treating this topic clearly or providing a narrative that emphasizes that any kind of information should be evaluated for its appropriateness for sharing. For example, there are many ways to protect a data set while making it accessible, and there does not appear to be much information to help researchers understand that access is more than a binary switch of accessible or inaccessible. In addition, concerns over intellectual property theft cloud the issue of whether information should be shared. It would be most helpful if this topic were treated more carefully and clearly.

Once again, we appreciate the opportunity to share these brief comments and for prior opportunities to weigh in on this important topic. Please feel free to contact us with any questions.

Sarah Nusser
Vice President for Research
Iowa State University

own best interests in terms of career advancement, or rest solely on arguments of common good (as persuasive as they might be).

Another barrier for sharing publications, data, and code are the contents of these products. For example, many researchers (particularly in the social sciences) build upon datasets that are not easily shareable because they are covered by Data Use Agreements that cannot be breached. Such data comes from data custodians or suppliers (e.g., government agencies, private sector companies) who have made them available on the condition that they be used only for a stated purpose and further disseminated.

Even for material that can be shared, there may also be a lack of knowledge on the part of the researchers who authored or created it about how to share it effectively (e.g. green open access, effective data sharing practices, best practices for archiving code, etc). For example, researchers may not immediately know what rights they have to make their articles publicly available or state that their data will be made available upon request when, in actual practice, it is not. Even when data and code are shared, they may not be accompanied by sufficient information to enable verification or reuse.

Heterogeneous policies and expectations between, and even within, different federal agencies hinder progress. If OSTP could devise a process for innovations in one agency (e.g. SciENcv, PubMed Central, or DoE OSTI) to be adopted across all agencies that could accelerate research by smoothing out the compliance landscape.

1.2 Opportunities

Different communities across the research enterprise are already tackling issues related to public access, though in a patchwork fashion. Perhaps one of the most powerful advances that OSTP and the government could contribute would be to identify and elevate good work already being done elsewhere, as well as promoting good work happening in NIH, NSF, and other federal agencies. Universities, non-profits (e.g. ORCID) and private companies should also be included in this conversation.

We should encourage and reward communication channels that accelerate science: pre-prints, registered reports, datasets, methods artifacts (e.g. protocols) as first-class citizens. Every node in this network of research objects should be assigned a persistent identifier (e.g. a DOI) and be linked in an unambiguous fashion to the respective contributors (ORCID) according to the role they played in its production (CRediT). NIH's recently-granted permission to include preprints in grant proposals and reports has helped catalyze their

acceptance in the biomedical sciences and similar recognition of other channels by other agencies could achieve similar results.

Tackling academic incentive structures is a complex proposition. In addition to recognizing the value of research products by allowing them to be included in grant proposals and other reports, government agencies could also highlight policy recommendations such as the Declaration on Research Assessment (DORA) (<https://sfdora.org>). This declaration encourages institutions to value the content of research over publication metrics and encourages institutions to consider the value and impact of all research outputs. DORA also includes recommendations for funding agencies, researchers, publishers, and organizations that supply metrics.

Another opportunity, potentially more immediate, would be to work with publishers to establish standards for connecting articles and their underlying research data (regardless of where that dataset lives). Currently this practice is not common, or relegated to the third party metadata layer, such as Crossref or DataCite. It should be inherent in the article, in every journal. We need a uniform “dataset attribution field” in scholarly publishing.

Section 2

What more can Federal agencies do to make tax-payer funded research results, including peer-reviewed author manuscripts, data, and code funded by the Federal Government, freely and publicly accessible in a way that minimizes delay, maximizes access, and enhances usability? How can the Federal Government engage with other sectors to achieve these goals?

2.1 Opportunities for the government

Defray cost barriers to open access article publication. In the absence of a “Read and Publish” agreement, which has to be negotiated on a per-publisher basis, open access Article Processing Charges (APC) can rapidly exceed a researcher’s budget, especially if their team publishes more than one article per year. Is there a way for the federal government to support both universities and the publishing industry so that publishers can be appropriately compensated for their services, without penalizing prolific research teams?

Explore funding models for open access article publishing that do not leave out small publishers in professional societies. In our open access discussions, we tend to focus on large publishers with large profit margins, but it will be important to craft policy that does not leave out small (but important) publishers, such as professional societies.

Standardize policies between agencies and provide guidance to researchers. PubMed Central is a good example of how an agency can make papers available - It would be helpful if there weren't different instances for every agency.

Encourage agencies to require the sharing of data and software generated through federal funding, just as some already require the sharing of publications (e.g. through PubMed Central). An investigator's history of resource sharing should also be assessed in any grant review process, and resource sharing should be made a compulsory section in biographical sketches.

Educate researchers on best practices. Incorporate data sharing practices into Responsible Conduct of Research (RCR) training.

Work with other parties in this space. Don't reinvent something that already has traction.

- Universities
- ORCID (<https://orcid.org>)
- Dryad (<https://datadryad.org>)
- Github (<https://github.com>)
- DataCite (<https://datacite.org>)
- Research Data Alliance (<https://www.rd-alliance.org>)
- AAU / APLU (<https://www.aau.edu>) (<https://www.aplu.org>)
- Professional Societies
- Association of Research Libraries (<https://www.arl.org>)
- Protocols.io (<https://www.protocols.io>)
- CHORUS (<https://www.chorusaccess.org>)
- The Journal of Open Source Software (JOSS, <https://joss.theoj.org>)
- Foundations, Open Research Funders Group (<http://www.orfg.org>)
- Invest In Open (<https://investinopen.org/>)

Engage with the highly proficient technologists and designers at 18F (<https://18f.gsa.gov>) in the US General Services Administration (GSA), on technology and experience design for the research community.

Section 3

How would American science leadership and American competitiveness benefit from immediate access to these resources? What are potential challenges and effective approaches for overcoming them?

3.1 Challenges

Retaining some period of exclusivity may be warranted to ensure that the incentive structure matches our desired outcomes. We should consider varying timeframes by discipline (this will require further analysis) in terms of length of embargo period before underlying data is released. For research related to human health, it may be reasonable to expect that data will be available at the time of publication. Other disciplines, where consequences of delayed release are less dire, may benefit from an embargo to allow the researcher a reasonable period of exclusivity. If dataset release becomes mandatory at the time of publication without some mechanism for dataset attribution, it will have a chilling effect on timely research output by those that generate data.

Section 4

Any additional information that might be considered for Federal policies related to public access to peer-reviewed author manuscripts, data, and code resulting from federally supported research.

We should seek ways to implement “progressive requirements” that serve research and researchers, while simultaneously advancing the public access goals of the government. A simple example would be consistently requiring the use of ORCID ids in all federal systems, including grants.gov. Consistent use of ORCID makes the grant application process less burdensome for researchers, and allows us to give credit for depositing data into repositories, as ORCID has become a universally accepted credential. Please implement ORCID integration into grants.gov and all other grants- and data-related systems.

Please consider sponsoring research in metascience topics, especially those that bring us to a more sophisticated understanding of replicability and reproducibility. Any policy changes should be based on evidence, and metascience research could assess the impact of any policy interventions.

Contact

We at Stanford welcome further discussion on these topics, and we look forward to building this future together with our partners in the federal government. Please direct subsequent correspondence to:

Serena Rao, Senior Associate Dean for Finance and Operations, Office of the Vice Provost and Dean of Research, Stanford University (serenar@stanford.edu).



Software Preservation Network

Comments of the Software Preservation Network in re Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research

May 6, 2020

Thank you for this opportunity to comment on the future of public access to the results of federally funded research. We write to emphasize the importance of providing wherever possible for immediate, free, and openly-licensed access to software code developed as part of federally funded research. As complex research projects increasingly rely on custom-made research software tools, full access to research results can only be assured when relevant software code is part of the publicly accessible and reusable outputs of any software-dependent research project.

The Software Preservation Network (SPN) is a coordinated, distributed effort to ensure long term access to software through community engagement, infrastructure support and knowledge generation. SPN believes that software should be curated and preserved because it is both a dependency to access existing digital data and because it has intrinsic cultural value due to its mediating role in our lives. The core of SPN's constituency consists of 20 institutional members from a group of universities, museums, and research institutions committed to the belief that software is critical information infrastructure. In addition to the financial support of its institutional members, SPN has led projects funded by the Alfred P. Sloan Foundation, the Andrew W. Mellon Foundation, and the Institute for Museum and Library Services.

Lack of Access to Software Code Limits Effective Communication of Research Results

Software is as integral to the full understanding and dissemination of research as a paper, monograph, or dataset. Communication of research

results serves at least three core purposes, and each of these requires access to software code. Code is essential to enable validation and reproducibility of findings, to support collaboration and reuse, and to provide the means to share software and data with future researchers.

Reliable research results must be valid and reproducible. To fully validate and reproduce the results of a research project, independent researchers need access to the key inputs and tools involved in conducting the original research. This increasingly means that independent researchers need access not only to the research data and to detailed information about methodology, but also to the software code used to derive results from data. Access to code enables independent assessment of the code itself as well as confirmation that analysis of the data using the relevant code produces the published results. When relevant code is either unavailable or unusable (due to licensing restrictions), independent validation and reproduction are difficult, if not impossible.

Effective communication of research results should facilitate collaboration and reuse. Discussions of reuse of scholarly research results often focus on data, but code is also an important reusable element of research. Code can be reused for its original purpose, or repurposed, modified, and adapted to serve a new research purpose. When code is unavailable, or its reuse is clouded due to restrictive or unclear license terms, downstream collaboration and reuse suffer.

The core purpose of research communication is to fully convey research to future scholars. Leaving aside validation, reproduction, reuse and collaboration, simply understanding research results often requires access to software code. Research communication that doesn't include code simply is not full communication.

Broad, Clear Access and Licensing Requirements for Code Will Ensure Federally Funded Research Has the Greatest Possible Impact

To ensure adequate access and reuse rights for code resulting from federally funded research, agencies should consider taking the following steps:

- Require immediate, full access to software code resulting from federally funded research, alongside data and peer-reviewed journal articles.
- Require software be released under simple, clear license terms that permit reuse and adaptation, not just read access.
- Where exceptions are necessary (e.g., due to privacy or security concerns), the justification for withholding public access should be published and a process should exist for researchers to challenge the withholding of data, or to request private access where possible.
- Metadata about research outputs—including software code, data, and publications—should be available in machine-actionable formats at the time of publication. Regardless of the license chosen for the outputs themselves, metadata should be dedicated to the public domain via a Creative Commons Public Domain Dedication (CC0), to ensure it is free of all copyright restrictions.
- Access to these materials should either be provided via a digital repository maintained by a Federal agency or in any repository meeting appropriate criteria to ensure high quality.
- Compliance with these policies should be closely monitored and enforced and become a condition of receiving federal funding.

Thank you for interest in these important issues, and for considering our views.

To whom it may concern,

I am a private individual and American taxpayer who regularly requires access to federally-funded research for my work on the American STEM workforce and STEM education. For example, I have served as a member of the National Academies of Sciences, Engineering and Medicine study, the “Next Generation Researchers Initiative”, mandated under the 21st Century Cures Act of the U.S. Congress.

Currently, in order to access federally-funded research before the current 12-month embargo period, I must first attempt to request these materials from the original authors in an individual and laborious process. More frequently I have had to resort to a website that illegally provides PDFs to these published articles. The site in question is run by an individual currently being investigated by the U.S. Justice Department for Russian Intelligence links. This site, used by myself and many others seeking access to this work, is not the ideal location for the American taxpayer to access research articles that they support.

I am able to speak here from my perspective as a former postdoctoral researcher funded by the American taxpayer, the former manager of a non-profit organization and as an individual currently running a sole-proprietor LLC. At all times in my career, I have faced barriers to accessing American taxpayer-funded research, even during my time as an American taxpayer-funded researcher, as access to research is based on institutional subscriptions to certain journals. In my work I have also learned of the barriers faced by patient advocates, citizen scientists, and even students at American educational institutions. The system currently in place is a hindrance to science, and the work and education of Americans.

I am therefore in full support of OSTP and SOS efforts to increase access to unclassified published research, digital scientific data, and code supported by the U.S. Government at the point of publication or release.

What current limitations exist to the effective communication of research outputs (publications, data, and code) and how might communications evolve to accelerate public access while advancing the quality of scientific research? What are the barriers to and opportunities for change?

The major barrier to change is a political one. Under the current system a number of organizations rely on revenue from publishing to sustain their business models. OSTP has already received letters from a number of these organizations coordinated by U.S.

scientific societies, the Association of American Publishers, and the International Association of Scientific, Technical and Medical Publishers.

These actors consider any changes to the current system as an extreme threat to their business model. I argue that the correct moral, educational and innovative move is to make research products free at the point of production.

As an American taxpayer, and a researcher supported by taxpayer dollars, I have had the privilege of viewing scientific publishing as both an author and reader. The current publication system can act as an hindrance to scientific research and innovation. A focus on profit and maintaining an artificial scarcity of publication space (based historically on print, now largely irrelevant in the Internet Age) has resulted in a lengthy and inefficient process, where it can take years to publish research, which in turn holds up the careers of American-funded trainee scientists. As a reader, I have at every stage of my career both in the academy and outside it faced paywalls and barriers to research that I and others support through our taxes. Most scientists in the U.S., like myself, are not at academic institutions, and so a system that allows science only to be shared within academic institutions (and even then, only at institutions that can afford to buy into publishing subscription cartels) hinders both American innovation and education.

It is understandable why publishing organizations are attempting to establish their financial priorities as American priorities, over public and scientific interests. In the case of for-profit publishers, of course because of the income this model generates. But I would like to here highlight the case of “scientific”, or rather *academic*, societies, which has been taken as the stronger moral argument against releasing research products.

These organizations are in effect *academic* societies because they are run by senior academics, not scientists representative of the field. They represent the interests of not only a *minority of scientists* (most scientists are outside the academy) but also a *minority of academics*, having in most cases no representation from: students, postdocs, early career faculty or faculty from teaching-focused or minority-serving institutions. It is from the perspective of a senior faculty at research intensive institutions that their statements should largely be considered.

Such societies will claim that they are lobbying on behalf of their membership. As someone who was, but is now no longer, a member of some of the societies who wrote in opposition to public access to federally-funded research (e.g. December 18 2019 letter to President Trump), I can testify to the absence of my opinion or input to their advocacy, but the use of my membership to provide a mandate to you for it. Indeed, it

should be pointed out that one reason academic societies are concerned about losing publishing revenue is that they are already losing membership revenue, despite the ever-increasing number of scientists in the U.S. This could in part due to the very lack of representation of early career researchers and their interests in their organizations, many of whom may simply join as part of a reduced registration for the society's annual conference.

Not only are the leadership of academic societies considered about the society staying financially solvent, but their leaders may also resent being required to pay for open access costs from grants awarded to them on behalf of the taxpayer, which I often hear them refer to as "their" money. Instead it is preferable to them that the taxpayer still pays the cost of publication through indirect/F&A costs on grants paying for university library subscriptions to journals. In this way we taxpayers pay for other researchers to read papers, but still have no access ourselves.

I would like to specifically refute claims in the letter from academic societies to the President dated December 18 2019. Societies have opposed attempts to open access to research for decades, and opportunities for them to constructively change their business models have been squandered in favor of resisting change that would be of benefit to many in their fields and membership. They argue, for example, that the funds generated by publishing aid them in supporting diversity and education efforts. But while they may use these funds to offer travel grants to students at American educational establishments, such as the University of Puerto Rico, they are at the same time depriving students at such institutions of their ability to access federally-funded research. This is because a number of institutions cannot afford to pay into publishing cartels. One could even argue that the society is undermining its own work by providing a greater hindrance to their scientific education and careers membership in the society can provide.

They claim in the letter that moves to release research earlier would "upset the current proven and successful model for reporting, curating and archiving scientific results and advancing the U.S. research enterprise" and that "this current system allows scientific societies to meet the needs of researchers and U.S. taxpayers". As both a researcher, and a U.S. taxpayer, I would argue to you that it does neither, and that the current system is in great need of reform.

I would point to the fact that many other societies have chosen not to participate in opposing reform. They are likely more forward-thinking and innovative. It does not seem

appropriate for the federal government to provide handouts to academic societies who are unable to adapt to changing times and help themselves.

Arguments have been made in favor of the proposed move in letters by members of the Scholarly Publishing and Academic Resources Coalition and coordinated by the American Libraries Association. I commend their letters and arguments to you, and they have my full support. As they are stewards of knowledge, I feel it is librarians, and not the scientists whose careers, societies and funding depend on the publication industry, that should provide the guiding principles in your steps forward.

What more can Federal agencies do to make tax-payer funded research results, including peer-reviewed author manuscripts, data, and code funded by the Federal Government, freely and publicly accessible in a way that minimizes delay, maximizes access, and enhances usability? How can the Federal Government engage with other sectors to achieve these goals?

Repositories such as PubMed provide a model for collating and distributing peer-reviewed articles. A government-owned preprinting service that is responsible to the taxpayer may also provide faster dissemination of results; currently preprinting is largely in the domain of the private sector and so is liable to either financial instability, or restrictions on community-based control and accountability.

This could also be an opportunity to link papers, research products and data with individual researchers through assignment of an individual number, or use of existing numbers such as ORCID. This can assist in not only helping collate data and research, but could provide a much-needed method of following individual researchers and their careers, which is not currently adequately undertaken.

How would American science leadership and American competitiveness benefit from immediate access to these resources? What are potential challenges and effective approaches for overcoming them? Analyses that weigh the trade-offs of different approaches and models, especially those that provide data, will be particularly helpful.

Currently, a financial barrier exists to accessing taxpayer-funded published research products in America and while there are a number of organizations and individuals able to circumvent this barrier, anytime you put any kind of obstacle in the way of accessing information, you restrict some number of people from accessing it. I have experienced

this even as a postdoc in Boston, as not all university libraries subscribe to all journals. And indeed, a large proportion of the use of illegal paper-sharing websites is that they simply provide a PDF in fewer clicks or with fewer website redirections than legitimate sites.

Any barrier will hinder American competitiveness and leadership in science, and access to information has become restricted to those with access to the resources. It is already well-documented that there are too many researchers to be accommodated by American universities. So preventing Americans who aren't able to fit into the employment ranks of such institutions from also accessing research exacerbates the loss of talent that America already suffers from. If America truly wants to fuel innovation and entrepreneurship, an obvious basic step is providing all talented and aspiring Americans with easy access to research and innovation resources such as already published articles.

Free access to taxpayer-funded research products is therefore necessary, and models that do not necessitate private internet access would be helpful. For example, providing access to research products at public libraries, and in a way that also makes such products accessible to Americans with disabilities, could be factors under consideration.

Provision of data also requires that clear data standards be provided for sharing, to make data (and associated metadata) as clearly interpretable as possible, and facilitating use by as many people as possible. Clear and enforced standards in sharing and reporting data will be extremely helpful to research under current circumstances - with many people in transient or contingent positions in the academy there is already an issue that poorly annotated or standardized data is useless once the only person who knows what it meant departs from the project. There are organizations considering standards for publication of such data and a multi-stakeholder and interdisciplinary group could be gathered to provide a basis for such guidelines now, and for possible future data types.



May 6, 2020

Attn: Lisa Nichols
Office of Science and Technology Policy
725 17th Street, Washington, DC 20501

RE: OSTP RFI: Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting from Federally Funded Research

Purdue University comments on Federal Register Document 2020-03189

From: Beth McNeil, Dean of Libraries and School of Information Services
Purdue University
West Lafayette, IN

Purdue University [Libraries] appreciates the opportunity to comment on the merits of Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting from Federally Funded Research. Public access to peer-reviewed scholarly publications is vital to Purdue's mission to advance the creation of knowledge for the global community through the provision, development, dissemination, curation, and preservation of world-changing, innovation, research and scholarship.

We address each question from this RFI as follows:

(1) What current limitations exist to the effective communication of research outputs (publications, data, and code) and how might communications evolve to accelerate public access while advancing the quality of scientific research? What are the barriers to and opportunities for change?

Comment 1. Numerous barriers exist for universities and their libraries, the most significant barrier being the cost of scholarly resources. As an intensive research institution, much of our published research is published behind paywalls, inaccessible to those without subscriptions. Journal subscriptions rise in cost by 4-8% annually, and academic libraries across the nation struggle to maintain access to these critical scholarly resources for their researchers, scholars, and students as budgets remain flat. This has affected higher education for years and is not unique to Purdue.

As a result, universities and their libraries find creative solutions to minimize the impact of subscription cancellations on our faculty and students for years. For fiscal year 2019, at Purdue approximately \$200,000 in scholarly subscriptions were cancelled. To remain within budget and responsibly steward University funds, fiscal year 2021 will require a large cancellation of subscription resources of approximately \$1M. Canceling highly used scholarly journals will be unavoidable. While alternative

access solutions exist, such as requesting articles direct from the author(s), or locating a pre-print within an institutional repository, neither universities nor the taxpayers should be faced with any barriers to research funded by the U.S. government. The public has the right to access this published research without having to pay. The very university paying researchers to conduct research and publish findings should not have to pay additional costs to access grant-funded published research.

Another barrier that exists is the inability to access or reuse the data and code within the articles, further stifling innovation and advancement. Our researchers require the ability to use the data and code to replicate scientific findings published in articles, for machine-learning and AI, text mining, and computing.

(2) What more can Federal agencies do to make tax-payer funded research results, including peer-reviewed author manuscripts, data, and code funded by the Federal Government, freely and publicly accessible in a way that minimizes delay, maximizes access, and enhances usability? How can the Federal Government engage with other sectors to achieve these goals?

Comment 2. The federal government should implement a national policy to ensure the public get immediate, barrier-free access to research paid for by taxpayers. This policy should require:

- Final peer-reviewed articles should be made immediately available upon publishing with no embargo period. The current embargo period of 12 months should be eliminated.
- Articles should be openly licensed to allow for full utility ((CC BY 4.0) or an equivalent license.
- The data and code within the articles should be immediately available with no embargo.
- The data and code within the articles should follow FAIR (Findable, Accessible, Interoperable, and Reusable) Data Principles: <https://www.go-fair.org/fair-principles/>.
- Final peer-reviewed manuscripts or published articles should be made available in a open and machine-readable formats to support and enable reuse for reproduction or further analysis.
- Free public access to and long-term preservation of final peer-reviewed articles or published versions and supporting data should be provided and managed via a Federal agency digital repository.

One model to emulate could be the Bill & Melinda Gates Foundation Open Access Policy, which requires all publications to be published under the CC BY 4. Or equivalent. The policy also states that all publications should be made immediately available, no embargo period. This includes the underlying data within the published research. Most importantly, the Foundation will pay fees required by publishers to publish open access immediately without an embargo. The Foundation pays the fees from a central budget directly to the applicable publisher or service provider, creating efficiencies for the researcher as well as the Foundation to ensure peer-reviewed publications follow the open access policy and is published as open access immediately upon publication. One of the many barriers that researchers encounter is funding to publish articles as open access. Having a national open access policy as well and a single national repository would create efficiencies for workflows, tracking outputs, and managing funding.

We encourage the U.S. Federal Government to look at the infrastructure the Gates Foundation uses to manage their processes and consider moving to something similar. We also encourage the US

government to pay publishers and providers directly to publish taxpayer-funded output as open access. This would shift the cost to publish openly from the university and researcher to the U.S. government. Article processing charges (APCs) to publish open access have been rising significantly. APCs have doubled in cost, from a mean of \$1,107 in 2005 to over \$2,065 in 2018. (Aasheim et al: <https://www.liberquarterly.eu/articles/10.18352/lq.10280>). By mandating that all federally funded peer-reviewed scholarship be made immediately available without an embargo and without having to pay fees would be an incredible improvement to the current system that creates unnecessary barriers.

Additionally, the ability to access the published peer reviewed scholarship within one single digital repository rather than the numerous agency-specific repositories would create ease of discoverability and access for researchers and the public alike. This could also create efficiencies in workflows for libraries who manage the universities institutional repositories.

(3)How would American science leadership and American competitiveness benefit from immediate access to these resources? What are potential challenges and effective approaches for overcoming them? Analyses that weigh the trade-offs of different approaches and models, especially those that provide data, will be particularly helpful.

Comment 3. Without a national Open Access policy, the U.S. will continue to fall behind countries who have already adopted full OA policies and have been accelerating research and increasing innovation. Providing open access to taxpayer-funded research is becoming common; it's also just good business. Open access to research helps to further innovation, resulting in an increase in competitiveness.

It is critical for higher education institutions to have immediate access to federally funded peer-reviewed scholarship. A timely example: universities across the U.S. have started research projects in response to the coronavirus pandemic plaguing the globe. Purdue researchers have launched more than 30 research projects and have applied for funding for nearly 20 additional projects to overcome the COVID-19 pandemic. Many of these projects are part of national or international collaborative research projects. For Purdue and all U.S. higher education institutions, companies, and research centers, the ability to access published research is critical to how quickly the virus can be understood, diagnostic tools developed, and medical supplies improved. Access to federally funded peer-reviewed scholarship is necessary for Purdue to continue as a leader in scientific discovery and research and is absolutely critical for scientists, like those at Purdue, to quickly address the pandemic.

(4)Any additional information that might be considered for Federal policies related to public access to peer reviewed author manuscripts, data, and code resulting from federally supported research.

Comment 4. One central repository for federal funded research outputs, both journal articles and the underlying data, for all grant-funded research, managed centrally would simplify the process for researcher deposit, enable necessary oversight by federal agencies regarding deposit requirements, and provide all citizens with access to research results. Appropriate metadata and good data management is critical for ensuring validation, transparency of research findings, as well as to maximize impact and value of publicly funded research through data reuse.

In closing, we thank the Office of Science and Technology Policy for soliciting guidance and input from stakeholders on this very important issue and hope that as a result an open access policy will be implemented to allow for immediate access to federally funded peer-reviewed scholarship.

Request for Information: Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research

The following response is being submitted by Gerald J. Perry, Associate Dean, University Libraries and Lori Ann M. Schultz, Senior Director, Research, Innovation & Impact, representing the University of Arizona.

We appreciate the opportunity to comment on this important issue. We applaud OSTP and the NSTC SOS efforts to explore making knowledge, information and data generated by federally funded research more readily available to a broad range of groups and individuals who provide support through tax dollars, but are limited in having access to the resulting research, knowledge and innovation.

Question 1: What current limitations exist to the effective communication of research outputs (publications, data, and code) and how might communications evolve to accelerate public access while advancing the quality of scientific research? What are the barriers to and opportunities for change?

Currently articles are under a 12-month embargo. Researchers at institutions that do not have subscriptions to those journals are at a disadvantage unless their institution participates in interlibrary loan (ILL) or they utilize a work-around, such as contacting the author, asking a researcher at another institution, or are willing to pay per article access fees. For students and trainees, when they leave their institution, they lose access unless they are subsequently affiliated with an institution with a subscription. In addition, even though the U.S. government spends billions of taxpayer dollars on research and the public has a right to access and use the results, the public cannot see the results unless they pay for an expensive journal subscription or pay the per article access fee.

The University of Arizona (UA) is a public land-grant institution, and as such has a mandate to provide education, research, and outreach to the residents of Arizona. For example, researchers in the Agricultural Extension program work directly with the public (ranchers, farmers, businesses, community groups, non-profit organizations), however in the current environment, they don't have easy access to research that directly affects them. In addition, the UA Health Sciences Library is a designated Resource Library for the state under the National Network of Libraries of Medicine program, with responsibilities for resource sharing.

The University of Arizona provides a huge economic impact to the state of Arizona. A study published in 2019 estimates that, with 38,138 students and approximately 15,000

faculty and staff, the economic output in Arizona as a result of UA research at more than \$1 billion (Economic and Fiscal Impact of the Arizona Public University Enterprise, <https://public.azregents.edu/News%20Clips%20Docs/Arizona%20Public%20Universities%20Enterprise%20Impact%20Report%20FY17%20final.pdf>).

During the current COVID-19 pandemic, many publishers are providing open access to COVID-19 research, but in some cases this access wasn't immediate and resulted in researchers experiencing delays in having access to the full corpus of research on the virus. This could easily have been prevented if research articles, data, and code had been immediately open and available to all.

For over a decade, academic libraries have struggled to keep pace with inflation in their information access budgets. As a result, many are now choosing to cancel their "big deals" with publishers (e.g., Elsevier, Springer, Wiley, etc.), resubscribe to a small fraction of the content (e.g., 10%-15%), and rely on ILL for the remainder. Budget cuts related to COVID-19 are only expected to accelerate this trend, resulting in fewer and fewer libraries from whom ILL requests for unsubscribed journal content may be sought. This impact on research will be greatly reduced if an open access policy were in place ensuring research is made immediately available.

COVID-19 has brought to light the critical importance of immediate access to research outputs. It is important to think broader about the need to have immediate access to research on all diseases (whether infectious or not) and other critical issues, such as sustainable agriculture, climate change, the environment, all research topics bring into sharp focus the critical need for an open access policy.

In order to reproduce and verify research findings, it is essential that data and code be made available. There are several reasons some researchers don't make their data and code available immediately. A researcher may want to wait until accompanying research articles are published, they may be worried that another researcher will use their data, publish an article before they do, and not give them credit for the work they did in compiling and analyzing the data. It is important that researchers share their data and code as soon as the research project is complete and make their data available in open formats, rather than proprietary, to make it easier to use and reproduce results.

A big barrier to change is the sense of ownership researchers feel towards the data and code they have produced and reluctance to share them, not only because they feel they might get scooped but also because of fears the data/code might be misused or misunderstood. For code, researchers sometimes express a perceived risk of becoming technical support for their code. Many of these fears may arise from a lack of

understanding of intellectual property issues and how risks arising from sharing materials can be mitigated. Perhaps additional emphasis needs to be placed on training on intellectual property, copyright, and researcher obligations. Providing resources for how to limit liability and risk would make researchers feel more comfortable in sharing research outputs. Minimizing risk should avoid reducing the usability of the dataset when possible.

Publishers, repository developers, research organizations, professional societies and advocacy groups are increasingly engaged in examining and improving metadata schema, interoperability standards, infrastructure and policy considerations, and content ingest models to improve discovery and access to digital artifacts, including articles, alerts, brief communications, data and more recently computational artifacts. As research pivots to considering computational knowledge, investment will be necessary to accommodate these new emerging forms of scholarly communication and their accessibility, discoverability and dissemination.

Question 2: What more can Federal agencies do to make tax-payer funded research results, including peer-reviewed author manuscripts, data, and code funded by the Federal Government, freely and publicly accessible in a way that minimizes delay, maximizes access, and enhances usability? How can the Federal Government engage with other sectors to achieve these goals?

The 12 month embargo on articles should be removed, final peer-reviewed manuscripts and published articles should be made immediately available in a free and open access digital repository provided by the federal agency that funded the research project, or a disciplinary or institutional digital repository. Articles should be open with a license such as CC-BY or similar open license and made available in multiple formats (for data mining, text mining, computational analyses). We recommend utilizing PubMed Central (PMC) for all federal agencies. NIH reports it costs about \$4.6 million per year to run PMC and provide access to more than 100,000 articles/year, representing a small fraction of NIH's annual budget. By requiring that all federal agencies use PMC, the value for taxpayers will greatly increase.

By contrast, the cost to provide open access by authors/researchers paying journal publishers' Article Processing Fees (APCs) continues to increase. This trend isn't sustainable. Funding to support APCs typically come from academic library information access budgets and federal grant funds. Academic library information access budgets continue to decrease and are only able to support a small percentage of requests at their institution. In addition, with decreasing federal grant funds, researchers are beginning to publish in journals that have longer embargos over those that are made

freely available but have APCs of a few thousand dollars. These trends could inadvertently drive researchers to publish in open but less rigorous, potentially unethical venues.

Data, code and computational artifacts that the article conclusions are based on should be made openly and freely available in order for the conclusions to be validated and replicated. Other research datasets should adhere to the Findable, Accessible, Interoperable and Reproducible (FAIR) principles. Data should be made available in a digital repository provided by the federal agency that provided the funding, or a disciplinary or institutional repository that follows the FAIR principles. These digital repositories must provide for long-term preservation. Since only larger institutions can provide an institution based digital repository for data and code, we recommend providing a centrally funded digital repository for data and code to reduce the burden on institutions.

Federal agencies could more strongly enforce existing data sharing requirements already in place at many agencies. One way to do this would be to more strongly weigh data management plans at the grant application stage. Weak plans should be a cause for concern. An end-of-grant report should include information on how the data management plan changed and exactly what was shared. To track compliance, researchers should obtain recognized persistent identifiers like DOIs for data and code. These identifiers could be mandated to be entered in the agencies' grants management platform (e.g., Research.gov) and cited in all relevant publications.

Federal agencies could better support FAIR-ification of data by making it very explicit in proposal preparation guidelines that funds can be requested for implementation of data management plans. This further reinforces the need to more strongly weigh data management plans during the review process since a good data management plan will include plans for making data and code usable by cleaning it, adding comments, organizing it, and adding documentation and other metadata. Funders can encourage these data curation activities by making it very explicit that funds can be allocated for them.

Question 3: How would American science leadership and American competitiveness benefit from immediate access to these resources? What are potential challenges and effective approaches for overcoming them? Analyses that weigh the trade-offs of different approaches and models, especially those that provide data, will be particularly helpful.

Open access to research boosts innovation, increases national competitiveness, and provides a better return on taxpayer investment in research. Providing open access to government sponsored research outputs is becoming a global norm, the U.S. is being left behind without an open access policy. In 2014, the [Open Data 500](#) study was launched at New York University by the Governance Lab to look at 500 companies that are using open government data to generate new businesses and develop new products and services. Open data clearly has an impact on the U.S. and the global economy.

Open and rapid access to the results of research also has the potential to boost the economic impact of technology transfer derived from inventions originating on our academic campuses through the ingenuity of our faculty. Such faculty often leverage their creativity and innovation into businesses, usually at the local or regional level as start-ups employing people in our communities. These businesses typically do not have the capacity to overcome paywalls that prevent access to scholarship, including data which is a critical commodity in an information and 4th Industrial Revolution economy. Paywalls thus limit innovation and the potential for economic growth of our cities and towns, and they hinder employment opportunities for our citizens.

We would like to thank you for facilitating a robust discussion of this important issue, and encourage OSTP to follow through by implementing a strong immediate open access policy for the results of publicly funded research.



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May 6, 2020

Submitted by e-mail to: publicaccess@ostp.eop.gov

Dr. Kelvin K. Droegemeier
Director, Office of Science and Technology Policy
Eisenhower Executive Office Building
1650 Pennsylvania Avenue, NW
Washington, DC 20504

**Response to OSTP Request for Information – FR Doc. 2020-06622
– “Public Access to Peer-Reviewed Scholarly Publications, Data
and Code Resulting From Federally Funded Research”**

Dear Dr. Droegemeier,

The Institute of Food Technologists (IFT) appreciates the opportunity to submit comments to the Office of Science and Technology Policy (OSTP) to offer our perspective and practical insights on improving public access to federally funded research results.

Founded in 1939, IFT’s mission is to advance the science of food and its applications across the global food system. With our strong roots in the US food industry, government agencies such as USDA and FDA, and prestigious US universities, we support American scientific leadership and competitiveness by providing continuing education, fostering collaboration and innovation, publishing the latest scientific research, and serving as a top resource for the latest industry news and trends. Our peer-reviewed publishing efforts are critical to our nonprofit association’s success in fostering innovations in the food science and technology field.

IFT serves close to 15,000 members affiliated with academia, industry, and government. Through our three renowned scientific journals, IFT contributes to the dynamic and innovative system of scholarly communication. Our journals provide cutting edge information to readers ranging from students to small start-up entrepreneurs to major food manufacturers, ensuring broad access to government-funded research.

Each year, our journals engage more than 2,000 preeminent food scientists, technologists, and engineers among our comprehensive pool of editors and peer reviewers. Such an extensive resource of



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expert food scientists ensures that the research we publish for the scientific community is important, comprehensive, and of high quality and integrity.

Two of IFT's peer-reviewed journals, *Comprehensive Reviews in Food Science and Food Safety* and *Journal of Food Science Education*, have always been freely available to the public online. In addition, the *Journal of Food Science (JFS)* is a hybrid-model journal with a traditional subscription model plus the option for authors to choose Open Access. Select *JFS* content is free to the public, even if published with traditional copyright transfer. Subscription content in *JFS* is available to IFT members at a discounted subscription rate; to many universities, government agencies, and corporations worldwide via institutional subscriptions; and on an individual article-rental basis. To ensure that the public is informed of research findings, IFT, along with our publishing partner Wiley, regularly promotes newsworthy research through popular media and news releases.

IFT is committed to the widespread dissemination of scholarly research and greater sharing of data. In recent years, we have adopted journal policies to increase transparency and espouse open science initiatives, while staying in tune with the food science research community's needs, such as slower adoption of Open Access than in other disciplines.

Reducing or eliminating the current one-year embargo for Green Open Access (e.g., depositing a free version of federally funded research in PubMed) without providing funding for Gold Open Access (paying to publish Open Access in the journal to begin with) would significantly jeopardize our organization's ability to invest in producing the high-quality peer-reviewed journals that our readers in the science of food community rely on. In so doing, such a policy would contravene Congress' clear guidance to take our role and investments into consideration. Furthermore, such a policy would directly result in a reduction in either the quantity or quality (or more likely, both) of peer-reviewed journal articles produced by hundreds of organizations like ours.

This would not only be harmful to the research enterprise, it would also be harmful to the food industry professionals, scientists, and consumers who are the ultimate beneficiaries of the scholarly journals we produce.



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The needs of society publishers are unique and vary between disciplines; a one-size-fits-all approach will not work for all fields of federally funded research. We would like to see OSTP create opportunities to make faster progress to advance open access and open science by working in partnership with the society and publishing community rather than by pursuing blanket policy mandates across all disciplines that may have inadvertent negative impacts on scientific societies and, by extension, on the competitiveness of American scientists and science.

In addition, IFT offers responses to the questions below for OSTP consideration:

- 1) What current limitations exist to the effective communication of research outputs (publications, data, and code) and how might communications evolve to accelerate public access while advancing the quality of scientific research? What are the barriers to and opportunities for change?***

Peer reviewed publications are highly specialized and written such that a limited, technical audience can fully evaluate the validity and societal implications. Rather than making federally funded peer reviewed publications immediately available to the general public, society would be better served if a non-technical summary were required for each published article, and that be made free to the public on the current infrastructure immediately at the time of publication.

Advancing the quality of scientific research will not be achieved by imposing policies that will harm US scientific societies' ability to maintain high-quality peer-review and publication processes or impede on intellectual property rights of researchers and publishers.

- 2) What more can Federal agencies do to make tax-payer funded research results, including peer-reviewed author manuscripts, data, and code funded by the Federal Government, freely and publicly accessible in a way that minimizes delay, maximizes access, and enhances usability? How can the Federal Government engage with other sectors to achieve these goals?***

Mandating Gold Open Access for federally funded research would maximize access for US taxpayers as well as for the worldwide public, but would require a significant taxpayer contribution of research



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funding for Open Access Article Publication Charges (APCs), if journals are to remain viable. High-quality peer review is resource-intensive; even with a largely volunteer pool of expert editors and reviewers who contribute thousands of hours of time each year, nonprofit society publishers must make substantial investments in systems infrastructure and staff to ensure that we can deliver vetted, quality scientific research. Funding to cover those costs must come from either subscriptions or APCs.

If such a mandate were to be made for Open Access publication of federal-funded research, required Open Access funding should be included in each new federal grant. More mathematical modeling should be done by OSTP to calculate the taxpayer cost of including Open Access funding of all federally funded research that is published in journals, and such funding should be included in the plan.

3) How would American science leadership and American competitiveness benefit from immediate access to these resources? What are potential challenges and effective approaches for overcoming them? Analyses that weigh the trade-offs of different approaches and models, especially those that provide data, will be particularly helpful.

Universities and research institutions have direct access or can pay for a one-off need. While it is not clear who currently does not have access to the science, it is plausible that funding pressure in start-up companies may limit their access. Making all US funded research Open Access with no embargo period will increase international access and may have the unintentional effect of benefiting non-American scientists more, as American science leadership already has access with the current model. Alternate models should be explored that will target any US population segments who do not have access to federally funded research. For example, access could be provided through US public libraries with a public library access program.

Besides providing benefit to international scientists, mandating Open Access without providing an adequate funding model may ultimately harm American science leadership and competitiveness by making nonprofit US scholarly societies and the services they provide to their scientific communities unsustainable.



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The issues raised by OSTP are complex and require an ongoing dialogue and partnership with the research community and nonprofit publishers such as IFT to advance open science. There is a need to consider differences between disciplines and journals that will be impacted by mandated policies in distinct ways.

Our organization is currently deeply engaged in efforts to respond to the COVID-19 pandemic's effects on the food supply chain. We must focus in this moment on supporting our members in the food industry and are concerned that OSTP's significant new regulatory proposal is a distraction from our ongoing efforts to respond to the crisis and would undermine our stability and undercut our ability to respond to future food supply chain crises.

We urge you not to disrupt our ability to support the advancement of research in food science, and we look forward to working together to identify solutions that advance the goals of open science without undermining the communication of research findings and analyses through peer-reviewed journals.

Thank you again for the opportunity to submit these comments.

Sincerely,

E. Allen Foegeding
Editor in Chief, IFT Scientific Journals



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May 6, 2020

Lisa Nichols, Ph.D.
Assistant Director for Academic Engagement
Office of Science and Technology Policy
Executive Office of the President
Washington, DC 20502
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RFI Response: Public Access

Dear Dr. Nichols:

ASME is pleased to respond to the Request for Information on Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting from Federally Funded Research. We are writing to express our opposition to any change to the current 12-month embargo period which would jeopardize the intellectual property of American organizations engaged in the creation of high-quality peer-reviewed journals and research articles.

Since 1880, ASME's mission is to advance engineering and provide solutions that benefit humankind. We have balanced our mission with reasonable economic models, as expected of a truly charitable non-profit entity, allowing us to become an essential resource for mechanical engineers and other technical professionals throughout the world.

ASME is one of the largest technical publishing operations in the world, offering thousands of titles and some of the most prestigious engineering content. We provide valuable publishing services, including the coordination of peer-review, which are essential for ensuring the high quality and integrity of many scholarly publications. It is important to note that peer-reviewed papers are not the direct result of the expenditure of taxpayer funds; conversely, they result from investments by the publisher, which make them the "gold standard" of scientific communication.

Over the years, ASME has dedicated significant investments to ensure our peer-review is of the highest quality. These investments include addressing the physical and technology costs—including print and online versions of published content—distribution channels, seamless author support and funding associated with developing new publications.

ASME has also dedicated significant resources in innovative platforms that enable exceptional digital peer-review, production, distribution, interoperability and discovery of the latest scientific and scholarly works. Our [digital collection](#) provides unparalleled depth, breadth and quality of peer-reviewed content and includes: 33 technical journals; 26 conference proceedings (annually); 3,500 journal articles reviewed by over 8,000 subject matter expert editors; 258,000 technical papers and

2,010,000 technical pages. The ability to recoup our investment enables innovation, allows infrastructure to be developed and provides incentives to try new approaches. Long-term stewardship of content carries significant costs that are already being borne by publishers.

The revenue from publishing not only enhances our publishing enterprise, but it is also reinvested back into critical engineering and science programming to support current and future generations of engineering students and early career engineers. For example, [ASME INSPIRE](#) is a classroom-based, scalable STEM education program that delivers a mind-expanding learning experience primarily to middle and high school students who might otherwise never be exposed to the opportunities available in engineering. Now offered to more than 100,000 students in over 1,300 schools in all 50 states, this standards-aligned program introduces students to the potential rewards of an engineering career. Two-thirds of the schools that participate in ASME INSPIRE are designated as Title I, meaning that at least 40 percent of their students come from low-income households.

Another example of one of our most valued programs, is the [ASME Federal Government Fellowship Program](#), which was established in 1973 to provide nonpartisan, unbiased technical engineering expertise to policymakers on issues such as critical infrastructure, advanced manufacturing, energy, bioengineering, robotics and research and development.

Question 1: What current limitations exist to the effective communication of research outputs (publications, data, and code) and how might communications evolve to accelerate public access while advancing the quality of scientific research? What are the barriers to and opportunities for change?

ASME continues to accelerate public access while advancing engineering and technological research to ensure the United States remains globally competitive. While ASME endorses the dissemination of the results of all peer-reviewed research, including research supported by federal funding, it must be done in a manner that is sustainable for the publishing community. We support the free distribution of the interim and final research reports provided by researchers to their funding agencies, which includes preprints, research data and other forms of early stage articles into which publishers have made no investment. This is markedly different from the value-added journal articles in which the private sector invests significant resources to produce. We also offer Open Access to authors, providing them with the ability to pay Article Publication Charges (APCs) so that their papers are immediately available upon publication. In addition, virtually all scientific publications are immediately available to the American public at low or no cost via library walk-ins and interlibrary loan.

It is imperative that the post-publication “embargo periods” on private sector journal articles that report on federally funded research not be lowered in order for us to be able to continue to invest in peer-review and online digital technologies, as well as our philanthropic programs. The current mandate—which requires publishers to give away their articles for free within 12 months of publication—was settled on as the lowest feasible amount of time for the private sector to recoup its investments. Reducing the time afforded to publishers to recoup investments from a full copyright term (life of the author + 70 years) to 12 months makes publishing the highest quality content more difficult, if not impossible, for some scientific disciplines. Anything lower than 12 months would make it impossible for publishers to invest in publishing scholarly journals—effectively nationalizing the sector—and undermine American jobs, exports, innovation and intellectual property. One overlooked

effort is that ASME has been complying with OFAC regulations when it comes to sensitive content that is viewed as having potential national security concerns.

Lowering the embargo period was a concern that was reiterated by 58 professional scholarly societies in a [letter](#) recently sent to the Administration. ASME also joined with 135 organizations representing publishers in scientific and medical societies, global companies and the U.S. Chamber of Commerce in a [letter](#) to the Administration seeking opportunities to collaborate.

Question 2: What more can Federal agencies do to make tax-payer funded research results, including peer-reviewed author manuscripts, data, and code funded by the Federal Government, freely and publicly accessible in a way that minimizes delay, maximizes access, and enhances usability? How can the Federal Government engage with other sectors to achieve these goals?

We propose that OSTP and our Federal partners, work with ASME and hundreds of other scholarly publishers who are members of [STM](#) and the [Association of American Publishers \(AAP\)](#) to develop well-designed pilots to collect evidence and assess the impacts on the cost and quality of scientific communication before policy changes are implemented. Pilots need to be designed with inputs from researchers, institutions, publishers and federal agencies, in collaboration and coordination with aligned efforts such as the [STM 2020 Research Data Year](#).

Question 3: How would American science leadership and American competitiveness benefit from immediate access to these resources? What are potential challenges and effective approaches for overcoming them? Analyses that weigh the trade-offs of different approaches and models, especially those that provide data, will be particularly helpful.

Several reputable individuals and organizations have discussed the important role professional scholarly societies play in maintaining American science leadership, and the harm any change to the current policy would have on American competitiveness, as stated below:

- Senator Thom Tillis (R-NC), chairman of the U.S. Senate Judiciary Subcommittee on Intellectual Property, wrote a [letter](#) opposing any changes to the current policy, stating: “I am concerned this policy under consideration would undermine incentives for journal [publishers] to invest in the publishing and archiving of scientific journal articles. As a consequence, this policy could diminish the high quality of scientific and other scholarly research in the United States.”
- Ten Republican Members of Congress who sit on the U.S House Committee on the Judiciary sent a [letter](#) to the Administration expressing concerns about copyright protection, as well as the significant impact any policy change would have on the American taxpayer who would have to “foot the bill—estimated to be in the billions—for peer-reviewing and publishing thousands of articles a year.”
- Eight Republican Members of Congress with a background in medicine also sent a [letter](#) to the Administration noting that “such a policy would undermine American jobs, exports, innovation and intellectual property resulting in scientific societies ceasing operations or no longer

disseminating U.S.-sponsored science that is key to maintaining U.S. leadership in science and technology on the global stage.” This letter is attached.

- The University of California, Davis Library and the Mellon Foundation produced the [Pay It Forward Report](#) in 2016. The report proposes a change in publishing business models, forcing a shift from a pay-to-read (subscription) model to an up-front pay-to-publish (author pays) model. It also summarizes attitudes about publishing and open access (a.k.a. pay-to-publish model content) collected through surveys and focus groups consisting of University of California faculty and researchers who publish. Here are a few of the findings:
 - “[O]pen access was rated the lowest in importance” among factors a researcher considers in selecting a journal in which to publish.
 - To achieve a complete transition to the open access model—supported through up-front, author-pays open access publishing charges—resources beyond what are currently allocated to universities would be necessary: “Our analysis confirmed that for larger research-intensive institutions, publication charges in a fully APC-based OA environment are likely to exceed current journals budgets alone. Additional funds available to the researcher, including grant funding, should be considered to ‘top off’ the funds redirected from libraries.”
 - One in six researchers “felt that it would be inappropriate to utilize grant funds to pay open access charges.”

Similar concerns were raised about a European proposal called “Plan S” released in 2018, which sought to force a global policy shift in scholarly publishing business models away from the existing pay-to-read (subscription) model in favor of an up-front pay-to-publish (author pays) model. Many funders rejected and criticized Plan S, including the following:

[National Academies of Science](#) (USA):

- “The architects of Plan S have not consulted broadly with researchers, editors and leaders of scientific societies to obtain their views of how devastating this plan might be for the very organizations that support researchers and their disciplines.”
- “I don’t know of many scientific societies, including the NAS, that have financial reserves of that magnitude to transition their journals to full OA.”
- A report prepared for PNAS by an outside firm, prior to the release of the Plan S proposal, estimated the need for \$450,000 in transition costs, \$6.3 million in “bridge” funds and \$4 million in ongoing cash reserves to make the transition to full OA—including an APC around \$6,000 depending on article length and waivers. (PNAS is expected to only cover its costs, not to make a profit or contribute revenue to the NAS.)

[American Association for the Advancement of Science](#) (AAAS)

- “Implementing such a plan, in our view, would disrupt scholarly communications, be a disservice to researchers, and impinge academic freedom...It would also be unsustainable for the Science family of journals.”

- “Plan S would result in funder-dependent publishing in which author freedom is constrained by a ‘pay-to-play’ approach.”

[The Times Higher Education](#)

- “Plan S ‘could prove fatal’ for learned societies.”

[ALL European Academies](#) (ALLEA)

- “Plan S may effectively hand control of who can publish to finance officers rather than academics and will further exacerbate the gap in research outputs between well-endowed disciplines...and those less well off.”

Question 4: Any additional information that might be considered for Federal policies related to public access to peer-reviewed author manuscripts, data, and code resulting from federally supported research.

We appreciate your recognition that publishers are valued partners that make important contributions to the advancement of research, but we urge you to delay any further consideration of lowering the current 12-month embargo period for peer-reviewed research articles. We believe it will undermine the critical peer-review ecosystem and put non-profit societies at a major disadvantage to allow the continuation to support and innovate in the publishing space and invest back into critical programs supporting ASME’s mission.

Currently, ASME is engaged in responding to the COVID-19 pandemic. We responded promptly to the [request](#) from the chief science advisors from 12 nations by immediately making available all of our [technical peer-reviewed papers](#) that directly or indirectly pertain to COVID-19. In addition, ASME is a leader in addressing COVID-19 in the additive manufacturing and 3D printing industry. In collaboration with the Department of Commerce (Manufacturing USA/America Makes), the Food and Drug Administration, National Institutes of Health and Veterans Health Administration, we are driving discussions and solutions regarding PPE equipment, medical devices and ventilators, access to validated designs and supply chain challenges.

In closing, we appreciate your consideration of our views and look forward to continuing to collaborate with the Office of Science and Technology Policy (OSTP) and other federal partners on issues of mutual interest.

Best Regards,



Thomas Costabile, P.E.
Executive Director/CEO

May 6, 2020

Lisa Nichols
Assistant Director for Academic Engagement
Office of Science and Technology Policy
Via email: publicaccess@ostp.eop.gov

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Re: RFI Response: Public Access

Dr. Nichols,

We are writing in response to the OSTP Request For Information regarding “Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research ([85 FR 12949](#))”. For transparency, we were a signatory and the coordinator of the January 17th open letter in support of the proposed White House Executive Order for immediate open distribution of peer-reviewed journal articles reporting on federally-funded research - <https://blogs.plos.org/plos/files/2020/01/Publisher-Support-Executive-Order-letter-Jan-17-2020.pdf>.

PLOS is a nonprofit 501(c)(3) corporation based in San Francisco, California, that publishes a suite of seven influential Open Access journals across all areas of science and medicine. Founded in 2001, all our journals publish research that is rigorously reported, peer reviewed, and immediately available without restrictions, promoting the widest readership and impact possible. Our journals’ editorial policies range from the highly selective *PLOS Biology* and *PLOS Medicine*, to *PLOS ONE*, the first multidisciplinary peer-reviewed journal to select solely on rigorous research and ethics rather than perceived impact. To date, we have published 274,586 articles across our journals under this Open Access model. We are a successful and respected publishing organization that has pioneered the sustainability of rigorous Open Access publishing.

In addition to being fully Open Access, since 2014 all PLOS journals have required authors to make all data necessary to replicate their study’s findings publicly available without restriction at the time of publication. When specific legal or ethical restrictions prohibit public sharing of a data set, authors must indicate how others may obtain access to the data. (Please see <https://journals.plos.org/plosone/s/data-availability>.) As of April 17, 2020, 131,501 articles have been published with such Data Availability Statements, proving that such a requirement does not create a barrier for authors.

Open Access to Research Outputs

PLOS already enables taxpayer-funded research results, data, and code to be “freely and publicly accessible in a way that minimizes delay, maximizes access, and enhances usability.” In our 19 years of operation, we have found no evidence that the quality of published research is affected by the business model under which it is published, since rigor and quality are driven by editorial policies. The same authors, reviewers, and editors are shaping US research output, whether they happen to submit to, or review for, PLOS or a subscription publisher. In fact, we will suggest later in this letter how increased transparency in reporting may in fact be a signal of increased rigor.

Since successful, rigorous Open Access publishers already exist, we imagine that the main issue the OSTP faces in its drive for greater public access lies with how to encourage and enable publishers – for profit, nonprofit, scholarly society – who utilize a toll access/subscription model, to transition to a model that supports increased Open Access.

So far, much of the incremental movement to more Open Access in the US has been via policies and legislation that require the posting of versions of articles into repositories, along with a common 12-month embargo prior to public availability. (The OSTP 2013 memo referenced in your RFI, along with the NIH Public Access Policy (<https://publicaccess.nih.gov/policy.htm>), are probably the best-known examples of this approach.) Calls to increase or decrease these embargo periods have characterized the discussion of public access in the US. Such embargoes are to accommodate the need for toll access/subscription publishers to have an exclusive time-period to sell access to this published research, via subscriptions. Therefore, this need for an embargo is driven by the subscription business perspective.

At this point, during the global COVID-19 pandemic, we would point out that one of the first calls from national leaders on science policy on March 17 (including the OSTP) was to make research related to the novel coronavirus freely available - <https://www.whitehouse.gov/wp-content/uploads/2020/03/COVID19-Open-Access-Letter-from-CSAs.Equivalents-Final.pdf>). And, it should be noted, most publishers who were not already Open Access have complied with this call.

Does this constitute consensus across the sector that the current mixed model landscape of published research is not fit for purpose during a time of crisis?

For this very reason, and in service of efficient, rigorous, and open science, we encourage you to remain firm on any stated goal of the proposed Executive Order for *immediate* free public access and reuse. We understand that toll access/subscription publishers will require time and help to transition – in some cases several years. However, in order to be inspired to prepare properly for a full transition, the goal of immediate Open Access should remain clear, to clearly guide the sector. Even with a 6-month embargo period, the dominant model remains one of toll access/subscription, which perpetuates a toll access mode of thinking for Federally funded

research. Implementing incremental reductions to embargo periods does not trigger publishers, or the US scholarly communication market, to properly prepare to transition to immediate Open Access.

On this note, we believe that the whole US scholarly communication market, and not just publishers, should be encouraged to prepare for such a transition. We encourage the OSTP to engage with the research institution and library sector to prepare them to transition their subscription budgets to support similarly centralized fees for Open Access. It has been argued by many subscription publishers that the transactional APC model is not suited for highly selective journals, and this argument is then extended to argue against the feasibility of Open Access itself (whereas it just reflects on this specific business model). However, this argument does not take into account that 1) APCs are not the only model that can support Open Access and 2) if budgets that support the approximately \$10 billion+ scholarly publishing industry are repurposed to pay for Open Access, then such OA fees will not be viewed as additional costs or as impediments to authors getting published. As much as possible, and as much as the market decides is fair, publishers can aim to earn similar revenues to cover their costs for the crucial services they provide. Subscription budgets will just transition to paying for Open Access publishing operations.

Many institutions and libraries stand ready to support Open Access, for example those listed at <https://oa2020.us/>. It is the rejection of Open Access as inherently unattainable, due to the rejection of the APC model by some publishers, which causes one of the delays of achieving Open Access. PLOS would happily work with the OSTP to help explore and showcase alternative publishing models to inspire the market to view Open Access as simply the next model of scholarly publishing, and not some radical shift.

Three initiatives that highlight the potential for new, non-APC types of Open Access models are:

- The “Subscribe to Open” (S2O) initiative by Annual Reviews - <https://www.annualreviews.org/page/subscriptions/subscribe-to-open>
- PLOS’ flat-fee model <https://blogs.plos.org/plos/2020/04/plos-and-iowa-state-university-library-announce-apc-free-open-access-publishing-agreement/>
- PLOS’ imminent “collective action” model for our highly selective journals *PLOS Medicine* and *PLOS Biology* (recent webinar: <https://www.youtube.com/watch?v=DJGnmJNjnsA>). In this model, many institutions pay a tiered, central OA fee based on their level of publishing at the journals, keeping the fees appropriate and affordable for all.

We are not suggesting a transition to Open Access is easy for a toll access/subscription publisher, but we believe it is possible if subscription publishers:

- Understand that the end point is immediate Open Access and reuse with no exceptions. Gradual decreases in embargo periods do not encourage the development of infrastructure that can support immediate Open Access.
- Develop their own models that can support immediate Open Access. While a transition is possible, that is not to say it is without effort.
- Leverage their sales channels and relationships with libraries and institutions to develop agreements like the “Subscribe to Open”, flat-fee OA models, or collective action OA models listed above. These are just three ways different types of journals – including highly selective ones – can be appropriately supported without individual APCs.
- Work together with policymakers and the OSTP to enable and drive a wholesale transition of the market and budgets to pay for Open Access. One of the current drawbacks to considering Open Access is that it is viewed as an additional or alternative expenditure over and above toll access and subscriptions.

Open Data, Code, Methods

All our recommendations above presume that open data, code, and methods are an essential part of Open Access. PLOS successfully introduced an open data policy in 2014. Published studies have indicated that there is a citation advantage to articles which openly link to their underlying data, and two are linked below:

Colavizza G, Hrynaszkiewicz I, Staden I, Whitaker K, McGillivray B (2020) The citation advantage of linking publications to research data. PLOS ONE 15(4): e0230416.

<https://doi.org/10.1371/journal.pone.0230416>

Piwowar HA, Day RS, Fridsma DB (2007) Sharing Detailed Research Data Is Associated with Increased Citation Rate. PLOS ONE 2(3): e308.

<https://doi.org/10.1371/journal.pone.0000308>

If all published Federally funded research linked to the data underlying its findings, it could achieve a rapid and wholesale increase in global citations and impact, enhancing the reputation of American discovery and innovation. Therefore, our recommendation is that the OSTP considers mandating the sharing of data and code underlying research findings for all Federally-funded research, according to the FAIR data principles (<https://www.go-fair.org/fair-principles/>) and PLOS' definition of a minimal data set:

<https://journals.plos.org/plosone/s/data-availability#loc-minimal-data-set-definition>. We are not saying our policy here is final and definitive, as we develop it in line with community standards, but it serves as a concrete example to review.

Our data policy considers the necessary exceptions required for legal or ethical reasons. Please see the policy in full at: <https://journals.plos.org/plosone/s/data-availability>, all elements of

which we recommend to be considered as a guideline for Federally funded research, along with guidance from FAIRsharing - <https://fairsharing.org/>.

American science leadership and American competitiveness

Research is more impactful when it is open (<https://www.digital-science.com/blog/news/the-ascent-of-open-access-report/>) and open science – including Open Access to research outputs, links to open data, methods, and code underlying research – is essentially science done according to its norms. While the US has always been a leader in research *output*, there is an increasing awareness of the importance of scientific rigor and reproducibility, and not just volume. We therefore recommend that the US should aim to be a leader in scientific rigor, too. As this 2011 study—focused on psychological research—shows, transparent and open science can be a *signal* of the highest quality, rigorous research.

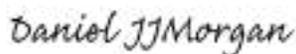
Wicherts JM, Bakker M, Molenaar D (2011) Willingness to Share Research Data Is Related to the Strength of the Evidence and the Quality of Reporting of Statistical Results. PLOS ONE 6(11): e26828. <https://doi.org/10.1371/journal.pone.0026828>

We recommend, therefore, that in order to ensure that American, Federally funded research is, and is signaled to be, world-leading science, that the OSTP considers the manifesto for reproducible science in the article below. The OSTP promoting these as norms would fully entrench the already established citation benefits of Open Access and data availability alongside the context of the highest quality science.

Munafò, M., Nosek, B., Bishop, D. *et al.* A manifesto for reproducible science. *Nat Hum Behav* 1, 0021 (2017). <https://doi.org/10.1038/s41562-016-0021>

We thank you for the opportunity to respond to your request for information. As stated at the outset, and in our open letter of January 17th, PLOS is ready to work with the OSTP on ensuring the most openly available, rigorous, and reproducible research is published for the benefit of all Americans, and globally. There are some barriers for a *transition* to Open Access, but these are not insurmountable, especially if sectors work together on a clear endpoint. We encourage the OSTP to assume a leadership position in driving a wholesale shift in the scholarly communications market to ensure that budgets spent on subscriptions can shift to be spent on the various models that support immediate Open Access.

Yours faithfully,



Daniel Morgan
Director, Community Relations

Request for Information: Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research

Submitted by: Anthony D. So,* MD, MPA, Professor of the Practice and Joshua Woo,* Undergraduate Student, Innovation + Design Enabling Access (IDEA) Initiative, Department of International Health, Johns Hopkins Bloomberg School of Public Health and Transformative Technologies and Institutions theme, Johns Hopkins Alliance for a Healthier World; Caitlin Carter,* MLIS, Scholarly Communication Informationist, Johns Hopkins University and Medicine Welch Medical Library

We welcome the opportunity to respond to the White House Office of Science and Technology Policy's Request for Information on "Public Access to Peer-Reviewed Scholarly Publications, Data, and Code Resulting from Federally Funded Research." To this issue, we bring the perspectives of a University professor and researcher, student and librarian.

I. Current Limitations to Effective Communication of Research Outputs

In a time of COVID-19, the critical importance of rapid and unimpeded access to research findings has never been clearer. By contrast to the SARS pandemic less than two decades ago, the pace of research on COVID-19 is exponentially faster (see **Figure 1**). During the SARS outbreak in 2003, [over ninety percent of the SARS-related research entered the published literature after the outbreak had subsided](#). Today COVID-19 research is rolling out in preprints at a furious pace. As of May 4th, medRxiv and bioRxiv already had over 2700 COVID-19 SARS-CoV-2 preprint publications. Rapid dissemination has been essential to the country's, as well as the global, response to COVID-19 by making readily available findings on health technologies to combat COVID-19, from PPE and diagnostics to drugs and vaccines. The fact that many closed-access journals have opted voluntarily to make COVID-19 journal articles open supports why access to government-funded research is in the public's interest.

However, it should not take a pandemic to ensure access to government-funded research. The NIH Public Access policy currently requires all publicly funded research to be made openly available within 12 months of publication. Meanwhile, the Bill and Melinda Gates Foundation, one of our nation's largest foundation funding biomedical research, requires the [immediate publication of funded work, without any embargo period](#). Even with COVID-19 research being made freely available upon publication, many of the key research findings related to the care of these patients remain behind paywalls. While as many as [1 in 7 COVID-19 patients reportedly experience secondary bacterial infections and half of all COVID-19 deaths showing secondary](#)

*The opinions expressed herein are our own and do not necessarily reflect the views of The Johns Hopkins University.

[infections](#), healthcare providers still face barriers accessing relevant journal literature. Whereas almost 90% of “COVID-19” articles are available open access, only 58% of articles on “secondary bacterial infections” over the past 10 years are available open access. Similarly, only 41% and 34% of articles on “hydroxychloroquine” and “ventilator-associated pneumonia,” respectively, are freely available as open access over the past ten years.**

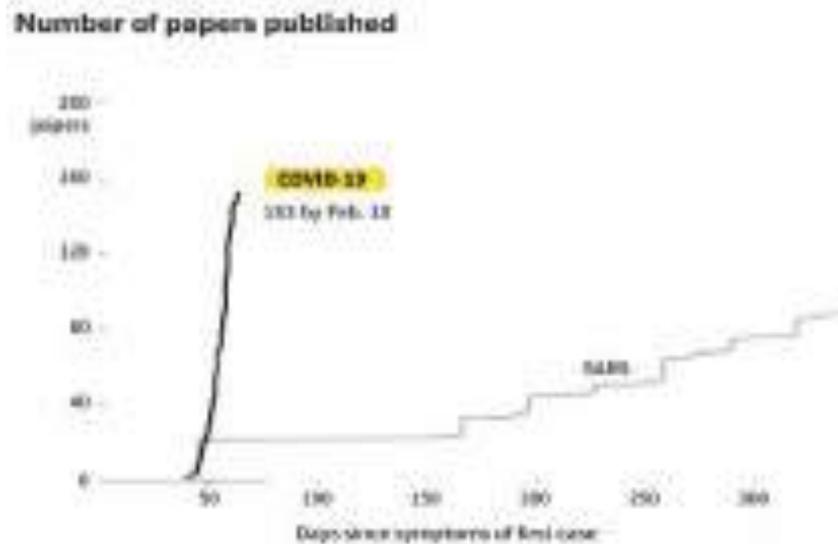


Figure 1: Number of papers published in SARS and COVID-19 pandemics

Adapted from: Sharma, Manas, et al. Speed Science: The risks of swiftly spreading coronavirus research. *Reuters Graphics* 2020.

As the pandemic has demonstrated, the challenges of modern-day medicine and public health interconnect the world. By contrast to U.S. government-funded researchers, European investigators are supported by [funders, as seen in cOAlition S](#), that have more consistently embraced the immediate open access to funded research. Such [open access research secures higher citation rates](#). So in the United States, a one-year embargo on research only disadvantages researchers funded by U.S. government funding agencies, embargoing the results of their research behind subscription paywalls and limiting their dissemination and citation by others for an entire year. The embargo period on the federal government’s public access policy should be eliminated. Government-funded research should be immediately available to the public upon publication, and if journals would like to have the opportunity of disseminating such research, the final version published in the journal should be made available to PubMed Central as part of an open access repository and also flagged as being freely available on the journal’s website. Peer reviewed scholarly research should be openly licensed and machine readable to ensure the ability for secondary analysis and collaboration.

** These figures of open access, by search term, were determined using the Web of Science database.

II. Fair returns on taxpayer-funded research results

The U.S. NIH has put in place some normative guidance to ensure taxpayer-funded research results are made available in a timely way that maximizes access. The Bermuda Rules committed investigators in the Human Genome Project to share sequencing results of any DNA base pair sequence within 24 hours of completion to GenBank, a public database. By making such information publicly available, this created a record of prior art and helped to prevent patenting of these building blocks of knowledge. The NIH Working Group on Research Tools flagged in 1998 the “growing difficulties and delays in negotiating the terms of access to research tools” and set important norms to “[promote free dissemination of research tools without legal agreements whenever possible.](#)” However, the Bayh-Dole Act of 1980 is the cornerstone framework that governs the dissemination of research funded by the U.S. federal government. By patenting and licensing intellectual property resulting from federally funded inventions, grantees facilitate the commercialization of such technologies. Apart from requirements such as the grant of a non-exclusive, paid up license to the invention to the U.S. government, such inventions must be disclosed to the federal agency funding the work, and inventors must acknowledge such government support in any patent application.

While the U.S. Department of Commerce tightened these obligations under the revised Bayh-Dole Rule in 2018, greater transparency of pharmaceutical R&D is needed during the FDA registration process. A case in point is Truvada and Descovy, drugs used for pre-exposure prophylaxis (PrEP) for HIV prevention. The U.S. government has alleged that Gilead, its manufacturer, has refused to reach a licensing agreement for patents developed from government-supported research and has acted in a manner that is “[malicious, wanton, deliberate, consciously wrongful, flagrant, and in bad faith.](#)” The government maintains that Gilead has realized lucrative gains, with treatment costs exceeding \$20,000 a year for each patient, while not declaring any government support in the development of the product. This has resulted in a government lawsuit against Gilead on grounds of [patent infringement and profiteering off hundreds of millions of taxpayer dollars that went into public PrEP research.](#) And despite Gilead’s retaliatory lawsuit against the United States, the fact still stands that taxpayers paid twice: both for the [CDC research and again to pay Gilead billions for PrEP through the sale of Truvada.](#)

Open access to publicly funded research can create, though, conditions that contribute to significant returns on government investment. The Human Genome project, for example, has [generated an economic return of \\$796 billion on a \\$3.8 billion investment](#)--a return of investment of \$141 in economic activity for every \$1 of taxpayer money invested. A defining core value of the Human Genome Project was the effort to make its findings freely available, including through the Bermuda Rules.

III. Public access—key to American science leadership and competitiveness

Amidst the COVID-19 pandemic, [government officials around the world, as well as funders and publishers](#), have called for open access. However, other public health emergencies have not been met by such commitments. In 2015, those addressing the Ebola crisis in Liberia published an [open letter](#) in the *New York Times* arguing that the failure to appreciate the risk of this deadly disease occurring in Liberia, in part, resulted from the relevant literature being hidden behind journal subscription paywalls. Had the 1982 paper warning of this risk been freely available, its findings might have been actionable, and follow-on research, conducted before the crisis set in. Going open access, only after a pandemic is upon us and only for a narrow corridor of health information, would be a short-sighted approach to ensuring fair returns and continued research leadership in the United States, let alone preparing for the next pandemic.

Even in the United States, institutions have increasingly been [unable to afford access to the scholarly literature](#) despite contributing to the creation of this knowledge base. By contrast, medical journal publishers have realized [year-on-year profit margins as high as 36%](#), greater than returns even by high-tech firms such as Apple, Amazon or Google in that year. Since most published journal research is either government-funded or indirectly subsidized through philanthropies benefiting from public tax relief, this amounts to a corporate subsidy at taxpayer expense. U.S. taxpayers, in effect, pay twice--once for the research to be conducted and again to access the results of these publicly funded studies.

IV. Supporting effective innovation ecosystems

The tail of the COVID-19 pandemic is likely to linger for years to come, but of concern, the commitment of closed access journals may well be less lasting than the disease threat. In fact, commercial publishers like Elsevier and Springer made their COVID-19 research only temporarily open access--a condition that may sunset at some point and [return this work behind a subscription paywall](#).

Rather than relying on authors and academic institutions to pay article processing fees, the U.S. government could [set aside a portion of the costs of research grants towards supporting open access journals](#). Such a system could provide each year an upfront subsidy to journals or services that curate the quality of published research. This pool of funding could be apportioned to such journals or curated services based on factors such as the circulation, the value and quality of publicly funded research in its pages, the cost-effectiveness of the dissemination achieved, or other measures. This approach could also provide a platform for philanthropies and other potential sources of research financing to support open access publication.

Just over a decade ago, the Institute of Medicine's report on [*The U.S. Commitment to Global Health: Recommendations for the Public and Private Sectors*](#) called upon the research community to “promote global knowledge networks and the open exchange of information and tools that enable local problem solvers to conduct research to improve the health of their own populations.” Those words seem almost prophetic today, knowing how interconnected and entwined the challenge of global health is across borders.

In the interval, we have made considerable advances in this direction. The Food and Drug Administration Amendments Act (FDAAA) of 2007 requires that NIH-funded clinical trials must disclose clinical trial results in ClinicalTrials.gov within a year of the trial's completion. Major research funders from the Wellcome Trust and the Bill and Melinda Gates Foundation to the Indian Council of Medical Research and the UK Medical Research Council have committed to the principles behind the [WHO Joint Statement on Public Disclosure of Results from Clinical Trials](#). The Johns Hopkins School of Medicine has developed [streamlined clinical trial registration guidelines](#), which could serve as a potential model that both meets FDAAA requirements and goes further in practically implementing the principles in the WHO Joint Statement. Building on such efforts, the U.S. NIH has the opportunity to lead and usher in a global commitment to open clinical trials.

We thank OSTP for its leadership in exploring next steps and encourage you to implement an immediate open access policy for the results of publicly funded research.



May 6, 2020

BY ELECTRONIC SUBMISSION: publicaccess@ostp.eop.gov

Dr. Kelvin K. Droegemeier, Director
Office of Science and Technology Policy
Executive Office of the President
Eisenhower Executive Office Building
1650 Pennsylvania Avenue, NW
Washington, DC 20504

Response to OSTP Request for Information – FR Doc. 2020-06622 – “Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research”

Dear Dr. Droegemeier,

The American Academy of Dermatology (AAD) is grateful for the opportunity to respond to this request for information on public access to peer-reviewed scholarly publications. In particular, we write to caution the Office of Science and Technology Policy (OSTP) against adopting a policy mandating the free distribution of peer-reviewed manuscripts earlier than one year after publication.

Headquartered in Rosemont, Illinois, the AAD, founded in 1938, is the largest, most influential, and most representative of all dermatologic associations. With a membership of more than 20,000 physicians worldwide, the AAD is committed to: advancing the diagnosis and medical, surgical and cosmetic treatment of the skin, hair and nails; advocating high standards in clinical practice, education, and research in dermatology; and supporting and enhancing patient care for a lifetime of healthier skin, hair and nails.

The AAD publishes three scholarly journals – *Journal of the American Academy of Dermatology (JAAD)*, *JAAD Case Reports*, and *JAAD International*. *JAAD* is charged with helping dermatologists to improve patient outcomes and benefits our members by satisfying the educational needs of the dermatology community. As the specialty's leading journal, *JAAD* features original, peer-reviewed articles emphasizing clinical, investigative, and population-based studies; healthcare delivery and quality of care research; high quality, cost effective, and innovative treatments; new diagnostic techniques; and other topics related to the prevention, diagnosis, and treatment of disorders of the skin, hair, and nails. Each issue includes continuing medical education articles designed to fill practice and knowledge gaps in the delivery of dermatologic care. *JAAD* is also the official venue for practice guidelines established by the AAD.

Ultimately, we strive to support the progress of science by producing and broadly disseminating the highest quality peer-reviewed journals possible. Publishers and societies have worked to strengthen scholarly communication and promote open science; and two of the *JAAD* journals, *Case Reports* and *International*, are made freely available via open access. However, it is critical that these efforts take place within a framework that respects intellectual property rights and our ability to invest in high-quality publications and that does not hinder researchers from communicating their discoveries.

Bruce H. Thiers, MD, FAAD
President

Susan C. Taylor, MD, FAAD
Vice President

Marta J. Van Beek, MD, MPH, FAAD
Secretary-Treasurer

Elizabeth K. Usher, MBA
Executive Director & CEO

Kenneth J. Tomedik, MD, FAAD
President-elect

Neal Bhatia, MD, FAAD
Vice President-elect

Daniel D. Bennett, MD, FAAD
Assistant Secretary-Treasurer

The flagship journal, *JAAD*, is a closed journal that relies on paid subscriptions to fund its operations. In any given year, *JAAD* may publish up to 200 articles that are required to become open access. The current, one-year embargo period allows the journal to retain its valuable subscription base while balancing the need to provide open access to this information in a timely fashion. Opening access to such articles without the current embargo period would have a negative impact on the subscription income of the journal and the AAD's ability to fund publication of the scholarly research that benefits the dermatology community.

Our organization is currently deeply engaged in efforts to respond to the COVID-19 pandemic. The AAD has assembled resources including guidance on how to adjust to the outbreak in clinics, legislative and regulatory updates that may impact dermatologists and their practice, information about the business implications of the outbreak, and the latest information on how to use tele dermatology to provide patient care during the outbreak. In addition, *JAAD* has compiled and made freely available to all a COVID-19 collection of nearly 80 (and growing) scientific articles on this topic.

We are concerned that OSTP's significant new regulatory proposal is a distraction from our ongoing efforts to respond to the current crisis and would undermine our stability and undercut our ability to respond to future health crises.

As you are aware, federal agencies currently require that peer-reviewed manuscripts be made freely available online—within one year of publication—if they discuss research funded at least in part by a government grant.¹ This policy represents a significant compromise that balances our shared goals of providing broad access with the need for our organization to recoup the substantial investments we make in the peer-review, editing, publication, distribution, and long-term stewardship of these articles.

This one-year compromise contrasts with the length of a full copyright term of life-of-the-author plus 70 years. Importantly, this compromise reflects Congress' guidance (in the authorizing legislation for the current policy) that the Administration must “take into consideration the role that scientific publishers play in the peer review process in ensuring the integrity of the record of scientific research, including the investments and added value that they make.”²

Reducing or eliminating the current one-year embargo would significantly jeopardize our organization's ability to invest in producing the high-quality peer-reviewed journals that our readers in the dermatology community rely upon. In so doing, such a policy would contravene Congress' clear guidance to take our role and investments into consideration. Furthermore, such a policy would directly result in a reduction in either the quantity or quality (or more likely, both) of peer-reviewed journal articles produced by hundreds of organizations like ours.

This would not only be harmful to the research enterprise, it would also be harmful to our ultimate goal to provide readers with content that advances the breadth and depth of dermatologic expertise by disseminating evidence-based recommendations to improve outcomes for patients, the ultimate beneficiaries of the scholarly journals we produce.

¹These policies were developed pursuant to OSTP's requirement that agencies “shall use a twelve-month post-publication embargo period as a guideline for making research papers publicly available . . .” See OSTP Memorandum on “Increasing Access to the Results of Federally Funded Scientific Research” (Feb. 22, 2013).

² America COMPETES Reauthorization Act of 2010, Section 103(b)(9), *available at*: <https://www.congress.gov/111/plaws/publ358/PLAW-111publ358.pdf>.

Response to OSTP Request for Information – FR Doc. 2020-06622

Federally Funded Research

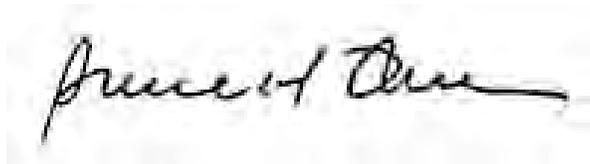
May 6, 2020

Page 3 of 3

We urge you not to disrupt our ability to support the advancement of research and patient care in dermatology, and we look forward to working together to identify solutions that advance the goals of open science without undermining the communication of research findings and analyses through peer-reviewed journals.

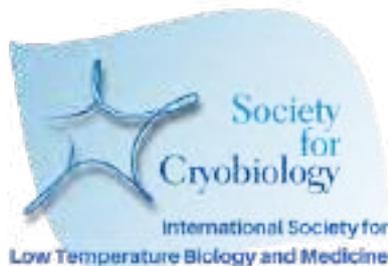
If you have any questions or would like additional information, please contact Lara Graf, Director, Medical Journals Publishing, at lgraf@aad.org or (847) 240-1776. Thank you again for the opportunity to submit these comments.

Sincerely,

A handwritten signature in black ink, appearing to read "Bruce H. Thiers". The signature is written in a cursive style and is positioned above the typed name and title.

Bruce H. Thiers, MD, FAAD
President, American Academy of Dermatology
Editor Emeritus, *JAAD*

CC: Dirk M. Elston, MD, FAAD, Editor, *JAAD*
Elizabeth K. Usher, MBA, Executive Director and CEO



28/04/2020

BY ELECTRONIC SUBMISSION

Dr. Kelvin K. Droegemeier
Director, Office of Science and Technology Policy
Eisenhower Executive Office Building
1650 Pennsylvania Avenue, NW
Washington, DC 20504

Response to OSTP Request for Information – FR Doc. 2020-06622 – “Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research”

Dear Dr. Droegemeier,

The Society for Cryobiology is grateful for the opportunity to respond to this request for information. In particular we write to caution OSTP against adopting a policy mandating the free distribution of peer-reviewed manuscripts earlier than one year after publication.

The Society for Cryobiology has an international membership of scientists working in the fields of cryobiology and cryomedicine. It was founded in 1968 and has an annual general meeting. These meetings are attended by both members and other scientists working in the discipline. It publishes the journal *Cryobiology* bimonthly in partnership with Elsevier. The peer-reviewed papers come from scientists across the world. The society also provides support for research students' and junior researchers' attendance at its annual meeting and through free membership of the society.

The aim of the society and its publications is to promote good practice and the latest research on methodologies in the field of cryobiology, to ensure successful treatments and protocols are applied in all fields which cryo-procedures are practised. These include bio-medical and veterinary applications in cell, tissue and organ cryopreservation, assisted reproduction, and cryosurgery. Cryo protocols are also important in conservation of endangered animal and plant species, and long term cryobanking of biomedical material.

Ultimately, we strive to support the progress of science by producing and broadly disseminating the highest quality peer-reviewed journals possible. Publishers and societies have worked to strengthen scholarly communication and promote open science. However, it is critical that these efforts take place within a framework that respects intellectual property rights and our ability to invest in high-quality publications, and does not hinder researchers from communicating their discoveries.

As you are aware, federal agencies currently require that peer-reviewed manuscripts be made freely available online—within one year of publication—if they discuss research funded at least in part by a government grant.¹ This policy represents a significant compromise that balances our shared goals of providing broad access with the need for our organization to recoup the substantial investments we make in the peer-reviewing and editing of papers, their publication, and distribution of these articles. This one-year compromise contrasts with the length of a full copyright term of life-of-the-author plus 70 years. Importantly, this compromise reflects Congress’ guidance (in the authorizing legislation for the current policy) that the Administration must “take into consideration the role that scientific publishers play in the peer-review process in ensuring the integrity of the record of scientific research, including the investments and added value that they make.”²

Reducing or eliminating the current one-year embargo would significantly jeopardize our organization’s ability to invest in producing the high-quality peer-reviewed journals on which our readers in the cryobiological/cryomedical community rely. In so doing, such a policy would contravene Congress’ clear guidance to take our role and investments into consideration. Furthermore, such a policy would directly result in a reduction in either the quantity or quality (or more likely, both) of peer-reviewed journal articles produced by hundreds of organizations like ours.

This would not only be harmful to the research enterprise, it would also be harmful to the scientific practitioners and the beneficiaries of their professional practice who are ultimately benefiting from the scholarly journal we produce.

We urge you not to disrupt our ability to support the advancement of research in cryobiology/medicine, and we look forward to working together to identify solutions that advance the goals of open science without undermining the communication of research findings and analyses through peer-reviewed journals.

Thank you again for the opportunity to submit these comments.

Yours sincerely,

David Rawson, DSc
Editor-in-Chief
Cryobiology

Nicole Evans
Executive Director
Society for Cryobiology

¹These policies were developed pursuant to OSTP’s requirement that agencies “shall use a twelve-month post-publication embargo period as a guideline for making research papers publicly available . . .” See OSTP Memorandum on “Increasing Access to the Results of Federally Funded Scientific Research” (Feb. 22, 2013).

² America COMPETES Reauthorization Act of 2010, Section 103(b)(9), *available at*: <https://www.congress.gov/111/plaws/publ358/PLAW-111publ358.pdf>.



May 6, 2020

Lisa Nichols
Office of Science and Technology Policy
publicaccess@ostp.eop.gov

Re: RFI Response: Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research

Dear Dr. Nichols:

IEEE, the Institute of Electrical and Electronics Engineers, is the world's largest technical professional organization composed of over 423,000 engineers, scientists, technologists and allied professionals dedicated to advancing technological innovation for the benefit of humanity. With over half of our membership in the United States, we serve society in the electrical, electronic, and computing fields, along with related areas of science and technology.

Founded over 130 years ago by technological pioneers including Thomas Edison and Alexander Graham Bell, IEEE develops, supports, and expands American and global technical communities. We enhance the careers of our U.S. members, advance the state-of-the-art of engineering and technology in the U.S., and lead standardization efforts with deep and long-lasting impacts on U.S. and global industry. IEEE is a driving force in organizing the U.S. technical community to disseminate cutting-edge technical information, improving the lives of all American citizens.

Our volunteers organize thousands of conferences and produce over 200 technical journals that provide forums for engineers and technologists to remain current in their fast-moving fields, network with others, and enhance their professional skills. Our volunteers contribute to their local communities through disaster relief, university accreditation, mentorship programs, student competitions, and local engagement with cities, communities, and states across the country – all coordinated through IEEE.

IEEE members have earned 27 Nobel Prizes. Countless others have made the breakthroughs, created the innovations, and built the companies that define the 21st century and upon which America's prosperity is largely based.

IEEE supports STEM students from kindergarten through graduate school and promotes lifelong learning by all engineers, scientists, and technologists. By raising public awareness of the contributions STEM makes to modern society, we encourage students to consider STEM-oriented education and careers - an essential service to maintain America's pipeline of technical professionals.

This work is sustained by the activities and revenues derived from our publications.

IEEE publications represent the most trusted sources for engineering and technology research in corporations, academia, and government, forming the foundation on which new innovation and discoveries are made by disseminating new theories and findings. These publications are the most

read and reliable channel reporting significant research advances across our diverse scientific fields. For over a century, IEEE publications have promoted mankind's greatest scientific and engineering conquests, bringing technology to humanity.

What are the barriers to and opportunities for change?

IEEE is a strong supporter of Open Science – a movement to make scientific and technical information available broadly to the public. We see our Open Science efforts as well aligned with our charter: to advance technology for the benefit of humanity. We have been advancing open science in a careful and measured manner by aiding the transition for users, maintaining the sustainability of the institute and its constituent parts, and supporting innovation and evolution in research practice. IEEE has already begun addressing many of the challenges of Open Science. Today, IEEE offers over 20 fully open access (OA) journals, while all other IEEE journals are hybrid OA, meaning that they give authors the option to publish in an OA format.

IEEE has made important contributions to research reproducibility, which we have championed through partnerships with U.S. funders including the NSF.¹ Since 2016, we have enabled authors to share access to research artifacts such as code, algorithms, and datasets through services we have integrated with our publications processes. In partnership with commercial providers and via investments in tools we have built ourselves, IEEE has made the Code Ocean and IEEE Dataport tools freely available to our global communities. These services comprise a range of capabilities from simple repository features (including persistent DOIs for artifacts) to full runtime emulation for code and simulations.

In addition, IEEE has adopted best practices in data citation, conforming to the FORCE11 data citation principles². We continue to encourage availability and sharing of research data. With the National Information Standards Organization (NISO), we lead community efforts to encourage and increase recognition for open and reproducible scholarly communication through the development of standards for definition and badging of research outputs.³

To IEEE and similar community-based organizations, an immediate and inflexible requirement that all articles reporting on funded research be made immediately available to the public will itself become a barrier to the desired change. Scholarly societies, including IEEE, play a key role in curating and credentialing research publications, and in building scientific integrity and communal norms among researchers. A requirement for immediate public access to technical articles reporting results from federally funded research with no embargo period will put enormous financial pressure on organizations like IEEE, imperiling our ability to continue to fulfill this vital role. Ironically, efforts to make research results public faster could result in those results being less reliable, diminishing the public's access to good research.

These changes could also do irreparable damage to scientific communities. Such a policy will likely be force the elimination of activities that are crucial to the long-term health of the scientific enterprise, including:

- Accreditation of college programs (ABET)
- STEM education support for K – 12 students and their teachers (TRYEngineering)
- Development of communities for under-represented populations, such as Women in Engineering and Young Professionals

- Launch of new journals and professional conferences in emerging technologies such as machine learning, artificial intelligence, quantum computing, and cybersecurity
- Investments in Open Science like IEEE Dataport, TechRxiv, and Code Ocean
- Projects in support of reproducibility, such badging systems, peer review, and reproducibility of non-article research artifacts
- Support for economically challenged authors to publish in open formats through article-processing charge waivers

As a researcher-led membership association, IEEE is fundamentally in sympathy with and committed to the aims of Open Science. We seek to partner with OSTP and others to achieve the desired policy goals *and* continue to offer these activities through a phased approach to implementation of new models for access to content and data/research artifacts. More aggressive proposals risk the integrity of the research system, and therefore are themselves barriers to a successful change to an open system.

What more can Federal agencies do to make tax-payer funded research results, including peer-reviewed author manuscripts, data, and code funded by the Federal Government, freely and publicly accessible in a way that minimizes delay, maximizes access, and enhances usability? How can the Federal Government engage with other sectors to achieve these goals?

To address this question, we must consider the facts of the current Open Science landscape:

- Peer-reviewed publication of articles is a single part of a complex ecosystem
- Maintaining high quality, community-based selection and publication of important research findings is a time-consuming process which demands ongoing investment
- Reproducibility and reliability of research findings will be improved by greater availability of artifacts such as data, code, and algorithms associated with the published articles
- Technical challenges exist around the curation, classification, discovery, and preservation of those artifacts; solving them will be a community effort
- Behavior and incentives applying to individual researchers, institutions, and funders are necessary for achieving OSTP's stated aims

IEEE has made progress in all the above categories, but suggests that greater support and partnership with both OSTP and funding agencies can accelerate that progress. Change on the scale envisioned will happen fastest if embraced by multiple constituencies, including researchers, agencies, and publishers, not just the federal government. In its role as a global publishing organization, IEEE has played founding or leadership roles in the establishment of key infrastructure providers such as Crossref⁴ and CHORUS⁵, which seek to simplify and enable underlying linking, metadata, and grant-compliance functions for authors, readers, and research institutions. In addition to our contributions to the scholarly communication community via these organizations, we are a member of the STM Association, which in 2020 is promoting the STM Research Data Year.⁶

From our experience with the above organizations and the dynamics of the scholarly communications community, we see the following cross-sector opportunities:

- Defining standards and enabling tools/technology for stakeholders to adopt will be important and can be achieved through organizations such as those named above ✓

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- Providing incentives to researchers and their institutions to encourage desired behaviors (e.g., making additional artifacts available in addition to article publication) is an important complement to policy that such organizations can facilitate
- Achieving consensus and commitment to progress could take place via an engagement process similar to the Scholarly Publishing Roundtable approach that led to the creation of CHORUS and subsequent widespread facilitation by publishers of OSTP's 2013 policy.⁷

All of these opportunities will require collaborative efforts from all stakeholders to permit the research community to successfully navigate these dramatic changes.

We believe OSTP could facilitate public access to taxpayer-funded research results by:

- Mandating that U.S.-funded researchers post pre-peer reviewed versions of their articles on institutional repositories or preprint servers such as arXiv, TechRxiv, or engrXiv, thus making the products of research grants publicly available at the earliest possible date
- Considering extending mandates to datasets and other artifacts, using not-for-profit community-developed tools such as IEEE Dataport, Zenodo, and Dryad
- Piloting studies with individual representative communities to ascertain how best to implement future Open Science behaviors or goals
- Enabling organizations like IEEE to develop and test alternative economic models for greater openness (these models will vary for different research fields)

How would American science leadership and American competitiveness benefit from immediate access to these resources?

Benefits of immediate access will not be limited to American business or researchers but will flow to all of American society. However, there is a possible unintended consequence to an approach that damages the scientific ecosystem. IEEE is concerned about the effects of additional government policy on the important role IEEE and other U.S.-based not-for-profit organizations play in organizing and certifying the outputs of funded research. IEEE believes we contribute significantly to the U.S. (as well as the global) scientific community and sets standards for quality in curation and discovery of research through its investments in our people, processes, and technology. Those investments accrue to the benefit of the U.S. economy as well as to the technical communities we support. If we, and organizations like us, are unable to fulfill this role, government actors who do not share U.S. values and interests could insert themselves in the researcher workflow to fill the gap. The benefits will go to others outside the U.S., thus creating an undesirable influence over the certification and publication of U.S.-funded science.

In Conclusion

Today, federal agencies require that peer-reviewed manuscripts reporting the results of research funded by a U.S. government grant be made freely available online within one year of publication. This policy balances our shared goals of providing broad access with the need for substantial investments in activities supporting Open Science and in the peer-review, editing, publication, distribution, and long-term preservation of technical articles. Current policy also reflects Congress' guidance that the Administration consider the role of scientific/technical publishers in ensuring the integrity of the scientific record and the investments they make in adding value for the research community.⁸

Reducing or eliminating the embargo period would significantly jeopardize IEEE's ability to invest in the activities undertaken to create, maintain, and enhance our publications program and to drive forward the principles of Open Science. This would be counterproductive and prevent us from effectively pursuing our mission to advance technological innovation and excellence for the benefit of humanity.

IEEE appreciates the opportunity to engage in this dialogue and looks forward to working with OSTP to identify solutions that advance the goals of open science without risking the integrity of the research system.

Sincerely,



Dawn Melley

Acting Managing Director, IEEE Publications

References

- 1 [Report on the First IEEE Workshop on the Future of Research Curation and Research Reproducibility](#)
- 2 [Joint Declaration of Data Citation Principles - FINAL](#)
- 3 [Taxonomy, Definitions, and Recognition Badging Scheme Working Group](#)
- 4 CrossRef [About us](#)
- 5 <https://www.chorusaccess.org/about/about-chorus/>
- 6 <https://www.stm-assoc.org/standards-technology/2020-stm-research-data-year/>
- 7 <https://www.aau.edu/sites/default/files/AAU%20Files/Key%20Issues/Intellectual%20Property/Scholarly%20Publishing%20Roundtable%20Report%20and%20Recommendations%20-%201-12-10.pdf>
- 8 [America Competes Reauthorization Act of 2010](#)

Background on the IEEE Publications Program

Five million readers from industry, academia, and government visit the IEEE Xplore Digital Library every month to read articles published in over 200 peer-reviewed journals and magazines, and other types of publications. IEEE publications drive innovation and create economic prosperity: U.S. patents filed by the world's 50 top patenting organizations cite IEEE 3 times more than any other scientific/technical publisher. Fields in which IEEE dominates USPTO citations include AI, autonomous vehicles, blockchain, cybersecurity, and virtual and augmented reality.

IEEE Publication output in 2019 (with growth over 2018)		
Conference Articles	+ 4.0%	192,098
Journal Articles	+ 10.8%	57,442*
Magazine Articles	+ 36.6%	2,470
Standards & Book Chapters	(871 + 614)	1,485
TOTAL		253,495

* Over 50,000 articles/year without fees to authors



May 6, 2020

BY ELECTRONIC SUBMISSION

Dr. Kelvin K. Droegemeier
Director, Office of Science and Technology Policy
Eisenhower Executive Office Building
1650 Pennsylvania Avenue, NW
Washington, DC 20504

Response to OSTP Request for Information – FR Doc. 2020-06622 – “Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research”

Dear Dr. Droegemeier,

The International Society for Advancement of Cytometry (ISAC) is grateful for the opportunity to respond to this request for information. In particular, we write to caution OSTP against adopting a policy mandating the free distribution of peer-reviewed manuscripts earlier than one year after publication.

ISAC is a 501(c)3 that supports clinical, industrial and basic research on cellular biology. A focus has been bringing talent together from biological, electronic, and physical sciences to create and utilize a technology we call cytometry. This technology is used clinically in the diagnosis of leukemia, lymphoma and myeloma. They are also used to enumerate CD4 cells in the blood of HIV patients an important parameter in treatment decisions. The technology is used heavily in drug discovery by the pharmaceutical industry, and agriculture it is used to identify milking cattle with mastitis, and to isolate male or female bovine sperm among 100's of other applications. ISAC was founded in 1971 and today has over 2,000 members. We publish two Journals (i) Cytometry and (ii) Clinical Protocols in Cytometry. Both Journals are peer reviewed and provide an excellent place where materials on this and related topics can be published.

Ultimately, we strive to support the progress of science by producing and broadly disseminating the highest quality peer-reviewed journals possible. Publishers and societies have worked to strengthen scholarly communication and promote open science. We have a leadership program which supports 50 young investigators, we maintain a certification program, and we host a database where data files can be shared as a part of the peer review process helping to insure data integrity and reproducibility. However, it is critical that these efforts take place within a framework that respects intellectual property rights and our ability to invest in high-quality publications, and that does not hinder researchers from communicating their discoveries.

Results from flow cytometric assays have recently been shown by several laboratories to predict patients that will have more severe forms of COVID-19 infections. This work has been published with immediate open access in Cytometry and we have supported one webinar with The American Association for the Advancement of Science on this topic and will have another this month through arc

free to all webinar series. We are concerned that OSTP's significant new regulatory proposal is a distraction from our ongoing efforts to respond to the current crisis and would undermine our stability and undercut our ability to respond to future health crises.

As you are aware, federal agencies currently require that peer-reviewed manuscripts be made freely available online—within one year of publication—if they discuss research funded at least in part by a government grant.¹ This policy represents a significant compromise that balances our shared goals of providing broad access with the need for our organization to recoup the substantial investments we make in the peer-review, editing, publication, distribution, and long-term stewardship of these articles. This one-year compromise contrasts with the length of a full copyright term of life-of-the-author plus 70 years. Importantly, this compromise reflects Congress' guidance (in the authorizing legislation for the current policy) that the Administration must "take into consideration the role that scientific publishers play in the peer review process in ensuring the integrity of the record of scientific research, including the investments and added value that they make."²

Reducing or eliminating the current one-year embargo would significantly jeopardize our organization's ability to invest in producing the high-quality peer-reviewed journals that our readers in the cytometry community rely on. In so doing, such a policy would contravene Congress' clear guidance to take our role and investments into consideration. Furthermore, such a policy would directly result in a reduction in either the quantity or quality (or more likely, both) of peer-reviewed journal articles produced by hundreds of organizations like ours.

This would not only be harmful to the research enterprise, it would also be harmful to the broader scientific community as well as the patients and medical professionals who are the ultimate beneficiaries of the scholarly journals we produce.

We urge you not to disrupt our ability to support the advancement of research in cytometry, and we look forward to working together to identify solutions that advance the goals of open science without undermining the communication of research findings and analyses through peer-reviewed journals.

Thank you again for the opportunity to submit these comments.
Sincerely,



Paul K. Wallace, Ph.D.
Past President International Society for Advancement of Cytometry

Professor of Oncology
Director Department of Flow and Image Cytometry
Roswell Park Comprehensive Cancer Center
Elm & Carlton Streets
Buffalo, NY 14263
pkwallace@rpciflow.org

¹These policies were developed pursuant to OSTP's requirement that agencies "shall use a twelve-month post-publication embargo period as a guideline for making research papers publicly available . . ." See OSTP Memorandum on "Increasing Access to the Results of Federally Funded Scientific Research" (Feb. 22, 2013).

² America COMPETES Reauthorization Act of 2010, Section 103(b)(9), available at: <https://www.congress.gov/111/plaws/publ358/PLAW-111publ358.pdf>.



AMERICAN ASTRONOMICAL SOCIETY

6 May 2020

Dr. Lisa Nichols
Office of Science and Technology Policy
1650 Pennsylvania Ave. NW
Washington, DC 20504
publicaccess@ostp.eop.gov

Re: AAS Response to OSTP Request for Information: *Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting from Federally Funded Research*, FR Doc. 2020–03189, 12 February 2020

Dear Dr. Nichols:

We appreciate the opportunity to have met with you on 28 February and to learn of the OSTP's recognition of the critical role of nonprofit society publishers in advancing open access to federally funded research. We look forward to continued dialogue and engagement in this area.

The American Astronomical Society (AAS), established in 1899 and based in Washington, DC, is the major organization of professional astronomers in North America. Its membership of over 8,000 individuals also includes physicists, mathematicians, geologists, engineers, and others whose research and educational interests lie within the broad spectrum of subjects comprising contemporary astronomy, planetary science, and heliophysics. The mission of the AAS is to enhance and share humanity's scientific understanding of the universe.

As a 501(c)(3) the AAS owns, operates, and publishes the most widely read and cited journals in the field: *The Astronomical Journal (AJ)*, *The Astrophysical Journal (ApJ)*, *The Astrophysical Journal Letters*, *The Astrophysical Journal Supplement Series*, and *The Planetary Science Journal*. The *AJ* was established in 1849 and came into AAS ownership 100 years later; the *ApJ* was established in 1895, 100 years before becoming one of the very first scholarly journals online. One of the conditions for taking ownership of the *ApJ* from the University of Chicago in the 1970s included a provision whereby *journal proceeds were not to be used to directly fund the ongoing operations of the society*. This provision persists to this day.

Astronomy and astrophysics research has been very broadly accessible for the past 25 years as a result of the collaboration and peaceful coexistence of the SAO/NASA Astrophysics Data System, the arXiv preprint service, and the leading nonprofit publishers in the field, of which the AAS is the primary one (in terms of volume of published content).¹

¹ <https://adsabs.github.io/blog/nasa-open-access>

The AAS has been successful in providing open access to our journals and keeping that access open without additional licenses and paywalls since creating online editions of our journals starting in 1995. In compliance with the February 2013 OSTP guidelines, all AAS journals' content is made freely available to anyone 12 months after publication, and content from volume 1, number 1 for each title was long ago made freely available via ADS. Only the most recent 12 months of content is held back to retain the value of current subscriptions, while the arXiv provides a form of interim access.

Since 2017 we have offered a Gold Open Access publishing option for authors who want their articles freely available immediately, for which there has been a modest uptake among US-based authors (roughly 7% of all published content). Individual member subscriptions are available at very low cost (\$25 per year), public libraries may subscribe for *free* to the journals, and the subscription price for institutions reflects one of the lowest costs per page available. This long-standing commitment to the broadest possible access has been achieved through a publishing business model adopted by the AAS in the early 20th century and featuring a dual revenue stream. With a combination of subscription licensing fees (currently 35% of total revenue) and author charges (currently 65% of total revenue), the AAS has worked hard to keep the rates on both sides at cost and significantly below the standard for STEM journals. When we achieve cost savings, we pass those reductions along to our community of authors and readers, as stipulated by our leadership, which is composed of researchers in the field.

In keeping with our mission, the AAS journals are both rigorous and comprehensive, enjoying both very high impact factors and relatively high acceptance rates to ensure that our editors and referees work closely with authors to arrive at publishable results.² The AAS also has a long-standing commitment to shared research data, as described in our 16 March 2020 public comment on the OSTP's *DRAFT Desirable Characteristics of Repositories for Managing and Sharing Data Resulting from Federally Funded Research* (Document 2020–00689): "Since creating electronic editions starting in 1995, the AAS has encouraged researchers to submit data critical to their research result *along with their manuscript*. Machine-readable tables (MRT) and data-behind-figures (DbF) are examples of the research data integrated into and hence preserved for posterity in many thousands of research articles published in AAS journals. The AAS has employed trained astrophysicists as data editors and adopted publishing workflows that have helped researchers share their data for the past 20 years. These practices have led to the inclusion of a significant amount research data in the literature. Additionally, the AAS has spearheaded efforts to link to important, related data sets in federally funded data repositories and will continue to develop and deepen these connections."³

² AAS Publications Committee, "Key Challenges for AAS Journals in the Next Decade," Astro 2020 Decadal Survey White Paper, (2019 BAAS 51(7) 026; <https://ui.adsabs.harvard.edu/abs/2019BAAS...51g..26L/abstract>)

³ https://aas.org/sites/default/files/2020-03/AAS-Response-OSTP-data%20repositories_RFC.pdf

Our journals publish much of the very best research in astronomy and astrophysics, including 11.2% of all Nobel Prize-awarded articles in physics.⁴ At the same time, research articles published in our journals have the longest citation half-life.⁵ These statistics provide proof of our long commitment to the broadest possible access to our content.

Our authors have suffered a decline in the success rate in US federal grants in recent years, as well as a decrease in available funding for publication charges within federal awards. This relentless decrease in available research funds would only be exacerbated by a move to zero embargo, fully Gold OA publication. The higher page charges would increase the cost to authors by requiring them to offset the lost subscription revenue. These higher costs would impede access to our US published journals to US authors, while not significantly impacting access to competitive foreign countries who subsidize their publishers (e.g., *Monthly Notices of the Royal Astronomical Society* and *Astronomy & Astrophysics*) or pay publication fees from institutional or governmental resources.

Different scientific disciplines have different, long-standing cultures of scholarship and sharing, and we trust that OSTP will not apply blanket, one-size-fits-all policies that may address perceived problems in one area of science (e.g., biomedical) to the detriment of other areas of science (e.g., physics). We ask the OSTP to consider successful, well-established, dual-revenue-stream business models like the one in place at the AAS as a blueprint for the equitable sharing of publication costs and the advancement of public access.

We look forward to continuing the dialogue about maintaining best practices in the advancement of public access to federally funded research and data — a goal that we can all support.

Sincerely,

A handwritten signature in black ink, appearing to read 'K. B. Marvel', written in a cursive style.

Kevin B. Marvel, PhD
Executive Officer

⁴ *Nature*, “These four journals publish the most Nobel Prize-winning papers in physics,” (<https://www.natureindex.com/news-blog/journals-publish-most-nobel-prize-winning-research-papers-physics>)

⁵ Frank Timmes, “Evolution of the Most Cited Astronomy & Astrophysics Articles and Journals,” (http://cococubed.asu.edu/journal_pages/top50.shtml)



**National Center for Health Research Public Comments on
OSTP's Request for Information: Public Access to Peer-Reviewed Scholarly
Publications, Data and Code Resulting From Federally Funded Research**

The National Center for Health Research (NCHR) is a nonprofit think tank that conducts, analyzes, and scrutinizes research, policies, and programs on a range of issues related to health and safety. We do not accept funding from companies that make products that are the subject of our work.

Our research center has long advocated for making federally funded research publicly available. As a think tank focused on research and data related to human health, we have supported data sharing and other efforts to make research results more freely available, particularly for research that was funded by federal agencies or submitted to federal agencies as part of application materials to the FDA and other federal agencies. Research data and results that are partially or fully funded by or conducted by the federal government should be freely available to the public.

In this comment, we will focus on two issues: 1) Access to peer-reviewed scholarly publications and 2) Access to data for analysis.

Despite efforts to make articles in scholarly publications freely available to the public, most are not. All journal articles based on research funded by the federal government should be freely available to the public, and that should not require the authors to pay thousands of dollars for each article to be available through open access. We understand the financial needs of scholarly publications, but U.S. taxpayers should not be required to pay to read an article based on research that they also paid for. Since journals depend on high quality data to succeed, the government should require that journals have an open access policy for federally funded research results; authors either should not be required to pay anything, or should be offered a greatly discounted rate that the federal government requires the researcher to pay using the research funding that supported the work.

Unfortunately, ClinicalTrials.gov has not fulfilled its goal of making research results publicly available in a transparent and timely fashion. Despite Congressional pressure, too often study results are not reported on the ClinicalTrials.gov website or are greatly delayed, and neither FDA nor NIH has enforced the requirements or penalized those who failed to comply. In addition, results reported on ClinicalTrials.gov are often subjective summaries rather than objective charts and graphs that present the aggregate data. The information most often provided is insufficient for other researchers or medical providers to scrutinize.

In addition, research conducted partially or entirely with federal funds is not always published in a timely manner, or at all. In some cases, the authors have submitted manuscripts that have been rejected by journals; in some cases, there are competing pressures that make it difficult for the researchers to finish writing and submitting manuscripts, and in other cases, the only journals

willing to publish a specific article charge thousands of dollars for publication that the authors can't afford. We strongly urge that PIs of federally funded studies be required to make the raw data available to other U.S. researchers if it hasn't been published within 3 years of completion of the initial study. Such data sharing between researchers is essential for ensuring that federal agencies have not wasted taxpayers' money on research that never becomes available to potentially benefit the public.

Even when federally funded research results are published, the results may be biased or inaccurate. Sharing of raw data after publication is an invaluable tool for confirming the accuracy of reported research findings and enabling other researchers to replicate results and understand any conflicting findings.

U.S. taxpayers deserve to have the government maximize the usefulness of the funds they've invested in research by making that research publically available. Efforts to improve public access to federally funded research will benefit the scientific community, the medical community, public health, and the public.

National Center for Health Research can be reached at info@center4research.org or at (202) 223-4000.



May 6, 2020

IDSAs Response to Office of Science and Technology Policy Request for Information: Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting from Federally Funded Research

The Infectious Diseases Society of America (IDSAs) is a community of over 12,000 physicians, scientists, public health experts and other healthcare professionals who specialize in infectious diseases (ID). Our mission is to improve the health of individuals, communities, and society by promoting excellence in patient care, education, research, public health, and prevention relating to infectious diseases.

Founded in 1963, IDSAs's members represent the diversity and vibrancy of the field. IDSAs members include practicing clinicians who provide direct patient care, scientists and researchers in the academic setting, public health officials, hospital epidemiologists, and ID specialists working in many other settings. IDSAs members work across the United States and in nearly 100 other countries on six different continents around the world.

Exchange of scientific information is effected primarily through the Society's Annual Meeting, IDWeek, held jointly with the Society for Healthcare Epidemiology of America, the HIV Medicine Association, the Pediatric Infectious Diseases Society, and the Society of Infectious Diseases Pharmacists; as well as through IDSAs's three journals: *Clinical Infectious Diseases*, *The Journal of Infectious Diseases*, and *Open Forum Infectious Diseases*. The latter is a fully Open Access journal, the other two journals are hybrid subscription/Open Access journals. *Clinical Infectious Diseases* is one of the most heavily cited journals in the Journal Citation Report category in which it is listed, with citation and usage driven in part by its publishing the IDSAs Clinical Guidelines, which are available free to all globally. Scientific information is also exchanged through [IDSAs's website](#), its online peer-to-peer [discussion community MyIDSAs](#) and its [Emerging Infections Network](#), funded by the CDC, which serves as a mechanism for ID clinicians and the public health community to monitor for emerging infectious diseases by collecting relevant clinically oriented observations that complement other surveillance systems.

Amongst them, the three journals peer review around 7,500 articles annually, and publish over 2,500 articles. Many of these papers have multiple funding sources, as much of the research represents collaborative research conducted across national and international boundaries.

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Given its large investments in editorial peer review (Editor and Associate Editor honoraria, full-time editorial office employees to manage the peer review process), IDSA depends upon the revenues that the subscription/OA based flagship journal generates through our publishing agreement with the non-profit Oxford University Press. The royalty on the sale of subscriptions to institutions and library/national consortia depends upon the current 12-month embargo on published papers (prior to deposit in an Open Access repository). That royalty funds many of IDSA's mission-critical activities that drive the knowledge exchange among members and that keep ID doctors advised of up-to-the-minute developments.

A case in point: IDSA has developed a COVID-19 resource center that is updated daily, see <https://www.idsociety.org/public-health/COVID-19-Resource-Center/> and Oxford University Press has created a collection of more than 300 articles in the IDSA journals on coronavirus, see https://academic.oup.com/idsa/search-results?allJournals=1&fl_SiteID=5567&page=1&qb=%7b%22ArticleTitle1%22%3a%22coronavirus+OR+corona+virus+OR+covid-19%22%7d&sort=Date+%E2%80%93+Newest+First.

The Federal Register Request for Information seeks input on four issues.

1. **Access:** all of the content in *Open Forum Infectious Diseases* is already completely free to anyone in the world with an internet connection. We waive the Article Processing Charges for countries, institutions and authors who cannot afford to pay them. This model has driven wide access in the WHO list of developing nations that depend upon the most up-to-date information in infectious diseases. *Clinical Infectious Diseases* and *The Journal of Infectious Diseases* have doubled the amount of open access content they publish over the last couple of years. The ecosystem of publishing, with the invigorating input of cOAlition S in Europe, the engagement of the Bill and Melinda Gates Foundation and the Wellcome Trust, Oxford's diligent efforts to secure transformative Read & Publish and Publish & Read contracts with institutions, funders, and consortia, has responded in dramatic form to the cry for more public access to scholarly research.

If the U.S. federal agencies had budgets to match those of European (Plan S, JISC) funders who pay the Open Access fees for immediate OA publication, the IDSA subscription/hybrid journals could continue to thrive in this transformed economy for scientific publication. We could continue to support our mission-driven activities that could find – because that's what we do – the treatments and preventive measures for existential threats like COVID-19 – and next year's or the following year's novel pathogen that could emerge anywhere in the world.

2. **Ensuring Public Access:** the public as defined in the 2013 OSTP position of "Increasing Access to the Results of Federally Funded Scientific Research" was targeted to students, clinicians, businesses, entrepreneurs, researchers, technologists, and the general public who support these investments as a means to accelerate knowledge and innovation." In the intervening 7 years, all of these groups have been well served by the development of open access journals, hybrid subscription/OA journals, and society commitments to make content freely available on particularly harrowing public health crises such as the COVID-19 crisis. Editors are encouraged

to make content that has significant public interest freely available online. All of the 71 IDSA Clinical Guidelines, see https://www.idsociety.org/practice-guideline/practice-guidelines/#/name_na_str/ASC/0/+/ are freely available to the public and practitioners. The Guidelines contain the most important and current consensus on antimicrobial stewardship, how to treat diseases caused by specific viruses, bacteria, fungi, HIV/AIDS, and parasites. Each journal deploys extensive social media, with resulting broadcast to policy makers, the press and the interested general public. Much of our content is opaque as far as the general public is concerned – the articles would likely be of little use to the lay public in assessing, for example, the probable future trajectory of COVID-19 vaccine development. The other constituents defined in the 2013 OSTP statement would have access immediately to all content, through subscriptions and open access at their hospital, medical school, academic institution, federal agency (e.g., CDC) or company.

- 3. Current Limitations:** Universal access to subscribed-to content is a limitation. Federal agencies can do more to make tax-payer funded research results freely and publicly accessible with minimum delay by increasing federal agency research budgets to cover increased Open Access Article Processing Charge costs to the research groups that publish in hybrid journals. If the government wants to facilitate the “flipping” of subscription based journals to full open access, it must increase grant funding to include money for open access publishing, presumably in a range of \$3,000 - \$30,000 per grant, depending on the number of potential papers emanating from the research that needs to be published. Additionally, the government should encourage the current funder and state initiatives, typically negotiated through consortia and library contracts, and funded by funder, institutional or state allocations, not necessarily by federal funding, to negotiate “read and publish” and “publish and read” deals with publishers that can enhance funding and speed progress to the public accessibility OSTP wants to see happen. For instance, the Bill and Melinda Gates Foundation is funding significant Open Access publication of their grant-funded research across the spectrum of journals that address infectious diseases, and development of vaccines and therapeutics.

The most serious limitation of the White House’s plan is that it will greatly diminish the ability of professional societies like IDSA to survive and to continue to fund meetings, research grants, prizes and awards to leaders in the field as well as to early career researchers. The activities IDSA funds ensure scientific progress to solve real-world issues like COVID-19 and support the discovery of new treatments to reduce and eventually eliminate the burden of infectious diseases worldwide. We need the sustainable finances from the current business model of our hybrid journals in order to support the mission-driven activities that the Society embraces and has, for decades, supported.

- 4. Impact on American Science Leadership and Competitiveness:** The individuals, corporations, institutions, and funders that drive science innovation in America and globally already have access – through subscriptions and our open access options – to the literature that helps them compete and drive science innovation. We already are there with the journals. Articles in the Open Access journal are freely available from the moment they are accepted – globally; open access articles in *Clinical Infectious Diseases* and *The Journal of Infectious Diseases* are also

freely available when Open Access (23% and 22% respectively). Across the portfolio there were 997 OA articles published in 2019 (40%). In addition, 425 articles were published and made free-to-view in 2019. This translates to 57% of the 2,511 published articles across the journals being free for the user. For content that is behind a paywall, subscriptions and licenses to institutions and consortia make it very widely available around the globe.

Open data is of ongoing concern to our members and authors. Our Instructions for Authors include the following requirements:

Nucleotide and Protein Sequences: If a manuscript reports on any new nucleotide or protein sequences, these must be deposited in a publicly available database at the time of submission. Nucleotide sequences should be deposited in one of the three major collaborative databases: [EMBL](#) , [GenBank](#) , or [DDBJ](#) . New sequences and their accession numbers should be listed at the beginning of the Methods section. Protein sequences should be deposited with UniProt.

Microarray Data: Authors submitting microarray data should comply with the ‘Minimal Information About a Microarray Experiment’ (MIAME) guidelines. Microarray data should also be submitted to [GEO](#) or [ArrayExpress](#) and to provide accession numbers by the time the paper is accepted.

Open Science, we all agree, is a worthy goal that will help drive innovation and competitiveness. We need to take deliberate and thoughtful steps to move toward the ultimate goal, evidenced already by the international scientific collaborations that fuel our drive to transformative scientific experimentation that results in dramatically accelerated public health and medicine.

Recommendation:

We recommend that OSTP move with the pace already established and proven by how science is disseminated and recognize that professional societies like IDSA are major stakeholders in the process. The very existence and sustainability of societies such as IDSA are threatened by these proposed measures at a crucial time when our members are on the front line combating COVID-19 -- and other endemic and pandemic infections such as Ebola and Zika. This is indisputably critical for the advancement of the health of our citizens around the globe.

This is the strongly held view of not only IDSA but of our sister society, Pediatric Infectious Diseases Society, with their journal, also published by Oxford University Press, “Journal of the Pediatric Infectious Diseases Society.”

Response to Request for Information: Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research, 85 FR 9488

John Arnold, Co-Founder
Arnold Ventures

Stuart Buck
Vice President of Research
Arnold Ventures

May 6, 2020

As a private philanthropic funder, we are dedicated to improving the reliability and validity of scientific evidence across fields that inform governmental policy, philanthropic endeavors, and individual decision-making. To further these efforts, our comments will address the federal government's policies as to research funding.

I. Executive Summary

The White House and OSTP should take a bold step forward in promoting the benefits of open science. That is, it should announce a federal-wide policy that: 1) all data must be shared absent a compelling argument for an exemption; 2) all computer code and software written with federal funding must be openly shared; and, 3) all research results must be shared in a preprint or working paper, or else published in an open access version, along with a description of the methods sufficient for anyone else to replicate the work. Back in 2014, Francis Collins and Larry Tabak pointed to “the failure of funding agencies to establish or enforce policies that insist on data access.”¹ It is time to make sure that such policies exist and are enforced.

Moreover, to counteract the usual expectation of research “success,” the White House and OSTP should require federal agencies to explore how to tolerate or even expect research *failure* instead. When federally-funded researchers feel pressure to produce positive findings, they end up both studying more incremental questions (thus decreasing innovation), *and* dressing up their findings to seem more positive (thus harming reproducibility). If the peer review and grant renewal processes were reformed, researchers would be more free to study questions with no guaranteed outcome and to present the results for what they are. This would improve both innovation and reproducibility.

¹ F. S. Collins and L. A. Tabak, “NIH plans to enhance reproducibility,” *Nature* 505 no. 7485 (27 Jan. 2014), available at <https://www.nature.com/news/policy-nih-plans-to-enhance-reproducibility-1.14586>.

II. The Future of Federal Science Policy

A. *Open Sharing of Data, Code, Methods, and Results*

By now, virtually everyone agrees that the open sharing of data, code, methods, and research results is better for scientific reproducibility. Open sharing allows other scientific investigators the opportunity to double-check someone else's analysis or to replicate the work for themselves. Moreover, the original investigators have a heightened incentive to analyze their data rigorously if they foresee that the data could be re-examined by someone else.

Sharing is better for accelerating scientific innovation as well. Sharing data enables other scientists to build upon previous work, and has led to many scientific advances, particularly in genetics where data sharing has been a standard approach for decades. The world's recent experience with COVID-19 research – with the open and rapid sharing of data and results² – only confirms that this is how more of science ought to operate in the normal course.

The White House should take a firm stand on these issues, and not allow federal agencies years upon years to develop a plan that falls short, as does the recently-proposed NIH data-sharing strategy.

Instead, the White House should establish all of the following principles as firm default expectations that *must* happen within one year:

- Each of the federal agencies that funds research must enact and prepare to enforce a default rule that data generated with federal funds *must* be shared.
 - Each agency should immediately work with experts to establish and formalize how and what types of data should be shared within each given field of research.
 - Exceptions should be granted only on a limited case-by-case basis, in accordance with the standards each agency establishes.
 - While privacy and confidentiality are important for human subjects data, neither should those concepts be excessively used as an excuse for refusing to share data. For example, clinical trial data may be subject to the Health Insurance Portability and Accountability Act (HIPAA),³ but clinical trialists should be required to anonymize their data according to HIPAA

² See <https://www.oecd.org/coronavirus/policy-responses/why-open-science-is-critical-to-combating-covid-19/>.

³ For a good discussion of the risks, see M. Mello et al., “Preparing for Responsible Sharing of Clinical Trial Data,” *New England Journal of Medicine* 369 (2013): 1651-1658, at <http://www.nejm.org/doi/full/10.1056/NEJMhle1309073>.

standards, and then share the data under a confidentiality agreement just as multiple pharmaceutical companies have done.⁴

- By default, data should be deposited at a trusted digital repository.⁵ Where a trusted digital repository does not yet exist for a certain field of research, the federal agency in question should develop such a repository within one year, and establish a plan for its sustainability. Deposited data should be locked, so that no one can later delete or modify it in a way that frustrates the data-sharing requirements.
- Data management plans should be publicly available in machine-readable fashion, and all data deposits should receive their own digital identifier, so that the availability of data can be more readily tracked.
- To cover the costs of sharing data, federal agencies should establish a default budgetary requirement that all research grants and contracts dedicate a portion of their resources to support the work of preparing data to be shared at a trusted digital repository, including a line item for the repository itself.
- As for software or code, the White House should similarly establish a firm default expectation of open sharing:
 - When specialized software or code is *itself* developed with federal funding, the federal government should require such software or code to be free and open source, absent a compelling reason (such as national security). For example, if someone uses NIH funding to create a new biostatistics package to handle high-throughput sequencing analyses, that package should be made freely available to the public.
 - When anyone uses software (including non-open software such as MATLAB or Stata) to clean and analyze data, the script(s) should be shared so that anyone else can replicate the analysis. Numerous scholars have been tripped up by coding errors,⁶ and making code available allows independent researchers the chance to discover mistakes.
- All final research results should be made publicly and freely available in a preprint, a working paper, an open access journal, or an open access article published in another journal.

⁴ A. J. Vickers, “Whose data set is it anyway? Sharing raw data from randomized trials,” *Trials* 7 (2006): 15; M. A. Rodwin & J. D. Abramson, “Clinical Trial Data as a Public Good,” *JAMA* 308 (5 Sept. 2012): 871-72.

⁵This might include the NIH’s official list of repositories at https://www.nlm.nih.gov/NIHbmic/nih_data_sharing_repositories.html, as well as others (perhaps including *Nature Scientific Data* at <https://www.nature.com/sdata/policies/repositories>).

⁶ For one prominent example, see G. Miller et al, “A Scientist’s Nightmare: Software Problem Leads to Five Retractions,” *Science* 314 (22 Dec. 2006): 1856-57.

- The White House should not at this time require all journal publications to be open access. Many society journals would not be financially sustainable if required to move to an open access system in the near future, and any such requirement could have detrimental and unintended consequences for other non-funded researchers who are unable to pay open access fees.
- Research results must be published with a full and complete description of the methods and study design, in enough detail for anyone to be able to replicate the research without needing to contact the original author.
 - Federal agencies should immediately support the development of clear and comprehensive reporting standards as to methods, as well as a framework for implementation and adoption, as a way to create collective action across the researcher and publishing communities.
- Willful violations of the above should be potentially subject to clear sanctions, including findings of research misconduct and all available penalties associated therewith.

B. Expecting Null Results

At a recent gathering at the White House jointly sponsored by OSTP and the National Academy of Sciences, guests were asked to discuss whether rigor and replicability would be in tension with scientific creativity, discovery, and innovation. These goals are not in tension, however, and there is even a way to produce a win-win for *both* replicability and creativity: each federal agency should reorient its peer review and grant renewal processes to tolerate or even expect that many research projects will “fail” or produce null results.

Reviews of scientific literature typically find that across all the major research fields, the published results are 70%-90+% positive.⁷ But there are two main ways of achieving almost exclusively positive results: 1) Study safe, marginal, incremental topics where the path forward is clear, and the chance of a positive result is accordingly high; or 2) Skew your research design, data, or analysis so that you essentially rig the chance of getting a positive result.

These methods of getting mostly positive results are either a threat to creativity and exploration, or a threat to reproducibility. A clear expectation that most research projects will fail or produce null results would empower scientists both to take creative risks (rather than studying incremental topics) *and* to avoid p-hacking by telling the full truth about their research (however messy or null).

What should the proper rate of null results be? In cases where we know the full body of studies that were done on a given issue, it's typical for up to 90% of them to have null results. For example, out of 90 education interventions evaluated by federally-

⁷ See, e.g., D. Fanelli, “‘Positive’ Results Increase Down the Hierarchy of Sciences,” *PLoS ONE* (April 7, 2010), at <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0010068>.

funded RCTs, only about 10% had positive results.⁸ At the other end of the spectrum, consider Phase III clinical trials (the final stage before FDA approval), where a comprehensive paper shows that about 59% of Phase III trials succeed.⁹ Thus, roughly 40% is probably a lower bound on the true rate of null results.¹⁰

Going forward, when reviewing proposals for grants or contracts, each agency should take proactive steps to move the peer review process away from an expectation of showing prior results that essentially guarantee future success. Future success cannot be guaranteed without studying incremental topics and possibly p-hacking as well.

⁸ See <http://coalition4evidence.org/wp-content/uploads/2013/06/IES-Commissioned-RCTs-positive-vs-weak-or-null-findings-7-2013.pdf>.

⁹ See C. H. Wong, K. W. Siah, & A. W. Lo, “Estimation of clinical trial success rates and related parameters,” *Biostatistics* 20 no. 2 (April 2019): 273-286.

¹⁰ After all, by the time of a Phase III trial, the pharmaceutical company has typically spent several years and upwards of a billion dollars on lab tests, extensive animal testing, and Phase I and II trials in humans. Even here, though, 41% of studies fail. In almost all other areas of research, no one will have spent many years and billions of dollars trying to guarantee that the effect in question will be replicable.



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May 6, 2020

Dr. Lisa Nichols
Assistant Director for Academic Engagement
Office of Science and Technology Policy
publicaccess@ostp.eop.gov

RFI Response: Public Access

Dear Dr. Nichols,

Thank you for the opportunity to submit comments regarding public access to scientific literature. We appreciate the very inclusive process that OSTP has taken to solicit feedback from the community and for the deadline extension.

These comments are from the perspective of the Federation of Associations in Behavioral and Brain Sciences (FABBS). Our federation represents 26 scientific societies and nearly 70 university departments whose scientific members and faculty share a commitment to advancing knowledge in the sciences of mind, brain, and behavior. Understanding the human element of our most pressing challenges through research in these sciences has the potential to improve the health and education of all citizens.

FABBS members are committed to the concept of open science. Societies in our field have been among the first to act on the 2013 memo *Increasing Access to the Results of Federally Funded Scientific Research*, making articles publicly available after a 12-month embargo period. Several of our societies have already established, or are actively in the process of establishing, open access journals, using various models. **Nonetheless, without a greater understanding of the specifics of a new model for disseminating research results, our societies have significant concerns about sudden enactment of a blanket rule. We encourage focused study of the likely consequences of any change, and cost-benefit analyses of competing models.**

What current limitations exist to the effective communication of research outputs and how might communication evolve to accelerate public access while advancing the quality of scientific research? What are the barriers to and opportunities for change?

The biggest barrier to change is the absence of a viable alternative model. The current publishing model has significant limitations, including the difficulty many scholars and the public have in reading research behind a pay wall and the burden



on university library budgets of costly subscription packages. However, it is a central component of the larger scientific enterprise as configured at present, and any changes need to anticipate and plan for inevitable consequences.

First, FABBS members have significant concerns about proposals that require scientists having to pay to publish. A ‘pay-to-play’ or article processing charge (APC) model would introduce barriers to submission for many early career scholars and scientists with limited extramural resources. Such a model would work directly at odds with what is widely agreed to be critical to the advancement of all scientific fields. Furthermore, pay-to-play models feed a rise in predatory journals, with a resulting torrent of emails that make it harder for legitimate journals to function. We also worry about a link (perceived or, in many cases, deserved) between pay-to-play and the reduction or elimination of peer review. This can undermine the quality of the scientific literature. We note that changes in the publishing model will require a commensurate transformation of how universities consider publications in unknown journals for promotion and tenure reviews.

Second, and crucially for FABBS member societies, scientific societies play a central role providing the infrastructure to ensure rigorous review, curation, publication, dissemination, and archiving of academic articles. Societies rely on income from journals to provide these critical services to advance their fields of study. Scientific societies establish standards, host affordable conferences, fund student awards, and provide professional development and mentoring opportunities. For these reasons, any changes to the current publishing model must consider implications for scientific societies - the backbones of scientific disciplines.

There are many options to consider, including various forms of ‘free’ publication (e.g., preprint servers). However, while these servers may fill a useful role, they also run the risk of undermining peer review. These potential consequences are not reasons to avoid change, but they must be reckoned with as part of the process of change.

Please call upon FABBS as a resource as you continue to consider possible options for increasing access while maintaining rigor, increasing equity among scientists, and preserving scientific societies.

Many thanks for your consideration,

Juliane Baron, Executive Director



AAP Headquarters

345 Park Blvd
Itasca, IL 60143
Phone: 630/626-6000
Fax: 847/434-8000
www.aap.org

Reply to

AAP Washington Office

601 13th St NW, Suite 400N
Washington, DC 20005
Phone: 202/347-8600
E-mail: kidsist@aap.org

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April 28, 2020

BY ELECTRONIC SUBMISSION

Dr. Kelvin K. Droegemeier
Director, Office of Science and Technology Policy
Eisenhower Executive Office Building
1650 Pennsylvania Avenue, NW
Washington, DC 20504

Response to OSTP Request for Information – FR Doc. 2020-06622 – “Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research”

Dear Dr. Droegemeier,

The American Academy of Pediatrics (AAP) is pleased to respond to this request for information. We write to caution OSTP against adopting a policy mandating zero embargos of peer-reviewed manuscripts less than 12 months after publication as it will jeopardize the Academy's ability to invest in producing quality journals.

The American Academy of Pediatrics mission is to attain optimal physical, mental, and social health and well-being for all infants, children, adolescents and young adults for 90 years. The AAP is a professional membership organization of 67,000 primary care pediatricians, pediatric medical sub-specialists, pediatric surgical specialists and other pediatric health care professionals. The AAP is also the leading publisher of professional, research and clinical resources for pediatricians and child health professionals around the world. The AAP publishes 5 scholarly journals: *Pediatrics* (flagship research journal), *Hospital Pediatrics*, *Pediatrics in Review*, *NeoReviews*, and *AAP Grand Rounds*.

Our goal is to support the progress of science by disseminating the highest quality peer-reviewed journals possible and ultimately promote open science that does not prevent researchers from communicating their research findings. We do have agreements with the National Institutes of Health (NIH) to promote open access after 12 months, including transparent open access policies for our research journals.

The recommended policy by OSTP significantly compromises the careful balances we have achieved between our shared goals of providing broad access to research papers and with the need for our organization to recoup the substantial investments we make in the production, printing, distribution and product development of our journals that our readers in pediatrics rely on.

We encourage you not to disrupt our ability to support the advancement of research and patient care in the field of pediatrics, and we look forward to working together to identify

April 28, 2020

solutions that advance the goals of open science without undermining the communication of research findings in our peer-reviewed journals.

Thank you for your time, consideration and attention.

Sincerely,

A handwritten signature in black ink that reads "Mark Del Monte". The signature is written in a cursive style with a large, stylized 'M' and 'D'.

Mark Del Monte, JD
CEO/Executive Vice President

Submitted by:
Joe Puskarz, Director of Journals
American Academy of Pediatrics
jpuskarz@aap.org

May 6, 2020

Dr. Kelvin K. Droegemeier
Director, Office of Science and Technology Policy
Eisenhower Executive Office Building
1650 Pennsylvania Avenue, NW
Washington, DC 20504

Response to OSTP Request for Information – FR Doc. 2020-06622 – “Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research”

Dear Dr. Droegemeier,

The American Society of Association Executives (ASAE) is grateful for the opportunity to respond to this request for information. ASAE is the largest organization in the nation representing the interests of trade and professional associations. In particular, we write to caution the Office of Science and Technology Policy (OSTP) against adopting a policy mandating the free distribution of peer-reviewed manuscripts earlier than one year after publication.

A potential policy by OSTP would force the immediate free publication of peer-reviewed journal articles, eliminating the right of journals to charge for access to those articles to recoup the investments made in peer review, curation and conducting quality control. Many associations are accommodating the 2013 OSTP policy mandating that research created with public funds be made available within a 12-month period. A modification to this policy that doesn't consider the impact it would have on researchers and scientific associations would significantly injure the viability of peer-reviewed journals in the future. This change would deprive journals of revenue that makes peer review of scientific research results and publication of those results possible. As a result, the proposed policy change would disrupt the private marketplace, increase the cost of publication for researchers and prevent billions of dollars of U.S. exports that are based on this country's leadership in scientific and technological advances. Net revenue from these journals not only supports the peer review process, but also many other vital association activities including education, outreach and membership services provided through societies and associations.

Founded in 1920, ASAE represents more than 46,000 association professionals and industry partners. Our members manage leading trade associations, individual membership societies and voluntary organizations across the United States and in nearly 50 countries around the world. ASAE members are on the forefront of scientific innovation in the United States and abroad and serve a critical role making the U.S. smarter and safer. Further, ASAE members are on the forefront of our nation's response to the COVID-19 pandemic. From aiding front-line medical professionals to supporting the work of scientists to determine treatments, associations are moving American forward. OSTP's significant new regulatory proposal may distract associations from their ongoing efforts to respond to the current crisis and would undermine our stability and undercut our ability to respond to future health crises.

Associations from every discipline make a significant financial investment to support peer review and publication of these articles. Many journals permit at no additional charge members of the relevant professional society to have instant access to the scientific articles, thus ensuring that fellow researchers do have immediate access to findings of federally funded research, but journals rely on the revenues from subscriptions from institutions and non-members to continue operating. The 12-month embargo period is critical to providing the financial stability for societies to manage the peer review process to ensure high quality and reliable scientific publications. A change of this nature would be devastating to the development and dissemination of scientific and technical information as it could endanger the sustainability of many journals, closing off respected avenues for scientists who receive federal funding to share the results of their research with other members of the profession and the public. Rather than speeding and strengthening the flow of scientific knowledge, the proposed change would instead reduce the publications available to disseminate that research, and would impair the quality of research findings by closing doors to the peer review process. The effects of the resulting drought in peer-reviewed research findings would reach far beyond academic and research institutions and stifle technological and entrepreneurial innovation. I strongly urge the administration to reconsider making changes to this proposed policy.

Thank you again for the opportunity to submit these comments. I strongly urge the administration to reconsider making changes to this proposed policy. If ASAE can be of assistance, please contact Mary Kate Cunningham, Vice President of Public Policy, at mcunningham@asaecenter.org or 202.626.2787.

Sincerely,



Susan Robertson, CAE
President and CEO

May 6, 2020

BY ELECTRONIC SUBMISSION

Dr. Kelvin K. Droegemeier
Director, Office of Science and Technology Policy
Eisenhower Executive Office Building
1650 Pennsylvania Avenue, NW
Washington, DC 20504

Response to OSTP Request for Information – FR Doc. 2020-06622 – “Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research”

Dear Dr. Droegemeier,

The American Association for Cancer Research (AACR) is grateful for the opportunity to respond to this request for information. In particular, we write to caution OSTP against adopting a policy mandating the free distribution of peer-reviewed manuscripts earlier than one year after publication.

Founded in 1907, the AACR is the first and largest cancer research organization dedicated to accelerating the conquest of cancer. Our more than 47,000 members include laboratory and clinical researchers, physicians, and other healthcare professionals, and patient advocates. Through our programs and services, we foster research, training, and education in cancer research and related sciences. Our nine journals, which cover the entire spectrum of basic and clinical cancer research, as well as cancer epidemiology and prevention, strive to support the progress of cancer science and medicine by producing and broadly disseminating the highest quality peer-reviewed journals possible.

Publishers and societies have worked to strengthen scholarly communication and to promote open science. However, it is critical that these efforts take place within a framework that respects intellectual property rights and our ability to invest in high-quality publications, and that does not hinder researchers from communicating their discoveries.

Promoting innovation through the dissemination of new cancer research findings is at the core of the AACR mission, and rapid communication of the latest developments in science and medicine is now more important than ever. Our recent Virtual Annual Meeting, which was free to all registrants, brought together over 61,000 researchers and other individuals from 140 countries. It included a late-breaking “COVID-19 and Cancer” session that drew enormous attention and featured the announcement of a COVID-19 and Cancer Task Force that will determine ongoing science and policy initiatives moving forward. We are also making any journal article

advancing our understanding of COVID-19 freely available to the public immediately upon publication and are collecting all such articles on a single landing page for easy access. We are concerned that OSTP's significant new regulatory proposal is a distraction from our ongoing efforts to respond to the current crisis and would undermine our stability and undercut our ability to respond to future health crises.

As you are aware, federal agencies currently require that peer-reviewed manuscripts be made freely available online—within one year of publication—if they discuss research funded at least in part by a government grant.¹ This policy represents a significant compromise that balances our shared goals of providing broad access with the need for our organization to recoup the substantial investments we make in the peer-review, editing, publication, distribution, and long-term stewardship of these articles. This one-year compromise contrasts with the length of a full copyright term of life-of-the-author plus 70 years. Importantly, this compromise reflects Congress' guidance (in the authorizing legislation for the current policy) that the Administration must “take into consideration the role that scientific publishers play in the peer review process in ensuring the integrity of the record of scientific research, including the investments and added value that they make.”²

Reducing or eliminating the current one-year embargo would significantly jeopardize our organization's ability to invest in producing the high-quality peer-reviewed journals on which our readers in the cancer research community rely. In so doing, such a policy would contravene Congress' clear guidance to take our role and investments into consideration. Furthermore, such a policy would directly result in a reduction in either the quantity or quality (or more likely, both) of peer-reviewed journal articles produced by hundreds of organizations like ours.

This would not only be harmful to the research enterprise, but it would also be harmful to the many cancer patients throughout the world who continue to benefit from the progress made by cancer researchers every day. (For our most recent *Cancer Progress Report*, please visit <https://www.cancerprogressreport.org/Pages/cpr19-contents.aspx>.) It is these patients who are the ultimate beneficiaries of the scholarly journals we produce.

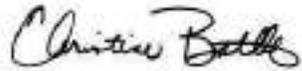
We urge you not to disrupt our ability to support the advancement of cancer research, and we look forward to working together to identify solutions that advance the goals of open science without undermining the communication of research findings and analyses through peer-reviewed journals.

Thank you again for the opportunity to submit these comments.

¹These policies were developed pursuant to OSTP's requirement that agencies “shall use a twelve-month post-publication embargo period as a guideline for making research papers publicly available . . .” See OSTP Memorandum on “Increasing Access to the Results of Federally Funded Scientific Research” (Feb. 22, 2013).

² America COMPETES Reauthorization Act of 2010, Section 103(b)(9), *available at*: <https://www.congress.gov/111/plaws/publ358/PLAW-111publ358.pdf>.

Sincerely,



Christine Battle

PUBLISHER
VICE PRESIDENT, SCIENTIFIC PUBLICATIONS
Publishing Division



American Association for Cancer Research
615 Chestnut Street, 17th Floor | Philadelphia, PA 19106-4404
215-446-7169 Direct | 267-825-9619 Fax | 610-675-7789 Cell
christine.battle@aacr.org | www.AACR.org



Journal of Orthopaedic & Sports Physical Therapy

May 6, 2020

BY ELECTRONIC SUBMISSION

Dr. Kelvin K. Droegemeier
Director, Office of Science and Technology Policy
Eisenhower Executive Office Building
1650 Pennsylvania Avenue, NW
Washington, DC 20504

Response to OSTP Request for Information – FR Doc. 2020-06622 – “Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research”

Dear Dr Droegemeier,

The *Journal of Orthopaedic & Sports Physical Therapy* is grateful for the opportunity to respond to this request for information. We write to caution OSTP against adopting a policy mandating the free distribution of peer-reviewed manuscripts earlier than 1 year after publication.

The *Journal of Orthopaedic & Sports Physical Therapy*[®] (*JOSPT*) was first published in the summer of 1979 by the Orthopaedic and Sports Medicine Sections of the American Physical Therapy Association (APTA). Initially published as a quarterly journal, *JOSPT* content is now delivered monthly in print and continuously online to APTA Academy members (23,000) as well as to nearly 11,000 additional subscribers located in the United States and more than 60 countries around the world. *JOSPT* is incorporated as a nonprofit organization, separate from the APTA. *JOSPT*'s current mission, affirmed by *JOSPT*'s Board of Directors in January 2019, is to "publish scientifically rigorous content and promote its application to movement-related health."

Ultimately, we strive to support the progress of science by producing and broadly disseminating the highest-quality peer-reviewed journal possible. Publishers and societies have worked to strengthen scholarly communication and promote open science. We currently comply with the 1-year embargo period for federally funded research and offer other content for free immediate access, such as our Perspectives for Patients series to enhance patient care. All our content that is 3 years old and older is available for free on our website (www.jospt.org), dating back to the inaugural issue in 1979. We have sought to strike a balance between financial sustainability and commitment to our nonprofit values; research in the physical therapy field moves

relatively slowly, so content from 10 years ago is often still highly relevant to clinicians and researchers today.

We also offer a Read for Credit program where users read an article that we make freely available and then take an exam that, if they pass, enables them to earn continuing education credits toward their state physical therapy licensure requirements. We provide at least one such Read for Credit article every month. In addition, we will shortly launch a new journal, *JOSPT Cases*, that will follow policies of openness like those of our flagship journal, *JOSPT*. However, it is critical that these efforts take place within a framework that respects intellectual property rights and our ability to invest in high-quality publications and that does not hinder researchers from communicating their discoveries.

As you are aware, federal agencies currently require that peer-reviewed manuscripts be made freely available online—within 1 year of publication—if they discuss research funded at least in part by a government grant.¹ This policy represents a significant compromise that balances our shared goals of providing broad access with the need for our organization to recoup the substantial investments we make in the peer review, editing, publication, distribution, marketing, visibility, and long-term stewardship of these articles. Importantly, this compromise reflects Congress’ guidance (in the authorizing legislation for the current policy) that the Administration must “take into consideration the role that scientific publishers play in the peer review process in ensuring the integrity of the record of scientific research, including the investments and added value that they make.”²

Reducing or eliminating the current 1-year embargo would significantly jeopardize our organization’s ability to invest in producing the high-quality peer-reviewed journal that our readers in the physical therapy community rely on. In so doing, such a policy would contravene Congress’ clear guidance to take our role and investments into consideration. Furthermore, such a policy would directly result in a reduction in either the quantity or quality (or, more likely, both) of peer-reviewed journal articles produced by hundreds of organizations like ours.

¹These policies were developed pursuant to OSTP’s requirement that agencies “shall use a twelve-month post-publication embargo period as a guideline for making research papers publicly available . . .” See OSTP Memorandum on “Increasing Access to the Results of Federally Funded Scientific Research” (Feb. 22, 2013).

² America COMPETES Reauthorization Act of 2010, Section 103(b)(9), available at: <https://www.congress.gov/111/plaws/publ358/PLAW-111publ358.pdf>.

This would not only be harmful to the research enterprise, but would also be harmful to the clinicians, researchers, students, and patients who are the ultimate beneficiaries of the scholarly journal we produce.

We urge you not to disrupt our ability to support the advancement of research and patient care in the physical therapy community, and we look forward to working together to identify solutions that advance the goals of open science without undermining the communication of research findings and analyses through peer-reviewed journals.

Thank you again for the opportunity to submit these comments.

Sincerely,

Corey Parker
Copyright and Permissions
JOSPT



**SEG comment on Office of Science and Technology Policy Request for Information:
Public Access to Peer-Reviewed Scholarly Publications, Data and Code
Resulting from Federally Funded Research**

6 May 2020

To: Lisa Nichols, Assistant Director for Academic Engagement, OSTP

Dear Dr. Nichols:

The Society of Exploration Geophysicists, a 501(c)(6) not-for-profit organization dedicated to advancing all aspects of applied geophysics, appreciates the opportunity to share its perspective on approaches for ensuring broad public access to peer-reviewed scholarly publications, data, and code that result from federally funded scientific research.

SEG demonstrates its commitment to open science through initiatives that include public-access mandate compliance through CHORUS; open-access options for authors in all journals and the society's annual-meeting papers; a policy that encourages data and code sharing; robust ethical guidelines for publications; a double-blind review system to minimize bias in peer review for the journal *Geophysics*; Crossmark for funding-source and version-of-record identification; a liberal green open-access policy; support for authors who wish to place under-review manuscripts on major physics and geoscience preprint servers; and an open wiki that includes an applied-geophysics encyclopedic dictionary with many terms and definitions translated into languages other than English. Although SEG's journals all are hybrid open access, the society is one of seven nonprofit publishers participating in the newly relaunched fully gold open-access journal *Lithosphere*, operated by GeoScienceWorld. Researchers seeking or requiring a Plan S-compliant publications outlet for their work can avail themselves of initial peer review through SEG's own journals (including *Interpretation*, operated in partnership with the American Association of Petroleum Geologists) in advance of submission to *Lithosphere* for further publication consideration.

While perpetually exploring opportunities to expand access and further accelerate innovation in applied geophysics, SEG is committed to high quality in content and communication channels and is bound by need to deliver these in a sustainable way. The foundation of our globally active society's publications business model is hybrid open-access operations for its journals, with considerably more reliance on subscriptions than author fees (discounted for members). SEG investments in the society's publications infrastructure include our having built CHORUS-compliant operations into the SEG Library, in response to the OSTP memorandum of 2013 and ensuring federal agency mandates.

Our primary recommendation, in response to Document 85 FR 9488, the RFI, is that, before taking any action, the OSTP conduct a thorough analysis of what impact mandating immediate public access to articles reporting on federally funded research would have on publishers, especially independent STM publishers such as SEG. Publishers, whether operating gold or hybrid open-access journals or fully subscription-funded journals, could see their investments in open-science initiatives and high-quality science communication undermined. The results could include new barriers to effective communication of research outputs and, by extension, new challenges to American science leadership and competitiveness.

We also urge the OSTP to closely evaluate the current state of open data and source code publication in applied geoscience, particularly in light of federal funding assessment practices. While SEG has endorsed and encouraged adoption of FAIR Data Principles, we have not observed widespread adoption in our author communities. This may be related to the lack of incentives for researchers to invest in the support needed to ensure that data and code outputs are prepared, deposited into FAIR-aligned repositories, maintained, and cited appropriately. Ideally, any mandate to increase public access to data and software would be bolstered by evaluation practices that credit researchers for including provenance and availability details in their article submissions. As publisher, SEG can ensure that diverse scholarly objects are reviewed and disseminated properly only if researchers receive both funding and recognition for such production activities at the outset.

SEG would welcome the opportunity to participate further in discussions with OSTP and other publishers on this matter because, although concerned about the potential negative impact of a change to the current 12-month public-access embargo, our society shares the goal of accelerating scientific discovery and innovation and is eager to join with others in exploring new opportunities to better achieve it.

Sincerely,

SEG Publications Committee
Sergey Fomel, chair
sergey.fomel@beg.utexas.edu

Contact (submitter):

Ted Bakamjian, SEG Associate Executive Director, Publications and Communities
tbakamjian@seg.org

Related articles

Bakamjian, T., 2019, Open access and open science progression, *Interpretation*, **7**, no. 3, 1A–3A.
<https://doi.org/10.1190/INT-2019-0729-FE.1>

Bakamjian, T., 2020, Executive Perspectives: SEG's new journal, *The Leading Edge*, **39**, 80–80.
<https://doi.org/10.1190/tle39020080.1>

Related resources

SEG Library

<https://library.seg.org>

SEG participation in *Lithosphere*

<https://library.seg.org/page/lithosphere>

SEG Wiki

<https://wiki.seg.org>

Related SEG policies

Open-access publishing

<https://library.seg.org/page/policies/open-access>

Permissions

<https://library.seg.org/page/policies/permissions>

Data policy

<https://library.seg.org/page/policies/data-policy>

Preprint policy

<https://library.seg.org/page/policies/preprints>

Crossmark policy

<https://library.seg.org/page/crossmark>

May 6, 2020

ADA Response to OSTP RFI on Open Access Publication

On behalf of the American Dental Association (ADA) and our 163,000+ members nationwide, we appreciate the opportunity to comment on the Request for Information: Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research. The ADA publishes *The Journal of the American Dental Association* with the primary goal of advancing clinical practice and is supportive of open access publishing models and open science. Revenues that are generated from the journal are used to offset operational costs associated with producing quality peer reviewed content. The ADA supports the current 12-month embargo period and asks that the Office of Science and Technology Policy (OSTP) maintain it. We believe that the proposed change to publishing federally funded research is not needed to effectively promote scientific advancement and are concerned that such a change would negatively impact researchers and publishers.

- What current limitations exist to the effective communication of research outputs (publications, data, and code) and how might communications evolve to accelerate public access while advancing the quality of scientific research? What are the barriers to and opportunities for change?

The current policy requires associations that publish scientific and technical journals to make publicly funded research openly available within one year of publication. Association journals permit members of their professional society to gain immediate access to articles that will advance their research and/or clinical activities. Subscription fees support the infrastructure to perform peer review and so ensures quality control of published articles. Many society journals also have mechanisms to allow articles to be immediately available at the authors' discretion. Authors pay article-processing costs (APCs) in order to make their articles open. Subscription revenues subsidize APCs, and many associations report that APCs would be prohibitive if they were to lose subscription revenue. In addition, net revenue from subscription fees supports other vital association activities including professional and public education programs, research support, and outreach efforts.

There are actually few limitations in the current system to effective communication of research outputs. The existing model of peer review and publication allows high-quality and significant research findings to be curated and placed in front of the audience of scientists and clinicians most likely to advance the research and carry it into applied practice, through clinical advances and technological innovations.

Society journals do this particularly well, aggregating not only research papers in each issue of the journal, but the appropriate audience for it, through society membership, bringing about a very efficient transfer of information from researchers and clinicians to their peers.

May 6, 2020

Occasionally, a research paper rises to the level of general importance—having a potential impact on the general public welfare that extends beyond a publication’s subscriber base. Such papers may describe clinical guidelines, profoundly positive results for a new treatment paradigm, or an effective protocol to stop the transmission of an ongoing global viral outbreak, for example. These papers in particular should be made immediately available and open to all scientists, clinicians, and the public in general. Most journals currently provide a mechanism for authors to exercise their discretion to pay author fees and open an article, but the suggestion to open an article could be extended to include recommendations from the peer reviewers or the journal editor as part of the peer-review process.

Funding just the subset of articles that rise to the level of general public importance could preserve hybrid models of publication, in which subscription fees subsidize author fees, making author fees affordable, saving taxpayer money, and preserving the infrastructure for peer review of the current system.

The current COVID-19 crisis illustrates this point. Association and commercial publishers immediately and voluntarily made articles relevant to the pandemic freely and publicly available, without any federal mandate to do so. Continuing this practice for all articles going forward would negatively impact the research and publishing ecosystems.

Furthermore, association publishers marshaled their communities of peer reviewers with expertise in virology, public health, and epidemiology to assess incoming articles, and in so doing ensured that articles reaching the public reflect the highest quality, most reliable information available. This cannot be understated. Scholarly publishers’ systems of vetting technical information becomes crucially important in such a crisis. Scholarly publishers provide a foil against the release of unfounded, anecdotal, and out-right fraudulent information to a credulous public.

- What more can Federal agencies do to make tax-payer funded research results, including peer-reviewed author manuscripts, data, and code funded by the Federal Government, freely and publicly accessible in a way that minimizes delay, maximizes access, and enhances usability? How can the Federal Government engage with other sectors to achieve these goals?

Federal agencies could subsidize the open publication of research outputs with the potential for immediate public benefit, while maintaining the current 12-month embargo period for most federally funded research papers.

- How would American science leadership and American competitiveness benefit from immediate access to these resources? What are potential challenges and effective approaches for overcoming them? Analyses that weigh the trade-offs of different approaches and models, especially those that provide data, will be particularly helpful.

It is important to consider the inefficiencies that might come about if all research were published in an open-access model. Imagine that any public posting of a research paper could, under this system, be considered a “publication.” Papers could be published on journal websites, in public repositories (for example PubMed), on article servers, university servers, or on individual researcher’s websites. As a result, the number of sites containing research information relevant to a particular audience will increase dramatically, requiring investigators to scan scores of websites rather than review a few topical journals to stay current within their fields. In such a system, important research results may become less discoverable and less

May 6, 2020

visible to their communities. Transmission of key research results may become less, rather than more, efficient, obscuring, rather than promoting, important scientific advances.

Furthermore, the burden to pay for publication falls to the grant recipient, and author fees most likely will come out of grants. Paying author fees will likely be easier for large, well established, well-funded research programs and later-career scientists. But smaller, less well-funded programs, and particularly early-career scientists and investigators in new and emerging disciplines may find author fees onerous. A totally open-access program will favor larger programs and later-career scientists, and early-career scientists may find they have limited funds and therefore limited opportunities to publish their work. This will limit the ability of early-stage and less well-funded scientists to obtain more grants and to advance their research and their careers. Ultimately, an open-access system based on author fees may limit or discourage participation in the scientific enterprise by early-stage researchers and those in new and emerging disciplines.

- Any additional information that might be considered for Federal policies related to public access to peer-reviewed author manuscripts, data, and code resulting from federally supported research.

As has been noted by others, a policy mandating immediate open access publication creates disincentives for publishers to invest in publishing and archiving scientific journal articles, which in turn may diminish the quality of scientific publications in the US, and may prove detrimental to the communities of researchers, scientists, and clinicians informed by these journals.

Thank you for your consideration of these important issues. The ADA looks forward to continuing to work with OSTP. Should you have any questions, please do not hesitate to contact Ms. Michelle Hoffman at (312) 440-2769 and hoffmann@ada.org.

¹ Centers for Disease Control and Prevention, [Infection Control – Dental Settings](#), April 2020.

To: Office of Scientific and Technical Policy,
Lisa Nichols, Assistant Director for Academic Engagement

Email: publicaccess@ostp.eop.gov

From: Paul Royster, Coordinator for Scholarly Communications, &
Sue Gardner, Scholarly Communications Librarian
University of Nebraska-Lincoln

Date: May 6, 2020

Subject: RFI Response: Public Access

These submitted comments reflect the views or opinions of the authors; they do not necessarily represent the position of the university or its libraries.

We are members of the Office of Scholarly Communications of the Libraries at the University of Nebraska–Lincoln (UNL), a land-grant university, founded 1869, with approximately 25,000 students and 1,800 faculty. Last year (2018-19) UNL received \$530,551,594 from federal agencies for research, cooperative extension, grants and contracts, and student aid programs. This represented 20.1% of the university budget. The university’s total U.S. Federal research expenditures in 2017 (the latest year reported) were \$101,531,978, slightly over one-third of the total institutional research budget. UNL faculty publish approximately 3,000 peer-reviewed articles annually.

Question 1:

Our library provides access for faculty, students, and the public to extensive published research collections; it spends around \$5 million annually on subscriptions, paid mostly to commercial publishers and scholarly societies. Librarians believe we can get access to almost anything, but when timeliness is a factor, it might take an extra day or two for something not in our current collections. If, on the whole, access is not a big problem for us; sharing of our own

results is. More effective communication of the research outputs originating from this university is limited by copyright and by policies of some commercial and society publishers.

During the Bush Administration, congressional legislation required recipients of federal research funds to make public the full texts of peer-reviewed journal articles within a reasonable period. Under the Obama Administration that period was set at 12 months. These rules forced some publishers for the first time to permit open-to-the-public posting of federal-funded peer-reviewed research. Most commercial and society publishers have supported the rule and have made deposits on behalf of the funding recipients, so that compliance has been achieved through cooperation of the publishers. Compliance among funded authors not supported by publisher deposits has been more problematic. Many publishers have also used the rule to steer funded authors toward paid open access alternatives, helping those publishers grow an increasingly large portion of their revenues from author processing charges (APCs).

Our university actively promotes and distributes public access versions of the peer-reviewed articles by our faculty. We operate the third-largest institutional repository in the United States, and to date we have delivered more content to users worldwide than any other American university. The current rules allow us to host and disseminate all peer-reviewed research products from federal-funded authors, though we must respect publisher policies regarding use of their versions of record (VORs). We are currently able to re-distribute public versions of half to two-thirds of peer reviewed articles. Our free public platform is indexed by Google, Google Scholar, Scopus, and other instruments for scholarly communication. Our hosted content is distributed at rates that equal or exceed commercial and society publishers.

Many societies—including American Physical Society, American Institute of Physics, The American Society of Agricultural and Biological Engineers, the American Meteorological Society, American Astronomical Society, American

Fisheries Society—allow us to freely re-distribute their articles as published, federally funded or not.

Other societies, however, prohibit us from distributing their VORs. These include the National Academies of Science, American Association for the Advancement of Science, American Chemical Society, American Mathematical Society, Institute of Electrical and Electronics Engineers, American Psychological Association, American Society of Civil Engineers, American Society of Mechanical Engineers, and more. This restricts our ability to redistribute federal-funded peer-reviewed content from those sources, and it limits the audience for free versions of these research products.

PubMed Central, operated by the National Library of Medicine, has been instrumental in making accepted manuscript versions available to the public and to us for re-distribution. Some publishers, however, deposit versions of record in PubMed Central that are not eligible for further distribution via institutional repositories.

Shortening the permitted embargo period, as suggested, from twelve to zero months may have the unintended effect of discouraging publishers from making public access deposits on behalf of the funded authors. The loss of publishers' cooperation would place substantial burdens on the researchers and their institutions—to track funded publications and to comply with requirements that are now handled mostly by publishers. PubMed Central works because publishers support it voluntarily; without their help, it would not be as reliable or complete.

Eliminating the embargo term would force more authors to publish under paid open-access licenses, at costs between \$1600 and \$4500 per peer-reviewed article. Requiring funded authors to release their works under open licenses would further magnify this effect. While this would help researchers seeking immediate access and re-usability, it would infringe authors' intellectual property rights and cost institutions millions of additional dollars. Paying APCs for Nebraska's 3,000

articles (at average rates) could cost the university \$6 to \$10 million, around 10% of federal research funding, and more than doubling our costs of access.

Question 2:

Federal agencies could require that researchers at national laboratories be classified as federal employees, freeing their authored works from copyright restrictions. Examples of such installations are the Department of Energy laboratories at Sandia National, Lawrence Livermore, Oak Ridge, Brookhaven, Fermi, Argonne, Los Alamos, or NASA's Jet Propulsion Laboratory, etc. This would immediately bring thousand of items of peer-reviewed research into the public domain.

Federal agencies could establish more sites like PubMed Central, where eligible public access articles are shared widely and efficiently. We note the efforts currently underway by the USDA, USDOT, and other agencies to build similar platforms. PMC is an outstanding model, and the NIH is to be applauded for its creation and management.

Federal agencies could also establish and sponsor open-access journals and repositories for peer-reviewed original publication of funded research on a free-to-publish free-to-read basis. A number of agencies (CDC, NFWS, et al.) already publish free-access peer reviewed journals; it should be encouraged and expanded.

Question 3:

American leadership in these areas depends on the wide dissemination of research results. Nebraska is a leading institution for research in agronomy, entomology, plant pathology, drought, climate change, and other areas of concern for the future global food supply. We already furnish hundreds of thousands of research products to more than 200 countries worldwide, helping establish American expertise as the leader in these areas and, more important, spreading it to the

world at large. Immediate access might help enhance that leadership; competitiveness in fields such as food security seems a less appropriate issue.

Additional information:

The current 12-month embargo period is widely disregarded. It is observed by PubMed Central (PMC), but the existence of preprint servers and academic social network sites (ResearchGate or Academia.edu) makes it possible for most authors to distribute peer-reviewed manuscripts at will. While enforcement of the embargo is lax or non-existent, its elimination would have a negative impact on publishers' cooperation—pushing them to replace so-called “green” open access with author-pays models. The 12-month embargo allows PubMed Central time to prepare accurate and standardized versions of accepted author manuscripts. Requiring immediate access would not eliminate the PMC production time; there would still be several months between first publication and inclusion. The current embargo allows publishers first issue rights and buffers them against loss of revenue. The current deposit requirement system works because the publishers have supported it. If they ceased to cooperate and forced the onus of depositing approved manuscripts back onto the authors, the system would break down.

The proposed rule changes mandating immediate open access would not likely reduce the costs to universities. Institutions would still need to purchase access to non-mandated content in order to maintain appropriate collections, and they would incur more publishing fees (APCs) and increased administrative costs for tracking and compliance.

Paul Royster, proyster2@unl.edu

Sue Gardner, sgardner2@unl.edu

Office of Scholarly Communications, University of Nebraska-Lincoln Libraries

PO Box 884100

Lincoln, NE 68588-4100

*** This email originated outside of IDA. Please verify that you recognize the sender and know the content is safe before proceeding. ***

From: Tim Koder <tim.koder@pharmagenesis.com>
Sent: Wednesday, May 6, 2020 3:59 PM
To: MBX OSTP Public Access <MBX.OSTP.PublicAccess@ostp.eop.gov>
Subject: [EXTERNAL] RFI Response: Public Access – from Open Pharma

Hi Lisa,

Thank you for the opportunity to provide comments on the US Administration's consultation exercise on Open Science. We are pleased that this topic has attracted such high profile attention.

[Open Pharma](#) is a collaborative project run by Oxford PharmaGenesis that brings together pharma leaders, senior publishers, funders, societies, patients, regulators, academics and other stakeholders in medical publishing, to help our field catch up with the wider open science and open academia movement. [Oxford PharmaGenesis](#) is a medical science communications agency that supports the pharmaceutical industry, professional societies and patient groups. We exist to help our clients to bring evidence-based treatments to patients in areas of unmet medical need.

You will no doubt have had plenty of submissions making the case for open access publishing and open data, and also some comments on limitations of these. We support the move towards publicly funded research becoming ever more open, especially in transparency, accessibility and discoverability. At the same time, it is important that these developments take place sustainably, through collaborative partnerships and voluntary efforts, and do not affect intellectual property rights.

Pharmaceutical companies fund more than half of biomedical research in the USA, and through our Open Pharma work we have heard loud and clear that stakeholders in healthcare increasingly see pharma in some respects in the same way as public or charitable funders – they have an obligation to society to be open with the science underlying the medicines we take, and they should also be treated as respectable funders by the publishing industry and given the same access to open access as public funders. The pharmaceutical industry exists through an unspoken convention, a social contract, allowing them licence to develop and sell medicines. Patients enrol in trials and take unproven medicines, taking unknown risk for unknown reward, to advance scientific knowledge. The resulting knowledge should be made available as widely and as soon as possible, including by leveraging open access publishing models, without an embargo period.

We see and support a shift in the global conversation by driving collaborative open science partnerships. Our collaborative project, involving 12 contributing funders from the world's largest pharma and publishing companies, is focused on driving openness in privately-funded research. As part of our mission, we are calling on individuals and organisations to state their support for a goal of open access research publication, irrespective of funder. ><https://openpharma.blog/position-statement-on-open-access/><

The pharma industry is on a journey towards ever greater transparency in data disclosure, increasing openness and wider accessibility of scientific publications. We would very much like to encourage the White House Office of Science and Technology Policy, as part of this consultation and in your wider activities, to continue to develop collaborative conversations between industry, academia, institutional

funderson, government, patients and other stakeholders in healthcare, to discuss the importance of public access to research outputs from all funding sources in the USA.

Many thanks,

Tim

Tim Koder PhD
Communications Director

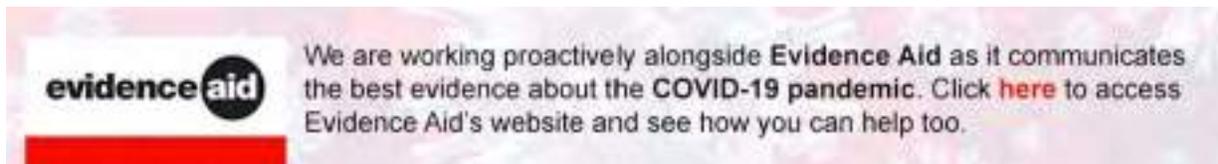
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May 6, 2020

Dr. Kelvin K. Droegemeier
Director
Office of Science and Technology Policy
Eisenhower Executive Office Building
1650 Pennsylvania Avenue, NW
Washington, DC 20504

Submitted electronically

RE: 85 FR 17907; Request for Information: Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research

Dear Dr. Droegemeier,

On behalf of the members of the American College of Rheumatology (ACR), I write to provide comments on the request for information on the public access to peer-reviewed scholarly publications as published in the *Federal Register* on March 21, 2020. The ACR is grateful for the opportunity to respond to this request for information. In particular, we write to caution OSTP against adopting a policy mandating the free distribution of peer-reviewed manuscripts earlier than one year after publication.

Founded in 1934, the ACR is an international medical society representing over 7,700 rheumatologists and rheumatology health professionals with a mission to empower rheumatology professionals to excel in their specialty. In doing so, the ACR offers education, research, advocacy, and practice management support to help our members continue their innovative work and provide quality patient care.

The ACR publishes *Arthritis & Rheumatology* and *Arthritis Care & Research*, which focus on all aspects of rheumatic disease. These international, peer-reviewed journals are committed to the highest standards of scientific information and education. Access to all content is fully available to our members and to nonmember subscribers. Others can access abstracts, the full text of all articles published more than one year previously and select open-access articles published recently. Additionally, last year we launched a third peer-reviewed journal, *ACR Open Rheumatology*, which is fully open access.

We strive to support the progress of science by producing and broadly disseminating the highest quality peer-reviewed journals possible. Publishers and societies have worked to strengthen scholarly communication and promote open science. However, it is critical that these efforts take place within a framework that respects intellectual property rights and our ability to invest in high-quality publications, and that does not hinder researchers from communicating their discoveries.

The ACR is currently engaged in efforts to respond to the COVID-19 pandemic. We have developed clinical guidance for the care of adult patients with rheumatic diseases during the pandemic. These recommendations address various treatment options and provide general guidance, as well as direction for when to start, stop, or reduce medications. All recommendations are based on current knowledge and will likely require revision as circumstances and evidence evolve. This article, like all COVID-19–related articles in any of our journals, has been made available to be accessed by anyone immediately upon publication. Additionally, the ACR is working diligently to provide support to members facing COVID-19–related patient care and practice issues including drug shortages, support for telehealth, information about federal stimulus relief aid, and guidance for infusions. We are concerned that OSTP’s significant

new regulatory proposal is a distraction from our ongoing efforts to respond to the current crisis and would undermine our stability and undercut our ability to respond to future health crises.

Federal agencies require that peer-reviewed manuscripts be made freely available online—within one year of publication—if they discuss research funded at least in part by a government grant.¹ This policy represents a significant compromise that balances our shared goals of providing broad access with the need for our organization to recoup the substantial investments we make in the peer-review, editing, publication, distribution, and long-term stewardship of these articles. This one-year compromise contrasts with the length of a full copyright term of life-of-the-author plus 70 years. Importantly, this compromise reflects Congress' guidance (in the authorizing legislation for the current policy) that the Administration must “take into consideration the role that scientific publishers play in the peer review process in ensuring the integrity of the record of scientific research, including the investments and added value that they make.”²

Reducing or eliminating the current one-year embargo would significantly jeopardize our organization's ability to invest in producing the high-quality peer-reviewed journals that our readers in the rheumatology community rely on. Furthermore, such a policy would directly result in a reduction in the quantity and quality of peer-reviewed journal articles produced by hundreds of organizations like ours.

This would not only be harmful to the research enterprise, it would also be harmful to patients, medical professionals, and scientists, who are the ultimate beneficiaries of the scholarly journals we produce. **We urge OSTP not to disrupt our ability to support the advancement of research and patient care in rheumatology.**

The ACR looks forward to serving as a resource and collaborative partner, and to help identify solutions that advance the goals of open science without undermining the communication of research findings and analyses through peer-reviewed journals. Please contact Amanda Grimm Wiegrefe, Director of Regulatory Affairs, at awiegrefe@rheumatology.org or (202) 991-1127 should you have additional questions or need clarification.

Sincerely,



Ellen M. Gravallese, MD
President, American College of Rheumatology

¹These policies were developed pursuant to OSTP's requirement that agencies “shall use a twelve-month post-publication embargo period as a guideline for making research papers publicly available . . .” See OSTP Memorandum on “Increasing Access to the Results of Federally Funded Scientific Research” (Feb. 22, 2013).

² America COMPETES Reauthorization Act of 2010, Section 103(b)(9), available at: <https://www.congress.gov/111/plaws/publ358/PLAW-111publ358.pdf>.

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From: Tim Koder <tim.koder@pharmagenesis.com>
Sent: Wednesday, May 6, 2020 3:59 PM
To: MBX OSTP Public Access <MBX.OSTP.PublicAccess@ostp.eop.gov>
Subject: [EXTERNAL] RFI Response: Public Access – from Open Pharma

Hi Lisa,

Thank you for the opportunity to provide comments on the US Administration's consultation exercise on Open Science. We are pleased that this topic has attracted such high profile attention.

[Open Pharma](#) is a collaborative project run by Oxford PharmaGenesis that brings together pharma leaders, senior publishers, funders, societies, patients, regulators, academics and other stakeholders in medical publishing, to help our field catch up with the wider open science and open academia movement. [Oxford PharmaGenesis](#) is a medical science communications agency that supports the pharmaceutical industry, professional societies and patient groups. We exist to help our clients to bring evidence-based treatments to patients in areas of unmet medical need.

You will no doubt have had plenty of submissions making the case for open access publishing and open data, and also some comments on limitations of these. We support the move towards publicly funded research becoming ever more open, especially in transparency, accessibility and discoverability. At the same time, it is important that these developments take place sustainably, through collaborative partnerships and voluntary efforts, and do not affect intellectual property rights.

Pharmaceutical companies fund more than half of biomedical research in the USA, and through our Open Pharma work we have heard loud and clear that stakeholders in healthcare increasingly see pharma in some respects in the same way as public or charitable funders – they have an obligation to society to be open with the science underlying the medicines we take, and they should also be treated as respectable funders by the publishing industry and given the same access to open access as public funders. The pharmaceutical industry exists through an unspoken convention, a social contract, allowing them licence to develop and sell medicines. Patients enrol in trials and take unproven medicines, taking unknown risk for unknown reward, to advance scientific knowledge. The resulting knowledge should be made available as widely and as soon as possible, including by leveraging open access publishing models, without an embargo period.

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The pharma industry is on a journey towards ever greater transparency in data disclosure, increasing openness and wider accessibility of scientific publications. We would very much like to encourage the White House Office of Science and Technology Policy, as part of this consultation and in your wider activities, to continue to develop collaborative conversations between industry, academia, institutional

funderson, government, patients and other stakeholders in healthcare, to discuss the importance of public access to research outputs from all funding sources in the USA.

Many thanks,

Tim

Tim Koder PhD
Communications Director

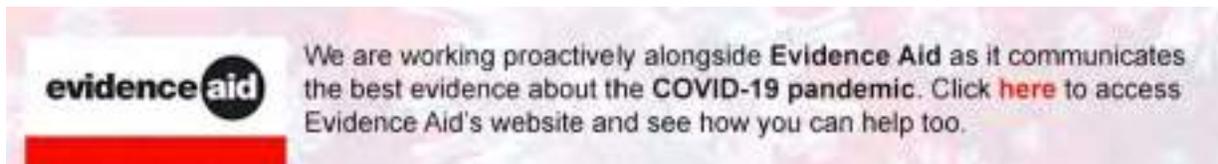
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6 May 2020

Ms. Lisa Nichols
Assistant Director for Academic Engagement
Office of Science and Technology Policy
The White House
Washington, DC

Dear Ms. Nichols,

The Association of University Presses (AUPresses) is pleased to submit these comments in response to your office's February 19th request for information ("RFI") on approaches for ensuring broad public access to the peer-reviewed scholarly publications, data, and code that result from federally funded scientific research.

AUPresses is a worldwide community of university presses, affiliated with both public and private institutions, as well as aligned nonprofit scholarly publishers whose members meet strict eligibility criteria related to editorial rigor and peer review, sustained scholarly output, and commitment to mission. While our members publish across all disciplines, this community is best known for publishing scholarship in the humanities and qualitative social sciences (HSS). Although the majority of our 156 members are based in North America, we seek to further the interests of presses from 16 countries on all six continents – who collectively publish work from scholars all around the world. The Association was founded in 1937, and maintains offices in Washington, DC and New York City.

AUPresses issued its first statement in support of sustainable Open Access in 2007. Since that time, the Association and its members have engaged in a broad range of experiments and collaborations to sustainably increase access to high-quality scholarship. Individual member presses have launched well over a dozen projects funded by the Andrew W. Mellon Foundation to create an infrastructure to support open digital publishing. Our community has developed a number of Open Access platforms, including Luminos, Collabra, and MUSEOpen. Three years ago, working with our colleagues at the Association of American Universities and the Association of Research Libraries, we announced a five-year pilot to promote institutional funding of OA monographs (TOME: Toward an Open Monograph Ecosystem) <https://www.openmonographs.org/>. Last Fall, the Association updated its 2007 statement to reflect the results of our collective learning over the past dozen years. (<http://aupresses.org/policy-areas/copyright-a-access/open-access/1810-oa-statement>) Most recently, the Association chartered a Task Force on Open Access with a charge to "[e]xplore and recommend ... ways in which the Association can support member presses pursuing or interested in OA publishing, including promoting understanding of rapidly evolving government and funder requirements, OA business models, and best practices around the dissemination of OA scholarship." The Task Force has completed a draft report, and we expect a final version will be available by Summer. By any measure, AUPresses take sustainable Open Access seriously.

That said, only a subset of our member presses publish the results of research directly funded by Federal government agencies (and those that do either already maintain significant Open Access publishing programs or are actively engaged in various Open Access initiatives). Consequently, expansion of the requirements contained in the 2013 memorandum *Increasing Access to the Results of Federally-funded Scientific Research* is likely to have little immediate impact on the majority of US university presses. Nevertheless, it is undeniable that any action the OSTP takes to expand current public access requirements will set a direction of travel for all future Open Access policy discussions in the United States. We therefore urge OSTP to keep in mind the

following principles, garnered from our community's substantial experience in pursuit of sustainable Open Access, as it evaluates changes to current policy.

As a general matter, we endorse the views expressed by our member Oxford University Press ("OUP") in its May 4th submission to you. While OUP's scale in many ways makes it unique among our membership, its experiences in implementing Open Access reflect those of the broader university press community. We think those experiences yield a few guiding principles we would urge OSTP to respect in its deliberations:

- **One Size Cannot Fit All.** Scholarly publishing programs vary by size, by discipline, by preferred medium of scholarly communication (e.g., short- versus long-form), by overall level of funding, and even by geography. Some serve small, focused communities of scholarly interest. While the path to Open Access publishing seems well-trodden for commercial STEM journals publishers, that is far from the case across all the aforementioned variables. An across-the-board porting of the rubric that has evolved for one circumstance is likely to be inappropriate for others, and any new requirements must take into account the impact of legitimate disciplinary differences such as those suggested here. This should be a particular consideration for OSTP in the case of the qualitative social sciences (e.g., economics, psychology) where research does in fact tend to benefit from Federal funding.
- **Avoid the Creation of New Winners and Losers.** Regardless of its desirability, the radical shift in publishing being brought about by Open Access has the potential to create new winners and losers (indeed in some cases it already has), and in our view it is an outcome to be guarded against. As OUP notes in its submission, requirements in Europe are accelerating a trend toward consolidation in scholarly publishing – never conducive to a healthy ecosystem. But damage to the publishing ecosystem is not the only risk to be guarded against. The shift to a financial model that relies primarily on some form of Author Processing Charge already preferences scholars with access to funding – marginalizing independent scholars, scholarship from the Global South, and authors from under-funded institutions. Finally, it must be noted that unequal access to digital infrastructure similarly threatens to limit the success of any effort to increase readers' access to scholarship. Any expansion of the current OSTP requirements must be careful to avoid exacerbating these trends.
- **Allow for Experimentation.** Again, while the path to Open Access appears well-trodden for commercially published STEM journals, other disciplines and other publishers currently find themselves with less defined paths forward. These disciplines and these publishers should be given the opportunity to develop appropriate solutions for their specific circumstance. In particular, a blanket prohibition on hybrid journals is actually likely to make it more difficult to achieve a transition to Open Access in some HSS disciplines.

In summary, we urge OSTP to craft any expansion of its current public access requirements with sufficient flexibility to allow university presses and other mission-driven publishers to continue to experiment and innovate, to find ways to deliver Open Access consistent with the expectations of the scholars they serve and in line with their financial obligations to parent institutions.

We thank the OSTP for providing a forum for public comment. Our community has approached the idea of Open Access to the fruits of research with the same spirit of scholarly rigor that they expect in the work they publish—testing solutions, examining evidence, and questioning assumptions. We welcome the opportunity to continue to share our community's expertise and to work collaboratively with you and other stakeholders as you continue your deliberations.

Respectfully,



Peter M. Berkery, Jr.
Executive Director



May 6th, 2020

BY ELECTRONIC SUBMISSION

Dr. Kelvin K. Droegemeier
Director, Office of Science and Technology Policy
Eisenhower Executive Office Building
1650 Pennsylvania Avenue, NW
Washington, DC 20504

Response to OSTP Request for Information – FR Doc. 2020-06622 – “Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research”

Dear Dr. Droegemeier,

The American Society for Pharmacology and Experimental Therapeutics (ASPET) presents its comment to the Office of Science and Technology Policy (OSTP) and the National Science and Technology Council's (NSTC) Subcommittee on Open Science (SOS) to inform the administration of the challenges to scientific societies presented by instituting public access to peer-reviewed scholarly publications resulting from federally funded research. ASPET broadly supports the goals of increasing access to scientific research, but full open access will upend revenue models at many scientific societies and force them to scale back or eliminate services. Some societies will be forced to close entirely. ASPET urges the administration to work with stakeholders to find alternative revenue models that ensure the preservation of scientific societies and their essential role in the research community.

ASPET is a 5,000-member scientific society located in Rockville, MD. Founded in 1908, ASPET is also a founding member of the Federation of American Societies for Experimental Biology (FASEB) and counts among its members 22 Nobel prize winners. ASPET's members conduct essential basic and clinical pharmacological research and work for academia, government, large pharmaceutical companies, small biotech companies, and non-profit organizations. Their efforts help to develop new medicines and therapeutic agents to fight existing and emerging diseases. In the over 100 years that ASPET and several of its journals have existed, we have published landmark research that has contributed to significant therapeutic discoveries that advanced the field and improved human health.

To assist the administration in accurately evaluating the effects of moving to an open access model of publication on scientific societies, ASPET has provided answers to the questions in the request for information.

What current limitations exist to the effective communication of research outputs (publications, data, and code) and how might communications evolve to accelerate

public access while advancing the quality of scientific research? What are the barriers to and opportunities for change?

Since April 2005, ASPET has made the peer-reviewed manuscript version of all content in the Society's primary research journals freely accessible upon acceptance for publication. That version remains freely accessible even after the copyedited and formatted version is posted. Usage data show that the manuscript version is frequently and widely accessed for many years. In addition, ASPET makes all content (including that in its high-impact review journal) freely accessible after 12 months for a period of 5 years. ASPET occasionally publishes special sections focused on a topic of particular interest and makes the formatted version of those articles freely accessible for 90 days. These articles again become freely accessible after 12 months and remain so for 5 years. All research that cites NIH funding is deposited in PubMed Central on behalf of authors, assuring that it is promptly submitted and made freely accessible there after 12 months. ASPET provides free access to its journals in developing countries. ASPET's mission is to "promote pharmacological knowledge and its application...." Our publication model has removed barriers to access while maintaining low-cost subscriptions that fund the journals and the work of the Society. The independent self-publishing programs of scientific societies do not operate like those of commercial publishers.

What more can Federal agencies do to make tax-payer funded research results, including peer-reviewed author manuscript, data, and code funded by the Federal Government, freely and publicly accessible in a way that minimizes delay, maximizes access, and enhances usability? How can the Federal Government engage with other sectors to achieve these goals?

Significant changes in current policies regarding publication of tax-payer funded research results are likely to hurt scientific societies and their journals while aiding multinational commercial publishers. Librarians and others acknowledge that scientific societies such as ASPET provide high-quality peer-reviewed content at the lowest prices compared with for-profit publishers. The majority of ASPET's income is derived from subscriptions to our journals, as low priced as they are.

Beyond supporting our publishing operations and the peer review process, this revenue supports many programs and services for young scientists. For example, the ASPET Mentoring Network is a program designed to supplement the training that graduate students and postdoctoral trainees receive through their university programs. ASPET also supports a summer undergraduate research fellowship (SURF) program designed to introduce pharmacology research to undergraduates through a 10-week summer laboratory experience. The goal of the SURF program is to use authentic, mentored research experiences in pharmacology to heighten student interest in careers in biomedical research and related health care disciplines. Students who have engaged in research experiences report improvements in their technical and personal skills as well as increased confidence in their research skills.

Journal revenue also subsidizes ASPET's advocacy efforts on behalf of the pharmacology profession. ASPET's Public Affairs staff provides an invaluable link between researchers in the profession and the congressional committees and executive branch agencies that regulate them. The Public Affairs staff provides these authorities with feedback from the pharmacology community that produces stronger, narrowly tailored laws and regulations that achieve public policy goals without significantly disrupting the pharmacology practice. For instance, ASPET has recently served as a valuable resource to lawmakers tackling the opioid crisis, pushing for

expanded research access to drugs of abuse so that we might better understand their methods of action and therapeutic potential while crafting safer alternatives to those currently in use.

ASPET cannot sustain its services under an open access model. Subscriptions provide 77% of the income from ASPET's journals. ASPET has offered two open access options since 2015: publication under a CC BY license for \$3,000 article processing charge (APC) or under a CC BY-NC license for a \$2,000 APC. If all of the content ASPET published in 2019 had been published under the \$3,000 APC, the income would equal only 61% of subscription income for that year. It does not even cover the costs of producing the Society's journals, much less support other valuable services provided by the Society to the scientific community. The Society would have to increase the APC to over \$6,500 per article to come close to matching subscription income. ASPET's journals department operates with a staff of only 5 FTEs working with outside vendors to publish four peer-reviewed journals. We have always worked to keep our costs as low as possible to provide low subscription prices. Our journals are specialized and published under 570 articles in 2019. There are many fixed costs, and that volume of content cannot be supported by reasonable APCs without eliminating services provided to authors, readers, reviewers, and editorial boards. Additionally, as manuscript submissions grow and wane from year to year, APCs do not provide a reliable source of income compared to subscription fees. The journals have seen manuscript submissions fluctuate by up to 20% from year to year. Subscription income has never varied by a similar percentage. Having to publish under open access would require ceasing publication for most if not all ASPET journals, and that would bring about the end of the Society and the services it provides to the scientific community. This would not serve science or the Federal Government.

How would American science leadership and American competitiveness benefit from immediate access to these resources? What are potential challenges and effective approaches for overcoming them? Analyses that weigh the trade-offs of different approaches and models, especially those that provide data, will be particularly helpful.

Open access provides no advantage to American science leadership and American competitiveness over that of other countries. Open access cannot be limited to a country, and it provides greater help to countries with fewer economic resources than the United States.

Federally funded scientists note that their research grants do not provide additional money for APCs. Thus, having to pay to *publish* their research will decrease the money available to *conduct* research.

Any additional information that might be considered for Federal policies related to public access to peer-reviewed author manuscripts, data, and code resulting from federally supported research.

Scientific and professional societies that self-publish journals have different goals and business models from commercial publishers. Nonprofit scientific societies provide low-cost, high-quality content, often making it freely accessible after a period designed to recoup expenses. A one-size-fits-all open access policy will likely mean the end to many of these journals and their societies. We respectfully ask the Federal Government to take this into consideration and understand the irreversible impact that an open access mandate will have on those organizations seeking to support and further science. We also ask any changes that affect society publishers be pursued via the rulemaking process.

Respectfully,

A handwritten signature in cursive script that reads "Judith A. Siuciak". The signature is written in a dark ink and is positioned above the printed name.

Judith Siuciak, Ph.D. CAE
Executive Officer



**Association of
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May 6, 2020

Office of Science and Technology Policy
Executive Office of the President
Eisenhower Executive Office Building
1650 Pennsylvania Avenue
Washington, DC 20504

Re: Request for Information: Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting from Federally Funded Research (85 FR 9488)

Submitted electronically to: OpenScience@ostp.eop.gov

The Association of American Medical Colleges (AAMC) appreciates the opportunity to comment on the White House Office of Science and Technology Policy (OSTP) request for information on public access to the results of federally funded research. The AAMC is a not-for-profit association representing all 155 accredited U.S. medical schools, nearly 400 major teaching hospitals and health systems, and more than 80 academic and scientific societies. Through these institutions and organizations, the AAMC represents nearly 173,000 faculty members, 89,000 medical students, 129,000 resident physicians, and more than 60,000 graduate students and postdoctoral researchers in the biomedical sciences.

The AAMC supports the efforts to facilitate implementation of the 2013 OSTP memorandum on increasing access to the outputs of federally funded research, including publications, data, and code. Making these outputs more readily available advances science by enabling further validation of experimental results, facilitating reuse of hard to-generate data, catalyzing new research and scientific collaboration, and generally promoting more responsible stewardship of federal resources. Additionally, increased transparency is essential to building trust and confidence in publicly funded research.

What current limitations exist to the effective communication of research outputs (publications, data, and code) and how might communications evolve to accelerate public access while advancing the quality of scientific research? What are the barriers to and opportunities for change?

Opportunities to achieving increased public access of research outputs vary by agency and scientific discipline, and include clear federal policies and guidance, sufficient investment in infrastructure and relevant training, and common standards for curation and discoverability. We note that agencies are already in the process of implementing public access plans and have further guidance on how to move forward in the recommendations detailed in the 2019 report¹ from the Government Accountability Office, which the AAMC agrees are important steps to improve current public access to data and publications.

The AAMC has specifically detailed challenges and opportunities specific to data management, sharing, and access in previous responses to the NIH draft data management and sharing plan² and OSTP's request for comments on desirable characteristics of data repositories.³ One primary consideration for agencies is that the development of consistent guidelines and clearly defined characteristics for repositories to preserve and provide access to research data are critical. With the expanding policies for data sharing and public access, many institutions are planning to expand and use their own repositories. Without federal guidance on standards for data storage and discoverability as well as some level of centralized infrastructure or coordination, holding data in such disparate platforms and systems will place a significant technical burden on anyone who wants to access or reuse the data.

In addition to appropriate storage, public access to data, code, and other research outputs is only meaningful provided that the information itself is understandable to users outside of the original researcher. Thus, it is critical that agencies define common standards and formats, require the use of metadata where relevant, and ensure adequate curation of any shared resources.

In terms of publications, the largest barrier is the lack of models that will make a switch from pay-to-read (i.e. subscriptions) to pay-to-publish sustainable. Academic society's journals may

¹ Additional Actions Needed to Improve Public Access to Research Results. GAO-20-81: Published: Nov 21, 2019. <https://www.gao.gov/assets/710/702847.pdf>

² AAMC comments re: NOT-OD-20-013 "Request for Public Comments on a DRAFT NIH Policy for Data Management and Sharing and Supplemental Draft Guidance." <https://www.aamc.org/system/files/2020-01/ocomm-ogr-AAMC%20Response%20to%20NIH%20draft%20data%20sharing%20policy.pdf>

³ AAMC comments re: Request for Public Comment on Draft Desirable Characteristics of Repositories for Managing and Sharing Data Resulting from Federally Funded Research (85 FR 3085) <https://www.aamc.org/system/files/2020-03/ocomm-ogr-AAMC%20Comments%20to%20OSTP-%20Repository%20Characteristics%2085%20FR%203085.pdf>

not be able to transition and those avenues for publication may cease to exist, particularly at a time when the other key source of revenue for academic societies, meetings, has dried up for a period of time. An additional problem is assuring that less well funded investigators will be able to publish in peer reviewed journals. While a researcher may be willing to expend grant funds on their own publication, they may not be willing to spend those grant dollars on the work of a trainee. We have not, collectively, solved all the problems of the pay-to-publish model. We believe that journals still have an important peer-review function, that they curate information in a way that makes it more valuable to a broad audience, and that any transition to other models must find a way to retain these crucial aspects.

What more can Federal agencies do to make taxpayer funded research results, including peer-reviewed author manuscripts, data, and code funded by the Federal Government, freely and publicly accessible in a way that minimizes delay, maximizes access, and enhances usability? How can the Federal Government engage with other sectors to achieve these goals?

Continued engagement with other sectors is also a necessary component to facilitate the broader dissemination of research results. The federal government must engage with publishers, including scientific societies, to enable access to published research results. PubMed Central, a free full-text archive of biomedical journal literature maintained by the National Library of Medicine and currently utilized by a large number of agencies, is one model of a successful federal partnership to make publications freely available to a wider audience.

Academic institutions, and particularly their libraries, also play a key role in the organization and availability of research outputs from faculty. Supporting these efforts will require funds for the creation and maintenance of repositories, as well as supporting personnel who have specialized knowledge and can help scientists share the outcomes of their research. Institutions can also provide valuable insight into challenges for public access and share community-developed processes and standards to inform federal policies. There are many existing initiatives which provide valuable insight into increasing the accessibility of data and scholarly communications, including AAMC's Credit for Data Sharing project⁴, and the Association of Public and Land-grant Universities and Association of American Universities (APLU-AAU) workshops on Accelerating Access to Research Data.⁵

⁴ Credit for Data Sharing. <https://www.aamc.org/what-we-do/mission-areas/medical-research/data-sharing>

⁵ AAU-APLU Public Access Working Group Report and Recommendations. <https://www.aau.edu/key-issues/aau-aplu-public-access-working-group-report-and-recommendations>

How would American science leadership and American competitiveness benefit from immediate access to these resources? What are potential challenges and effective approaches for overcoming them?

Public access to research outputs is an essential step in the scientific process, especially it relates to the biomedical and clinical research conducted at the AAMC's member institutions.

Collaborative science and access to other researchers' work is critical to our understanding of biological phenomena and the translation of basic research into treatments and cures. Increased knowledge dissemination and collaborative science will further American competitiveness and speed the timeline of positive outcomes of federal research funding on health and disease.

However, the rapid dissemination of poorly executed science could be a by-product of a failure to build new models that retain the standard setting of a peer-review based system.

The AAMC appreciates OSTP's efforts to seek input from stakeholders and looks forward to continued engagement as the federal government develops guidance relevant to public access of research outputs. Please feel free to contact me or my colleagues Anurupa Dev, PhD, Lead Specialist for Science Policy (adev@aamc.org) and Heather Pierce, JD, MPH, Senior Director for Science Policy and Regulatory Counsel (hpierce@aamc.org) with any questions about these comments.

Sincerely,

A handwritten signature in blue ink that reads "Ross McKinney, Jr., MD". The signature is stylized and includes a circled "MD" at the end.

Ross McKinney, Jr., MD
Chief Scientific Officer

5/6/2020

Dr. Kelvin K. Droegemeier
Director, Office of Science and Technology Policy
Eisenhower Executive Office Building
1650 Pennsylvania Avenue NW
Washington, DC 20504

Sent via email

Re: Request for Information: Public Access to Peer-Reviewed Scholarly Publications,
Data and Code Resulting From Federally Funded Research

Dear Dr. Droegemeier,

On behalf of the Software & Information Industry Association (SIIA), I want to thank the White House Office of Science and Technology Policy (OSTP) for the opportunity to provide input regarding public access to peer-reviewed scholarly publications, data, and code resulting from federally funded research.

SIIA is the principal trade association of the software and digital information industries, representing over 800 member companies that develop and market software and electronic content. Our members include electronic publishers whose investments provide the public with a wide variety of information products and services covering nearly every subject matter imaginable, including publishers of peer-reviewed scientific literature, books that incorporate findings from government research, as well as databases and graphics that assist researchers in better analyzing, understanding and using research information. These industries produce significant knowledge-based, value-added jobs to our economy and our Nation's innovation base.

SIIA is committed to a policy framework that respects intellectual property rights and preserves the ability of our membership to invest in high-quality publications. This is

why we are concerned to hear that OSTP is considering mandating that any journal article that reports on federally-funded research be made available for free immediately upon publication, a dramatic change from the twelve-month post-publication embargo period that currently exists.

Journal articles are not free to produce. They require significant investment on the part of private sector publishers to collect, review, and distribute high caliber scholarly articles. To maintain these standards, publishers must first solicit submissions and review articles for quality (some journals rejecting as many as 90 percent), and then send their selections out for peer review to be vetted for accuracy and integrity. As part of the peer review process, editors are responsible for training and managing reviewers to meet strict disclosure and evaluation standards. Only after an article undergoes this rigorous process of selection, peer review, and editorial review is it able to be published. This process occurs entirely in the private sector and at private expense. Scholarly publishers are not a party to federal grants or research funds and instead rely upon subscriptions revenue to cover expenses.

A requirement to make all articles that report on federal-funded research freely available would leave scholarly publishers little choice other than to shift business models away from a pay-to-read (subscription) model to a pay-to-publish (open access) model, where by authors would be responsible for securing funds to cover publishing fees so that the underlying article is free to read immediately. There are more than 224,000 scientific articles published each year that report on federally-funded research, and a conservative estimate of the average open access publishing fee is about \$2750. Simple arithmetic reveals that such a shift would require more than \$600 million per year in additional or diverted funding from the United States government, where no additional or diverted funding is required today.

Under current law, the Copyright Act (17 U.S.C. § 101 et seq.) provides incentives that allow publishers to fund peer review and produce quality scientific articles without government funding. Those incentives were constitutionally designed to encourage private parties to engage in producing publications of these kinds of works, and had the

salutary effect of preventing the government from undue influence over who may publish or where. The pay-to-publish open access model, a model already widely offered by publishers in the marketplace, is currently used by approximately 20% of authors whose articles report on federally-funded research. The question OSTP should be asking is why only 20% uptake for pay-to-publish with 80% of authors choosing pay-to-read? What incentives structures contribute toward the preference for pay-to-read, and how can those be overcome? A requirement that federally-supported researchers publish only in open access journals without a robust discussion about and serious commitment to making pay-to-publish model sustainable at a scale of 224,000 articles per year is irresponsible.

If the embargo period is zero, the government will have—by fiat—rendered subscription sales impossible for many members, and created a recurring obligation on itself to fund scientific publishing. There is no alternative (much less recurring) funding source for these works. The result will be the destruction of a well-functioning business model that has existed for 200-plus years, and threatens the ability of publishers to invest in the production and distribution of scholarly articles.

It's the Wrong Time to Experiment with Scientific Publishing

The wide availability of quality scientific research now available are a direct result of such investments. Scientific publishers were quick to respond to the COVID-19 crisis and have been working tirelessly to help doctors and researchers understand and combat the pandemic. Accurate and reliable information is critical in the fight against COVID-19, and many publishers have established their own free resource pages and are collaborating with the U.S. government to ensure an even broader community has free access to this vital research. Furthermore, publishers are ensuring that many of the articles being made available for free are in a machine-readable format so that artificial intelligence (AI) tools can be utilized to extract even more information.

Without reliable peer reviewed scholarly communication supported by sustainable business models, it will be harder for scientists to communicate research when the next

pandemic arrives. Rather than standing on the shoulders of giants, the next generation of scientists may face a dearth of information. Now is not the time to impose a one-size-fits-all approach to the current flexible business models that are working well in the publishing sector.

For the preservation of high caliber scientific communication, and the integrity of the peer review process that makes it possible, SIIA urges the Administration to refrain from lowering post-publication embargo periods. When exploring approaches to scholarly communication, it's imperative that the Administration works collaboratively with all concerned stakeholders to assess the broad impacts of any potential measure and guard against unintended consequences before implementing them more widely. SIIA and our member companies look forward to working with OSTP moving forward. Please contact Jesse Spector, Director of Technology Policy, at (202) 789-4473 or jspector@siaa.net for any questions or requests for further information.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Jesse Spector', with a long horizontal flourish extending to the right.

Jesse Spector
Director, Technology Policy
Software & Information Industry Association



May 6, 2020

Dr. Kelvin K. Droegemeier
Director, Office of Science and Technology Policy
Eisenhower Executive Office Building
1650 Pennsylvania Avenue, NW
Washington, DC 20504

Response to OSTP Request for Information – FR Doc. 2020-06622 – “Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research”

Dear Dr. Droegemeier,

The current President of the International Society for Laboratory Hematology and the Editors in Chief of our journal, the *International Journal of Laboratory Hematology*, are grateful for the opportunity to respond to this request for information. In particular, we write to caution OSTP against adopting a policy mandating the free distribution of peer-reviewed manuscripts earlier than one year after publication.

The International Society for Laboratory Hematology was founded in 1992 and is a growing international group of laboratory hematology professionals with approximately 1,000 members serving as a forum for the dissemination of new ideas and information in all of the disciplines within laboratory hematology. The *International Journal of Laboratory Hematology* is the official journal of the International Society for Laboratory Hematology. The journal provides an international forum for all new developments in the research and practice of laboratory hematology and includes invited reviews, full length original articles and correspondence.

Ultimately, we strive to support the progress of science by producing and broadly disseminating the highest quality peer-reviewed journals possible. Publishers and societies have worked to strengthen scholarly communication and promote open science. However, it is critical that these efforts take place within a framework that respects intellectual property rights and our ability to invest in high-quality publications, and that does not hinder researchers from communicating their discoveries.

Our organization is currently deeply engaged in efforts to respond to the COVID-19 pandemic. Our journal is soliciting high-quality papers on COVID-19 for distribution to the community and have undertaken to publish this research as rapidly as possible (usually papers appear online within 24 hours of acceptance). Papers relating to COVID-19 published in the *International Journal of Laboratory Hematology* also appear in a freely available collection of content maintained by our publishers giving easy access to COVID-19 research across hematology journals. We are concerned that OSTP’s significant new regulatory proposal is a distraction from our ongoing efforts to respond to the current crisis and would undermine our stability and undercut our ability to respond to future health crises.

As you are aware, federal agencies currently require that peer-reviewed manuscripts be made freely available online—within one year of publication—if they discuss research funded at least in part by a

government grant.¹ This policy represents a significant compromise that balances our shared goals of providing broad access with the need for our organization to recoup the substantial investments we make in the peer-review, editing, publication, distribution, and long-term stewardship of these articles. This one-year compromise contrasts with the length of a full copyright term of life-of-the-author plus 70 years. Importantly, this compromise reflects Congress' guidance (in the authorizing legislation for the current policy) that the Administration must "take into consideration the role that scientific publishers play in the peer review process in ensuring the integrity of the record of scientific research, including the investments and added value that they make."²

Reducing or eliminating the current one-year embargo would significantly jeopardize our organization's ability to invest in producing the high-quality peer-reviewed journals that our readers in the hematology community rely on. In so doing, such a policy would contravene Congress' clear guidance to take our role and investments into consideration. Furthermore, such a policy would directly result in a reduction in either the quantity or quality (or more likely, both) of peer-reviewed journal articles produced by hundreds of organizations like ours.

This would not only be harmful to the research enterprise, it would also be harmful to the patients, medical professionals and scientists who are the ultimate beneficiaries of the scholarly journals we produce.

We urge you not to disrupt our ability to support the advancement of research and patient care in hematology, and we look forward to working together to identify solutions that advance the goals of open science without undermining the communication of research findings and analyses through peer-reviewed journals.

Thank you again for the opportunity to submit these comments.

Sincerely,

Catherine P. M. Hayward, MD PhD FRCP(C)
President, International Society of Laboratory Hematology

Tracy George, MD
President Elect, International Society of Laboratory Hematology
Co-Editor in Chief, International Journal of Laboratory Hematology

Giuseppe d'Onofrio
Co-Editor in Chief, International Journal of Laboratory Hematology

¹These policies were developed pursuant to OSTP's requirement that agencies "shall use a twelve-month post-publication embargo period as a guideline for making research papers publicly available . . ." See OSTP Memorandum on "Increasing Access to the Results of Federally Funded Scientific Research" (Feb. 22, 2013).

² America COMPETES Reauthorization Act of 2010, Section 103(b)(9), *available at*: <https://www.congress.gov/111/plaws/publ358/PLAW-111publ358.pdf>.



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May 5, 2020

BY ELECTRONIC SUBMISSION

Dr. Kelvin K. Droegemeier
Director, Office of Science and Technology Policy
Eisenhower Executive Office Building
1650 Pennsylvania Avenue, NW
Washington, DC 20504

**Response to OSTP Request for Information – FR Doc. 2020-06622 –
“Public Access to Peer-Reviewed Scholarly Publications, Data and
Code Resulting From Federally Funded Research”**

Dear Dr. Droegemeier,

The American Academy of Neurology is grateful for the opportunity to respond to this request for information. In particular, we write to caution OSTP against adopting a policy mandating the free distribution of peer-reviewed manuscripts earlier than one year after publication.

Founded in 1948, the American Academy of Neurology represents more than 36,000 members and is dedicated to promoting the highest quality patient-centered care and enhancing member career satisfaction. The Academy publishes four academic journals: *Neurology*[®], *Neurology*[®] *Clinical Practice*, *Neurology*[®] *Neuroimmunology & Neuroinflammation*, and *Neurology*[®] *Genetics*. These journals serve both the neurologists they inform and the patients for whom they care.

Ultimately, we strive to support the progress of science by producing and broadly disseminating the highest quality peer-reviewed journals possible. Publishers and societies have worked to strengthen scholarly communication and promote open science. However, it is critical that these efforts take place within a framework that respects intellectual property rights and our ability to invest in high-quality publications, and that does not hinder researchers from communicating their discoveries.

Our organization is currently deeply engaged in efforts to respond to the COVID-19 pandemic. We have expedited the review and publication of articles related to COVID-19 and made them free on our websites. We have also created a new website, open to the public, to disseminate information about neurologic complications of COVID-19. We are concerned that OSTP's significant new regulatory proposal is a

distraction from our ongoing efforts to respond to the current crisis and would undermine our stability and undercut our ability to respond to future health crises.

As you are aware, federal agencies currently require that peer-reviewed manuscripts be made freely available online—within one year of publication—if they discuss research funded at least in part by a government grant.¹ This policy represents a significant compromise that balances our shared goals of providing broad access with the need for our organization to recoup the substantial investments we make in the peer-review, editing, publication, distribution, and long-term stewardship of these articles. This one-year compromise contrasts with the length of a full copyright term of life-of-the-author plus 70 years. Importantly, this compromise reflects Congress' guidance (in the authorizing legislation for the current policy) that the Administration must “take into consideration the role that scientific publishers play in the peer review process in ensuring the integrity of the record of scientific research, including the investments and added value that they make.”²

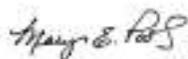
Reducing or eliminating the current one-year embargo would significantly jeopardize our organization's ability to invest in producing the high-quality peer-reviewed journals on which our readers in the neurology community rely. In so doing, such a policy would contravene Congress' clear guidance to take our role and investments into consideration. Furthermore, such a policy would directly result in a reduction in either the quantity or quality (or more likely, both) of peer-reviewed journal articles produced by hundreds of organizations like ours.

Such a policy would not only be harmful to the research enterprise, it would also be harmful to the medical professionals and patients who are the ultimate beneficiaries of the scholarly journals we produce.

We urge you not to disrupt our ability to support the advancement of research and patient care in neurology, and we look forward to working together to identify solutions that advance the goals of open science without undermining the communication of research findings and analyses through peer-reviewed journals.

Thank you again for the opportunity to submit these comments.

Sincerely,



Mary E. Post, MBA, CAE

Chief Executive Officer
American Academy of Neurology

¹These policies were developed pursuant to OSTP's requirement that agencies “shall use a twelve-month post-publication embargo period as a guideline for making research papers publicly available . . .” See OSTP Memorandum on “Increasing Access to the Results of Federally Funded Scientific Research” (Feb. 22, 2013).

² America COMPETES Reauthorization Act of 2010, Section 103(b)(9), *available at*:
<https://www.congress.gov/111/plaws/publ358/PLAW-111publ358.pdf>.

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May 6, 2020

BY ELECTRONIC SUBMISSION

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Response to OSTP Request for Information – FR Doc. 2020-06622 – “Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research”

Dear Dr. Droegemeier,

The American Chemical Society (ACS) is grateful for the opportunity to respond to this RFI. Overall, we would welcome the opportunity to work with the Office of Science & Technology Policy (OSTP) to advance and promote the American research enterprise. In the context of this RFI, we propose developing public-private partnerships to create pilots that promote greater uptake of gold Open Access (OA) with sustainable investment from all parties as well as trials to determine the most suitable ways to provide ongoing access to data and code resulting from Federally funded research. But we must also caution against adopting policies that would mandate the free distribution of peer-reviewed manuscripts earlier than one year after publication without providing full funding for Gold Open Access support for U.S. Government funded researchers.

Founded in 1876 and chartered by the U.S. Congress, we are the world’s largest scientific society. Our mission is to advance the broader chemistry enterprise and its practitioners for the benefit of Earth and its people. Our 150,000 members are scholars, researchers, and engineers who advance the practice of chemistry and related sciences. Their efforts fuel U.S. innovation and contribute to job growth in our country. Through our Publications Division, ACS publishes more than 60 high-quality journals contain articles carefully selected, peer reviewed and edited, advancing human welfare. All journals in our portfolio are hybrid OA with two being fully OA. Thus, all ACS journals provide an option for researchers to publish their work in an openly accessible manner. These field-leading journals report on some of the most important discoveries made by global scientists and are led by research-active editors, the majority of whom are based in the U.S. ACS supports universal access¹ to the results of scientific research via publishing models that are sustainable and that ensure the integrity and permanence of the

¹ For more information on the goal of universal access see: <https://sloan.org/programs/digital-technology/universal-access-to-knowledge>

scholarly record upon which scientific progress is based. We would welcome the opportunity to work with you to chart a course to a sustainably funded OA publishing economy.

Openness cannot come at the cost of the quality, integrity, and diversity of scientific communication. An elimination of the current policy mandating the free distribution of peer-reviewed manuscripts one year after publication would very possibly have devastating effects on the economic viability of scholarly societies like ACS. Rather than promoting open availability, the proposed policy could undermine the quality, integrity, and diversity of scientific communication because it favors only those researchers who are well-funded by the Federal Government and other sources. An unintended consequence of this policy change is the potential to stall innovation, harm a strong U.S. export industry, cause additional job losses at a time when the U.S. can ill-afford it, and hinder economic growth. If the integrity of thorough peer review and well-honed publishing processes are disrupted, harm can be done to human health and welfare. The current policy protects American competitiveness, exports, and the balance of trade by ensuring that all countries that want to use the results of U.S. funded research pay a fair share through subscriptions. Making this information freely and immediately available to competitor nations would seemingly put OSTP in direct conflict with the Administration's priorities in advancing American leadership in IP and international trade and supporting U.S. industries. America has benefited greatly from 75 years of global scientific leadership, let's not cede that leadership to others.

Barriers to Effective Communication of Research Outputs

We strongly support the progress of science by producing and broadly disseminating the highest quality journals, and this requires continued investment in our publishing program. Federal agencies currently require that peer-reviewed manuscripts be made freely available online—within one year of publication—if they discuss research funded at least in part by a government grant.² This policy represents a significant compromise that balances our shared goals of providing broad access with the need for our organization to recoup the substantial investments we make in the peer-review, editing, tagging, curations, publication, distribution, and long-term preservation of these articles. Importantly, this compromise reflects Congress' guidance (in the authorizing legislation for the current policy) that the Administration must “take into consideration the role that scientific publishers play in the peer review process in ensuring the integrity of the record of scientific research, including the investments and added value that they make.”³

ACS is currently deeply engaged in efforts to respond to the COVID-19 pandemic. We have made our published articles on this and related topics freely available even before OSTP had asked scholarly societies do so.⁴ Our staff summarized the current state of research and published two review articles that analyze existing therapeutics⁵ and COVID-19 detection.⁶ The first of these papers has already been

²These policies were developed pursuant to OSTP's requirement that agencies “shall use a twelve-month post-publication embargo period as a guideline for making research papers publicly available . . .” See OSTP Memorandum on “Increasing Access to the Results of Federally Funded Scientific Research” (Feb. 22, 2013).

³ America COMPETES Reauthorization Act of 2010, Section 103(b)(9), *available at*: <https://www.congress.gov/111/plaws/publ358/PLAW-111publ358.pdf>.

⁴ The ACS collection can be accessed at <https://axial.acs.org/2020/03/25/chemists-covid-19-coronavirus/>. This collection is updated continuously.

⁵ <https://pubs.acs.org/doi/10.1021/acscentsci.0c00272>

⁶ <https://pubs.acs.org/doi/10.1021/acscentsci.0c00501>

downloaded over 265,000 times – within the first nine weeks of publication. We are working with the WHO to expedite peer review on all submissions that are of urgent concern to the fight against COVID-19. ACS is a strong supporter of efforts like these, noting that we have also made information pertaining to the fight against the Zika virus freely available to the community.

ACS envisions a more open future, driven by APC-supported gold open access, and we strongly believe that a mixed subscription and gold OA economy will best serve the needs of our scholars. We have been a strong proponent of OA for many years and have made significant investments to advance OA for our researchers:

- We have created and borne the considerable costs of launching and sustaining a high-prestige OA journal and a community-centered APC-funded OA journal;
- We have made all our other journals hybrid-OA publications and provided millions of dollars of credits to stimulate authors to publish OA in our journals;
- We have invested in back office technology to align author metadata with institutional offset and OA agreements to significantly simplify OA transactions and increase uptake; and
- We conceived and today provide the majority of funding to run the Open Science preprint server *ChemRxiv* at no cost to researchers who deposit or read preprints.

While the avenues to broadly communicate research results in the form of journal articles are many and varied, access to data and software code underlying those results is much less well-developed; we agree that data and code developed by U.S. government funded researchers in the performance of research should be accessible for review. Today, standards for reporting data are either not in wide use or have not yet been developed, and policies mandating availability of code or data are inconsistent. However, the storage of data and the management of metadata is often complex and difficult for researchers to understand. We shouldn't expect our researchers to be data management experts. Rather, we support the wider adoption of the "FAIR Guiding Principles for scientific data management and stewardship"⁷ which has already gained some community traction. There will be costs associated with ensuring the quality and integrity of data and code as well as making it accessible, usable, and available for the long term. Without adequate funding, however generated, to support these activities, it is unlikely they can be sustained.

Enhanced Access to Research Outputs

ACS supports OSTP's desire to make the results of taxpayer-funded research more broadly accessible, and there are significant mechanisms to accomplish this goal that align to the existing and established 2013 federal policy.

Providing broader accessibility to already publicly available research grant progress reports is one such avenue. These reports are already created and submitted by grantees at regular intervals so they represent no new burden on the researcher to comply with policy. In addition, they present an up to date representation of the federally funded research, providing the public with the most recent, though not peer reviewed, scholarly advances. While progress reports provide needed access to results of federally

⁷ <https://www.nature.com/articles/sdata201618>

funded research, we believe providing fully-funded access to the peer reviewed, published version of record is of most benefit to the community.

As noted above, ACS has gone to great effort to provide easy avenues for researchers to make the version of record available, but author demand has been limited. Some sources have estimated that only 24% of federally-funded researchers have used funds to pay for gold OA; we are curious why this figure is not higher. It could be that authors are unaware that grant funds can be used to pay APCs, the grants do not include clear additional funding for Article Publication Charges (APCs), or that they find that payment systems are too cumbersome, among other possibilities.

We have also observed that as German researchers and funders have moved to make their research OA, significant confusion has arisen for researchers because of the complexity of delivering the goal. There are many policies and processes to be implemented in order to shift appropriate OA funding to research intensive institutions that produce much of the German research output. If the U.S. moves in a similar direction, we should heed these lessons and ensure that feasible workflows are in place so that the progress of scientific discovery is not slowed.

We also note that if the federal government unilaterally mandates the immediate open availability of articles that report on federally funded research through a gold OA route, while maintaining the same level of funding for the undertaking of the research itself, it would require significantly more funds than are currently available and assigned to researchers. Current research grants do not specifically accommodate this additional and not insignificant cost; a factor OSTP will need to address as part of any policy change and budget allocation process. For context, it has been estimated that some 224,000 articles reporting on federally funded research are published each year.⁸ The additional cost to the federal government to fully fund gold OA for these articles is estimated to be at least \$6 billion over 10 years⁹.

To avoid these pitfalls and to take a scientific approach to determine a workable solution, we welcome the opportunity to engage with OSTP to develop pilots to promote greater uptake of gold OA with sustainable investment from all parties. As scientists, we strongly support developing and undertaking experiments to help guide federal policy makers in sound decision making.

ACS actively supports public accessibility of data and code resulting from federally funded research. We have liberal data reuse policies for each of our publications, and we have provided free access to supplementary information accompanying journal articles for nearly a quarter century. ACS is an active participant in the STM 2020 Research Data Year.¹⁰ As an example, we are planning to announce our support for FAIR sharing in the coming months.

We are active partners for many progressive activities, and suggest that a public-private pilot developed jointly will provide ample information to determine the most suitable ways to provide sustainable access to data and code resulting from federally funded research.

⁸ Estimates emanating from the Scopus® database for articles published in 2018.

⁹ Based on average Article Publication Charge (APC) of \$3,000

¹⁰ <https://www.stm-researchdata.org/>

American Competitiveness

America has benefited greatly from 75 years of global scientific leadership. The technological developments that have sprung from this position have placed the U.S. in an unparalleled and enviable position. Implementing a zero-embargo policy would seemingly put OSTP in direct conflict with the White House's priority to promote and foster U.S. IP and improve the U.S. balance of trade. The proposed policy also runs counter to the Administration's priorities to streamlining government efforts and reducing Administrative burdens. It is also at odds with Administration goals of fostering innovation in the private sector and partnering with the private sector in the advancement of research. This new policy transfers costs from a well-functioning private sector global marketplace to the U. S. taxpayer.

Reducing or eliminating the current one-year embargo could significantly jeopardize ACS' ability to invest in producing the high-quality peer-reviewed journals on which our readers in the broad chemistry community rely. Furthermore, such a policy could directly result in a reduction of either the quantity or quality (or more likely, both) of peer-reviewed journal articles produced by organizations like ours. This would not only be harmful to the research enterprise, it would also be harmful to the scientists, business leaders, medical professionals and the American public who are the ultimate beneficiaries of the scholarly journals we produce.

At this moment in time, it is also worth noting the potential impact an OSTP policy change would have when many societies are concurrently managing the impact of the COVID-19 health crisis on the welfare of staff and our service to science. Given this current destabilizing environment we respectfully request that as part of your planned follow-up to this RFI you openly share more information about the next steps and reflect on the 2020 environment as it applies to not-for-profit societies and their support for the research publishing ecosystem.

In summary, we urge you to consider engaging in public-private pilots to encourage the uptake of gold OA in order to provide broad access to the results of federally funded research. The path can be multifaceted and determined from the results of these pilots. Through these pilot activities we can jointly identify the appropriate pace for all parties to migrate from the current environment to the new one. ACS looks forward to working together to identify thoughtful and concerted solutions that advance the goals of open science without undermining the communication of high quality research findings through peer-reviewed journals.

Thank you again for the opportunity to submit these comments.

Sincerely,



James Milne Ph.D.
President, ACS Publications



May 6, 2020

via e-mail

Lisa Nichols
Assistant Director for Academic Engagement
Office of Science and Technology Policy
publicaccess@ostp.eop.gov

Re: Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research

Dear Ms. Nichols,

Authors Alliance welcomes the opportunity to respond to this request for information on Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research.¹ Authors Alliance is a nonprofit organization with the mission to advance the interests of authors who want to serve the public good by sharing their creations broadly.² We create resources to help authors understand and enjoy their rights and promote policies that make knowledge and culture available and discoverable.

We strongly support removing price and permission barriers to access the results of federally funded research because doing so:

- Is consistent with most scientific authors' wishes;
- Supports learning, teaching, research, and practice; and
- Creates a more hospitable environment for scientific advancement.

For these reasons, the Office should pursue policies that would make the results of all federally funded research immediately available for the public to freely access and use.

¹ Request for Information: Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research, 85 Fed. Reg. 9488 (Feb. 19, 2020).

² For more information about Authors Alliance, see Authors Alliance, *About Us*, <https://www.authorsalliance.org/about/>.

I. Making federally funded research freely and immediately available under a public license is consistent with most scientific authors' wishes.

Many Authors Alliance members are scientific authors who rely on federal dollars to fund their research. They are incentivized by the desire to advance scientific understanding, a goal that is supported when their research results are readily available for potential readers to find, access, and use. Immediate and free online availability, together with reuse permissions, increases their works' visibility, helping them to reach a much larger audience and advance scientific understanding.

However, without a federal policy, many authors do not have the bargaining power necessary to demand from publishers the level of access they want for their research. To address this disconnect while maximizing access and usability, federal policy should require:

- That the results of all federally funded research be made immediately available, with a zero-embargo policy. The current twelve-month embargo period allows for an unnecessary delay that hinders the progress of knowledge.
- That scholarly publications resulting from federally funded research be made publicly available under a Creative Commons Attribution (CC-BY) license.³ Licensing scholarly publications under a CC-BY license removes permission barriers that could otherwise prevent other researchers and the general public from fully accessing, sharing, and reusing scholarly publications.
- That data resulting from federally funded research be made available and dedicated to the public domain using a CC0 license.⁴ When data are readily available in the public domain, other researchers and the general public are able to validate, replicate, and build on previous research.

II. Removing price and permission barriers supports learning, teaching, research, and practice.

Authors understand that the value of federally funded research is maximized when other researchers, practitioners, students, teachers, and the general public are able to freely access and use the scholarly publications, data, and code resulting from the research. Unfortunately, because scientific authors are typically asked to assign or exclusively license their copyright to publishers that publish research results in prohibitively expensive subscription-based journals, many would-be readers are unable to access those results.

³ For more information about Creative Commons licenses, see Creative Commons, *About the Licenses*, <https://creativecommons.org/licenses/>.

⁴ For more information, see Creative Commons, *CC0*, <https://creativecommons.org/share-your-work/public-domain/cc0/>.

While access issues may be especially acute in low- and middle- income countries, even individuals at U.S.-based institutions may find that their libraries do not have the resources to subscribe to relevant journals in their fields.⁵ Many university libraries spend over half of their journal budgets on subscriptions to Elsevier, Springer, and Wiley alone, while other libraries cannot afford these subscriptions at all.⁶

Outside of academic settings, medical patients and their doctors and family members have especially compelling needs for immediate access to the results of federally funded research. When federally funded research is trapped behind paywalls, even for twelve months, many who could otherwise use the results to advance learning, teaching, research, and practice are excluded from putting the research to these productive uses.

III. Removing price and permission barriers maximizes the government's investment in scientific research by creating a more hospitable environment for future scientific advancements.

Placing the results of the government's investment behind a paywall—even temporarily—significantly undermines the purpose of federal research grants and hinders the pace of scientific discovery and innovation by limiting who is able to access and build upon research results. Because the U.S. government spends over \$60 billion annually to make this research possible, it should maximize that investment by ensuring that the public may freely and immediately access and use it.

Making the outputs of federally funded research immediately available would accelerate the pace of scientific discovery. For example, the recent free and immediate exchange of COVID-19 research has played a key role in understanding the novel virus.⁷ Scientific authors and scientific progress have benefited from the unprecedented level of data sharing as they work in tandem to compile stronger and more accurate data sets, debunk misinformation, and perhaps even forge a quicker path to a vaccine.⁸

Removing access barriers in *every* scientific field would likely provide similar public benefits. If research for other serious health conditions—such as cancer, heart disease, or Alzheimer's—were treated with the same urgency, researchers would more readily be able to collaborate, test, and build upon each other's research, accelerating the pace toward

⁵ See, e.g., Ian Sample, *Harvard University says it can't afford journal publishers' prices* (April 24, 2012), <https://www.theguardian.com/science/2012/apr/24/harvard-university-journal-publishers-prices>.

⁶ See Heather Joseph on Behalf of SPARC Coalition, *SPARC White House Letter* (December 20, 2019), <https://sparcopen.org/wp-content/uploads/2020/01/SPARC-White-House-Letter-1.pdf>.

⁷ Klint Finley, *Data Sharing and Open Source Software Help Combat Covid-19* (March 13, 2020), <https://www.wired.com/story/data-sharing-open-source-software-combat-covid-19>.

⁸ Michael Hiltzik, *COVID-19 could kill the for-profit science publishing model. That would be a good thing* (March 3, 2020), <https://www.latimes.com/business/story/2020-03-03/covid-19-open-science>.

cures. Our members have long recognized the value that immediate, barrier-free access presents to all kinds of researchers because it enables them to incorporate new findings into their own studies more rapidly. According to Authors Alliance member and advisor Michael Eisen, “this should be the default for all science, not just COVID-19 science, and it should have been the default for the past 25 years.”⁹

* * *

In sum, many Authors Alliance members rely on federal dollars to fund their research and want the results to be freely and immediately available to the public. Potential readers may then readily find and access those results without being turned away by prohibitively expensive subscription-based paywalls. Immediate and free online availability increases their works’ visibility, helps their works reach a much larger audience, accelerates the pace of scientific innovation, and expedites life-saving discoveries based on their works. Accordingly, we strongly support removing price and permission barriers to access for federally funded research.

Respectfully submitted,



Brianna L. Schofield,
Executive Director
Authors Alliance

brianna@authorsalliance.org

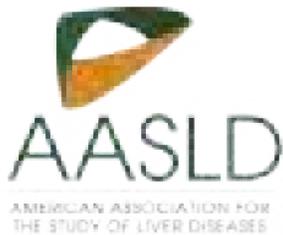


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⁹ Klint Finley, *Global Officials Call for Free Access to COVID-19 Research* (March 13, 2020), <https://www.wired.com/story/global-officials-call-free-access-covid-19-research>.



May, 6 2020

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Response to OSTP Request for Information – FR Doc. 2020-06622 – “Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research”

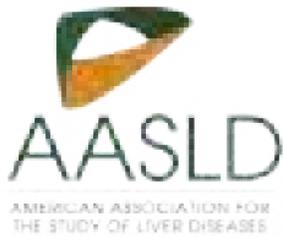
Dear Dr. Droegemeier,

The American Association for the Study of Liver Diseases (AASLD) is grateful for the opportunity to respond to this Request for Information. In particular, we write to caution OSTP against adopting a policy mandating the free distribution of peer-reviewed manuscripts earlier than one year after publication.

AASLD was founded in 1950 and is the only medical society in the United States focused solely on the liver. The mission of AASLD and its more than 6,700 members is to prevent and cure liver disease. AASLD's membership encompasses all professionals dedicated to hepatobiliary discoveries and patient care and one of our core values is the sharing of knowledge.

The four journals AASLD publishes are a necessary vehicle for sharing scientific discoveries that ultimately benefit patients with liver disease and the wellness of all US citizens. Our flagship journal *Hepatology* is an important benefit for AASLD members and subscription-based for non-members, along with *Liver Transplantation* which serves our members dedicated to the care of the sickest patients with liver disease before and after transplantation.

Our two newest journals are *Hepatology Communications*, which is an Open Access journal and available to all and *Clinical Liver Disease (CLD)*, a multimedia review journal that anyone can access. We developed *CLD* to serve the liver community nationally and internationally and to educate health care providers on clinical advances in our specialty, typically translating the discoveries originally reported in our other three journals to clinical practice in the widest audience possible.



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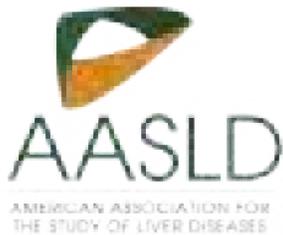
Ultimately, we strive to support the progress of science by producing and broadly disseminating the highest quality peer-reviewed journals possible. Publishers and societies have worked to strengthen scholarly communication and promote open science. However, it is critical that these efforts take place within a framework that respects intellectual property rights and our ability to invest in high-quality publications, and that does not hinder researchers from communicating their discoveries.

AASLD is currently deeply engaged in efforts to respond to the COVID-19 pandemic. We have published and updated on our website “Clinical Insights for Hepatology and Liver Transplant Providers During the COVID-19 Pandemic” to mitigate the impact of the pandemic on liver patients and health care providers. We have also fast tracked and published reports that provide insight into clinical presentation, treatment, and outcome of affected population, making these reports readily and freely available to all.

We are concerned that OSTP’s significant new regulatory proposal is a distraction from our ongoing efforts to respond to the current crisis and would undermine our stability and undercut our ability to respond to future health crises. As you are aware, federal agencies currently require that peer-reviewed manuscripts be made freely available online—within one year of publication—if they discuss research funded at least in part by a government grant.¹ This one-year compromise contrasts with the length of a full copyright term of life-of-the-author plus 70 years. Importantly, this compromise reflects Congress’ guidance (in the authorizing legislation for the current policy) that the Administration must “take into consideration the role that scientific publishers play in the peer review process in ensuring the integrity of the record of scientific research, including the investments and added value that they make.”² This policy represents a significant compromise that balances our shared goals of providing broad access with the need for our organization to continue the substantial investments we make in the peer-review, editing, publication, distribution, and long-term stewardship of these articles. We maintain the entire infrastructure to process and select the material reported in our journals to provide readers with a concise method for staying current on the latest discoveries in liver disease and a reliable source of clinical information that empowers clinical providers to provide the best care for patients with liver disease. This peer review structure, as well as the professional staff that ensure the timeliness and accuracy of our journals, is funded directly by AASLD

¹These policies were developed pursuant to OSTP’s requirement that agencies “shall use a twelve-month post-publication embargo period as a guideline for making research papers publicly available . . .” See OSTP Memorandum on “Increasing Access to the Results of Federally Funded Scientific Research” (Feb. 22, 2013).

²America COMPETES Reauthorization Act of 2010, Section 103(b)(9), *available at*: <https://www.congress.gov/111/plaws/publ358/PLAW-111publ358.pdf>.



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Chicago, IL

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Matthew R. D'Uva, FASAE, CAE

Reducing or eliminating the current one-year embargo would significantly jeopardize our organization's ability to invest in producing the high-quality peer-reviewed journals that our readers in the hepatology community rely on. In so doing, such a policy would contravene Congress' clear guidance to take our role and investments into consideration. Furthermore, such a policy would directly result in a reduction in either the quantity or quality (or more likely, both) of peer-reviewed journal articles produced by hundreds of organizations like ours. This would not only be harmful to the research enterprise; it would also be harmful to the medical professionals and patients who are the ultimate beneficiaries of the scholarly journals we produce.

We urge you not to disrupt our ability to support the advancement of research and patient care in hepatology and liver transplantation, and we look forward to working together to identify solutions that advance the goals of open science without undermining the communication of research findings and analyses through peer-reviewed journals.

Thank you again for the opportunity to submit these comments.

Sincerely,

Jorge A. Bezerra, MD, FAASLD
AASLD President

March 17, 2020

To: Lisa Nichols, Assistant Director for Academic Engagement, OSTP
RE: RFI Response: Public Access

Thank you for the opportunity to comment on the “**Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research**”. We are Indigenous and allied scholars affiliated with the Global Indigenous Data Alliance (GIDA), the US Indigenous Data Sovereignty Network (USIDSN), the Te Mana Raraunga Maori Data Sovereignty Network (TMR), and ENRICH, the Equity for Indigenous Research and Innovation Coordinating Hub. These entities advocate for Indigenous rights and interests in Indigenous data and provide practical tools and mechanisms that support Indigenous control of Indigenous data. Along with a broad range of stakeholders, we have been working to make changes to data policies and practices that enhance Indigenous control of data, enrich metadata and establish provenance standards for Indigenous data. Much of this work is part of operationalizing and implementing the **CARE Principles for Indigenous Data Governance**: Collective benefit, Authority to control, Responsibility, Ethics (gida-global.org/care). These Principles, developed and released in 2019, promote a new paradigm of responsibility, equity and transformative change in the production, research, collation, storage and distribution of Indigenous data. They currently set the international standard for rights and governance of Indigenous data.

Public and open access communities have a significant role in the success of operationalizing the CARE Principles. The list below of desired characteristics for public access to peer-reviewed scholarly publications, data and code resulting from federally funded research is important for need to be considered in public access policy and practice.

1. **Development of New Guidelines on the Collection of Indigenous Data in Federally Funded Research.** There are currently no Guidelines on the collection and storage of Indigenous data through federally funded research. This means that researchers have limited direction and support about ethical and responsible practices when collecting Indigenous data, and, therefore, also when depositing and storing Indigenous data in repositories. Moreover, repositories also have limited guidance in the care and management of Indigenous data. This has inevitable consequences for the future use and circulation of Indigenous data. These new guidelines need to address differentiated privacy issues alongside ownership and control of Indigenous data. These Guidelines must follow current international standards for data and Indigenous data - namely - the FAIR principles and the CARE Principles for Indigenous Data Governance (gida-global.org/care).
2. **Supporting Enhanced and Replicable Integrity in Research Practice.** To address barriers that historically have impeded ethical and responsible research practices, research agencies need to foster a culture of integrity and trustworthiness. Scientific discovery hinges on data analytics, but data systems are rife with biases and encumbrances that inhibit the ethical conduct of science. Indigenous data sovereignty draws on the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) that reaffirms the rights of Indigenous Peoples to control data about their peoples, lands, and resources. Indigenous data governance enacts those rights through mechanisms

grounded in Indigenous rights and interests that promote ethics and equity, while providing a framework for addressing deeper historical issues associated with barriers for underrepresented communities and knowledge systems. The ‘CARE Principles for Indigenous Data Governance’—Collective benefit, Authority to control, Responsibility, and Ethics—enhance and extend the ‘FAIR Principles’ for data findability and reuse—Findable, Accessible, Interoperable, Reusable—by centering equity and ethics as core guiding principles alongside those set out by FAIR. These concepts form a basis for normative standards for collective data rights that impact research agendas for data privacy, future use, reuse, and data stewardship. The CARE Principles provide an international standard in exercising Indigenous rights for the governance of Indigenous data. Operationalizing the CARE Principles require (a) upholding tribal self-determination by requiring adherence to tribal codes, IRBs, guidelines, etc.; (b) enacting repository policies for Indigenous data; and (c) using tools such as metadata, labels, and collection notices to enhance transparency and integrity.

3. Access to Reliable and Supported Training that Addresses Indigenous Data Governance.

There is currently no supported or reliable training offered to researchers around Indigenous data governance. Training creates the opportunity for increased knowledge around Indigenous data governance and the possibility of the extension of best practices for Indigenous data. Directed training in specific science and research areas - for instance, genomic sciences, health sciences, environmental sciences - can support better engagement in the collection of Indigenous data, including increased reliability for using Indigenous data owing to proper attention to issues of provenance. Training through webinars can be an effective means for increasing researcher knowledge and supporting Indigenous community engagement with researchers. Training can also help build trust between historically unequal parties in the research process.

4. Requirement for Community Consent for Data Sharing and Public Access.

Internationally, the CARE Principles for Indigenous Data Governance define the relationship of Collective benefit, Indigenous Authority to control, Responsibility, and Ethics to engagement with and secondary use of Indigenous data. The CARE Principles reflect the crucial role of data in advancing Indigenous innovation and self-determination by focusing on people and purpose-oriented standards to be used with mainstream data guidelines. The *All of Us* Tribal Collaboration Working Group (TCWG) Report recognizes the need for “greater input and oversight by tribal communities on data and biospecimens policies, beyond those for other groups.”¹ The report marks out regulations on data access as well as on secondary uses of specimens and data as warranting particular compliance. Domestically, within tribal codes some tribal claims of ownership over specimens and data are made in the context of broader statements about tribal sovereignty. For example, the Mandan, Hidatsa, and Arikara Nation Research Code includes a general principle of prior rights that recognizes, among other rights, “proprietary rights and interests over... all knowledge and intellectual property” associated with their resources. Similarly, the United Houma IRB Ordinance codifies the rights of the Tribe, “as a self-governed and self-determined people”, to “all data and information generated and produced by ... research” conducted in the community. Other

¹ Tribal Collaboration Working Group, *All of Us* Research Program Advisory Panel (April 2018). “Considerations for Meaningful Collaboration with Tribal Populations” [“TCWG Report”], 16. Available at https://allofus.nih.gov/sites/default/files/tribal_collab_work_group_rept.pdf.

codes couch the Tribe's claim to ownership of specimens and data in narrower terms (e.g., Pascua Yaqui Tribe, Confederated Tribes of Siletz, Sisseton Wahpeton Oyate), while others stress the need for researchers to respect those claims (e.g., Akwesasne community, Cherokee Nation). Tribal code provisions, TCWG Report observations, and the rise of the Indigenous data sovereignty movement demonstrate a need not only to recognize tribal rights and interests in their data but also to respect tribal authority to control such data. Existing and emerging tribal data governance and policy frameworks are informing the expectations of other governing bodies and institutions regarding implementation of data identifiers in resources such as biological specimens and health data. Those working with tribal data are responsible for ensuring that the creation, interpretation, and use of those data uphold and remain respectful of tribal Nations' sovereignty, rights, and interests. Policies and practices for depositing tribal data and code into public access repositories must adhere to tribal rights to control those data, regardless of whether or not the tribe currently has written policy or practice guidance. To uphold these rights in potential future uses and to minimize future harm while maximizing future benefits, metadata should acknowledge purposes, limitations, or obligations regarding secondary use, including issues of consent and prior engagement.

5. **Requirement for Community Consent in Publication of Indigenous Research.**

Based on a history of exploitative research with Indigenous communities, the ability of Tribes to review inaccurate, harmful, or stigmatizing information before publication or dissemination is crucial both to preventing the misuse of their data and to supporting sound scientific practice. Most tribal research codes show that this right to pre-publication review is a condition for application approval and is often part of the research agreement signed by successful applicants. Researchers who fail to comply risk losing IRB approval and may face other sanctions. The avenues of publication and dissemination covered under pre-publication review include manuscripts for scholarly articles, theses, and dissertations as well as abstracts or content intended for conferences and other presentations. Criteria for review vary among the tribes surveyed and typically include a mix of form and content. For example, the Chickasaw Nation's review body assesses manuscripts for "technical content and validity, organization of content, general readability, adherence to established policy, and assurance that the publication is high quality", but also checks whether "publications represent the Chickasaw Nation without unfair stigma or harm to the [Nation's] overall community, culture, or heritage." Similarly, the Colorado River Indian Tribes' review board ensures that material considered "sacred" or "inaccurate" is removed or addressed, in addition to content judged to be "in violation of CRIT's intellectual property rights." The Confederated Tribes of Coos, Lower Umpqua and Siuslaw Indians take their review a step further, reserving the right to require inclusion of the Tribes' official responses in materials approved for publication.

6. **Clarification on the Limits of IP (Copyright and Patents) for Indigenous Control of Indigenous Data.**

The current IP system treats Indigenous interests in harmful ways. Historically it has promoted Indigenous culture and relevant collected data to be open and available to all. This approach has led to the disclosure of valuable and secret cultural information, the widespread appropriation of Indigenous Knowledge and cultural forms, and the derogatory treatment of Indigenous culture through a failure to appreciate and respect nuances in forms of sharing and use of knowledge. These problems extend into

the sciences and Indigenous data. Copyright and patent law continue to exclude Indigenous interests, and this means that license agreements, or other control mechanisms, tend to be unfairly biased against Indigenous interests. We recommend that clarification on these limits of the law are made for all those researchers working with and collecting Indigenous data in order to make Indigenous rights clear and to support informed decision-making at every level of the research process.

7. **Commitment to Free, Open Access to Indigenous Publications for Indigenous Tribal Use**

Given treaty and trust responsibilities, as well as the inherent rights of tribes, the federal government must commit to free, open access to (1) publications by, with, and for Indigenous Peoples and nations and (2) in general, Indigenous nations' access to publicly funded research. Tribes are significantly affected by not having open access to scholarship that provides critical information and that can be used in support of governance and tribal decision-making. The federal government has a responsibility to tribes to guarantee free access to research for tribal use.

8. **Promotion and Adoption of Tools that Support the Application of the CARE Principles - the TK (Traditional Knowledge) and BC (Biocultural) Labels and Notices System**

The TK and BC Labels and Notices System has been developed to support Indigenous interests in the documentation of Indigenous knowledge and in the production of Indigenous data, especially in contexts of governance, decision-making, provenance and control. Within this system, the TK and BC Notices have been designed as specific tools for researchers to help promote transparency and integrity in the collection and management of Indigenous data. For instance, the TK & BC Notice system allows a researcher to fix a Notice to specific data *as additional metadata* when they know or have reason to believe that there are specific, or underlying, Indigenous interests that will need attention and engagement into the future. As a distinct mechanism both for researchers and data repositories, these Notices allow researchers to apply CARE Principles in their practice. We recommend that Federal science and health funders make recommendations to researchers to use these tools when researchers are addressing the rights, ethics and data sections of their grant applications. See <https://www.youtube.com/watch?v=s18DaM6TXHE>

9. **Development of new Provenance Standards for Indigenous data.** Indigenous data lacks clear and proper provenance. This affects how Indigenous data can be used now and into the future. With no standards, including metadata fields, that support Indigenous provenance, there is a real danger that Indigenous data within repositories will remain impoverished and unusable by Indigenous peoples and by collaborating researchers. Tracking full provenance enables possible reuse of existing datasets in new research. Full provenance is also important as it enables the original funders, communities, researchers and institutions that enabled the creation of any source dataset to have identity, attribution and rights of association where this is determined to be suitable and appropriate.

In addition to the specific desirable characteristics indicated above, GIDA, USIDSN, TMR, ENRICH, and other entities have been collaborating with scientific and research repositories to define and develop leading practices. We hope that these draft guidelines recognize and

complement this effort and that they remain sufficiently adaptable as leading practices continue to develop.

Thank you again for the opportunity to provide comments.

Best regards,

Stephanie Russo Carroll

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Associate Director, Native Nations Institute, University of Arizona

Chair, Global Indigenous Data Alliance

Co-Founder, US Indigenous Data Sovereignty Network

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**SPARC Response to Federal Register Request for Information 85 FR 9488:
Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting from
Federally Funded Research.**

Submitted on behalf of SPARC (The Scholarly Publishing and Academic Resources Coalition) by Heather Joseph, Executive Director, SPARC, May 6, 2020

I am writing today on behalf of [SPARC](#) (the Scholarly Publishing and Academic Resources Coalition), a membership organization of more than 240 academic and research libraries promoting the expanded sharing of scholarship in the networked digital environment. We thank the Office of Science and Technology Policy for your efforts to convene a substantive discussion on the importance of ensuring broad public access to the results of federally funded research.

Question # 1 “What current limitations exist to the effective communication of research outputs (publications, data, and code) and how might communications evolve to accelerate public access while advancing the quality of scientific research?”

Scientific research is critical to the well-being of society. The U.S. government annually invests ~\$65 billion in taxpayer dollars into research, with the expectation that the results will be made widely available in order to speed discoveries, turn breakthroughs into treatments and cures, and improve the lives of the American public.

Yet the reality is that the articles reporting on this research are not widely available to the public. Once the purview of not-for-profit publishers and university presses, scientific journal publishing is now dominated by large commercial companies. Research articles are locked behind expensive journal subscriptions, which routinely cost thousands of dollars per journal – and up to \$50 for temporary access to a single article.

SPARC’s member libraries invest [tens of millions](#) of dollars in journal subscriptions each year to serve the needs of their researchers, faculty, and students, but there is [no library](#) that can even come close to affording access to all of the journals that they are asked to provide. In fact, right now, there is a growing trend towards [canceling commercial journal subscriptions](#), as libraries examine the true value this model provides – and increasingly opt not to support 30-40% publisher profit margins in favor of exploring new, more values-aligned ways for researchers to share their results. The recent decision by the University of California System to cancel its \$11 million Elsevier journal package highlights this trend. In just the past month, the State University of New York (SUNY) System also opted to cancel its \$7 million Elsevier package, and the University of North Carolina and Iowa State University also followed suit.

Access is only part of the problem. Even when researchers can get to them, articles often are not in formats or on platforms where they can be used in the ways that are needed. As our nation's experience with COVID-19 highlights, it is critical for scientists to be able to text mine these papers and use machine learning or AI to fully unlock their value. They cannot perform this kind of analysis when articles are on proprietary platforms and are not in open and machine-readable formats.

The need for better access to the data resulting from taxpayer funded research also must be addressed. The current system makes it routine for scientists to hold onto data for years without sharing it while they wait for papers to be published. Part of this problem is driven by an outmoded incentive system, but part is also driven by the lack of consistent standards. Even when researchers do share data it is often in formats that make it hard to use or lacks the computer code and tools needed to interpret it. Even the data needed to verify or reproduce the results of published articles is often unavailable. This erodes trust in scientific research at a time when it is of particular importance.

Our nation has the opportunity to optimize the system of scientific communication. There is no more compelling illustration of the need for an open system than the current pandemic. As COVID-19 emerged, the very first thing scientists did was rush to make any and all information on the emerging disease openly available. Researchers released the genetic sequence of the virus, posting it in GenBank for their colleagues around the world to access. They began openly sharing preprints, data, code, and other insights through open, online platforms so that anyone could immediately get to work on understanding the disease and start innovating towards testing, treatments, and vaccines.

This unfolded essentially in real time, with one exception. When scientists wanted to access the corpus of previously published scientific papers related to COVID-19, they could not – because no such collection existed. Most of the papers were locked away in individual publisher collections, and access had to be specifically requested by a group of National Science and Technology Advisors from 12 countries – including the U.S. The group [wrote](#):

“A topic of considerable interest is enhancing the ability of researchers and other stakeholders to access and re-use or text-mine all published articles on coronaviruses, SARS-CoV-2, and COVID-19. This timely access is critical, as it allows researchers keep up with the rapidly growing body of literature and identify trends and relevant information in efforts to characterize this novel virus and address the associated global health crisis...Importantly, this information should be in both human and machine-readable format to allow for full text and data mining using artificial intelligence with rights accorded for research re-use and secondary analysis.”

While many publishers stepped up quickly to make their articles openly available, some did not. Some have given only temporary access and will re-paywall content once the coronavirus crisis is deemed passed.

As Americans, we should never again be in a position where the U.S. government does not have ready access to the outputs of the research it has funded on behalf of taxpayers. Articles

reporting on science funded by the U.S. government should always be readily accessible to the public. The results of research funded by taxpayers should not be kept locked behind glass that is only broken in the case of an emergency.

Question #2: “What can Federal Agencies do to make taxpayer funded research results, including peer-reviewed author manuscripts, data, and code funded by the Federal Government, freely and publicly accessible in a way that minimizes delay, maximizes access, and enhances usability? How can the Federal Government engage with other sectors to achieve these goals?”

The federal government should act without delay to implement a strong national policy ensuring that taxpayers receive immediate, barrier-free access to the full results of the scientific research that their tax dollars have funded. In doing so, the Trump Administration can end the needless delays that researchers currently face and provide all citizens with hope that issues that most directly affect them and their families are being worked on with the same urgency and efficiency as the coronavirus.

At minimum, this policy should require:

- All articles reporting on federally funded research and the corresponding data and tools needed to validate their conclusions (software, code, etc.) should be made freely available online to the public immediately upon publication.
- Articles must be made available in open and machine-readable formats that fully enable productive reuse including text/data mining and computational analysis. [Title II of the Foundations for Evidence-Based Decision Making Act](#) provides guidance on this.
- Articles and data should be made available under an open license or be published as part of the worldwide public domain (specifically a Creative Commons Attribution 4.0 International (CC BY) license or similar for articles, CC0 for data).
- A copy of a researcher’s final accepted manuscript or final published article should be made available via either a digital repository maintained by a U.S. federal agency (NIH’s [PubMed Central](#) is a robust, cost-effective option) or in an open, non-proprietary repository designated by the agency that ensures long-term open access to and preservation of these articles.
- Corresponding data and software should be made available via a digital repository maintained or approved by a U.S. federal agency. Further details on the desirable characteristics of such data repositories were submitted by SPARC to OSTP in an earlier submission to this RFI available [here](#).
- All other non-classified data not directly attributable to a publication, including associated metadata, should be made available to the public as soon as possible under findable, accessible, interoperable, and reusable (FAIR) terms and conditions.

We encourage journal publishers to experiment with a variety of business models that support open and equitable access to and participation in science. SPARC and the wider library community have a long history of partnering with publishers to develop innovative business models (including the recent “[Subscribe to Open](#)” model) and collective support models, and we are eager to continue and expand this work.

We ask OSTP to encourage federally funded researchers to utilize platforms that enhance the speed and transparency of scientific communication – including preprint servers and research funder platforms such as [Gates Open Research](#). These platforms are being heavily used by researchers in the fight against the coronavirus, and we encourage OSTP to consider collaborative efforts with private research foundations to support them.

It is important that OSTP continue to explore mechanisms to reward federally funded researchers for openly sharing their research outputs. We applaud OSTP’s commitment to collaborating on this important effort through the recent joint meeting of the White House JCORE group and the National Academies of Science Roundtable on Realigning Research Incentives and believe that this collaboration could play an important role in ensuring the ultimate success of this policy.

As we have seen with COVID-19, time is of the essence. OSTP should establish this policy immediately. For the past 15 years, the U.S. government has moved deliberately and incrementally towards a national policy and has ample experience and data to justify the need for and benefits of final implementation. The U.S. should join the European Union, Canada, and other leading nations that have already established strong national open access policies in order to promote advances in science and technology, encourage innovation and economic growth, and improve the public good.

While the need to establish this policy is urgent, we recognize that it cannot be fully implemented overnight. We recommend a transition period of up to 18 months for stakeholders to prepare implementation plans. SPARC and our member libraries are firmly committed to working with the federal government and all stakeholders to support a smooth and effective implementation process.

We are eager to work with academy-friendly players – particularly scholarly societies – to develop financial risk-mitigation strategies to smooth their transition to providing open access to this content. Libraries are uniquely positioned to do so, as [library dollars account for more than 75%](#) of the average journals subscription revenue, which plays a significant role in supporting the overall operations of many scholarly societies.

Question #3: “How would American science leadership and American competitiveness benefit from immediate access to these resources? What are potential challenges and effective approaches for overcoming them?”

Science sets the pace for economic growth. What starts in the lab ends up in the pharmacy, in the factory, and on the farm. How quickly science progresses directly impacts America’s ability to innovate, and open sharing accelerates the progression of research. As a result, governments around the world are making open the default for their publicly funded

research—directly tying these policies to their national innovation agendas. In this global context, the Administration has the opportunity to bring the U.S. back to the forefront in defining how science will be conducted in the networked digital environment, while simultaneously achieving other key goals such as making research AI-ready.

Openly available research is viewed more frequently, cited more regularly, and built upon more often than closed research. The Human Genome Project provides a powerful case in point, generating an estimated \$965 billion in economic activity on a \$3.8 billion taxpayer [investment](#). This outsized return on research investment was only possible because anyone could build on the results without cost or permission, whether in a corporate lab or a garage.

Conversely, the current delay and difficulty in accessing the results of research negatively impacts businesses, entrepreneurs, patients, and the public – all of whom are eager for the latest science to be translated into materials that the manufacturing sector can use to make tests, treatments, and vaccines.

The move to work openly in order to accelerate COVID-related research affirms the advantage of openness in accelerating research broadly. Researchers are choosing fast, open channels such as preprint servers to share the results of research out as quickly as possible; and some publishers are innovating by creating [new, collaborative mechanisms](#) to provide peer review in as close to real time as possible, while ensuring that rigor and reproducibility remain paramount. Efforts like these provide excellent blueprints for publisher services in a fully open access era.

Through initiatives such as the [Virus Outbreak Data Network](#) (VODAN), the research community is collaborating to make COVID-related data openly available, FAIR-compliant and machine readable, and ready for analysis by research teams around the world. As this transition to open, collaborative, and data-intensive research is accelerated by COVID-19, a strong national open science policy will provide the foundation needed for continued American leadership in science.

Data demonstrates that a repository-based policy can be realized in a cost-effective manner. Representing more than half of the total amount that the U.S. government spends on research, [the NIH has estimated](#) that the cost for making all of its funded articles publicly available through PubMed Central is less than \$5 million per year, only 1/90th of 1% of the NIH's overall budget, with the costs remaining relatively flat over the past decade. By contrast, [recent research](#) has shown that there is already evidence of hyperinflation in the Article Processing (APC) market, with costs nearly doubling over the past decade.

We applaud OSTP's extensive efforts to convene stakeholders in the consultation process while considering a strong national open access policy, and encourage you to continue these efforts throughout the implementation process. We stand ready to collaborate towards ensuring that U.S. federally funded research can achieve the maximum public good.

TO: Lisa Nichols, Assistant Director for Academic Engagement, OSTP

FROM: Greg Raschke, Senior Vice Provost and Director of Libraries, NC State University

DATE: May 6, 2020

RE: [RFI: Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research](#)

These comments are provided on behalf of NC State University. NC State University's research enterprise is broad and interdisciplinary, encompassing, among other areas, a wide range of genomics, health, and life sciences disciplines such as bioinformatics, environmental health science, genetics and genomics, molecular biology, translational regenerative medicine, and all aspects of veterinary medicine. Scholars and researchers from diverse backgrounds collaborate with each other and with public and private sector partners to address a wide range of critical research questions. Librarians at NC State offer consultation and guidance during all phases of the research data lifecycle, from developing data management plans for grant proposals, to consulting on best practices and appropriate infrastructure for data storage and preservation, to optimizing the sharing and discovery of data. We also advise on copyright and intellectual property issues.

We applaud the OSTP's recent efforts to engage with stakeholders on topics such as open science, current policy on public access to the results of federally funded research, the evolution of scholarly communications, and access to data and code. We thank the OSTP for the opportunity to provide feedback and recommendations. In our responses below, we have highlighted several organizations that we recommend as excellent resources in these areas.

Q1: What current limitations exist to the effective communication of research outputs and how might communications evolve to accelerate public access while advancing the quality of scientific research? What are the barriers to and opportunities for change?

A variety of factors currently limit the effective communication of publications, data, and code. Publications resulting from federally funded research are often locked in publisher platforms with ever-increasing costs to rent access to the works through subscriptions or fees. Publications often serve as a point of entry for the data and code that underlie research findings. Lack of open access to these publications restricts visibility of findings and limits reuse of data and code that could further science. One topical example is COVID-19, to which public access to published works is very limited. According to a recent search in Web of

Science on “COVID-19 or coronavirus”, only 54% (7,747 of 14,437) of related published works were openly accessible. Researchers at NC State are actively working on time-sensitive COVID-19 research by mining text across a wide net of published works. They are hitting paywalls to this core of research that is vital to our global response to this pandemic.

Underdeveloped standards for connecting related research outputs (e.g., x code, using y data, published in z paper = XYZ research output) present additional limitations. Inconsistent publisher requirements regarding the inclusion of standard identifiers, such as personal identifiers and identifiers that represent data and code (e.g., ORCiDs, DOIs), also inhibit proper connections between outputs. The current for-profit publishing ecosystem restricts the free flow of publicly funded research. Copyright for published research is often assigned to journal publishers, restricting the author’s ability to share knowledge outside of the higher education industry. Researchers are also pressured by institutions via the promotion and tenure process to publish in only “premier” journals.

Data and code present special challenges. Curating data helps to ensure that data is FAIR¹ to allow both people and machines to understand and reuse it. Best practices for data curation are new and evolving, and the needs vary by discipline, which makes curation difficult for both researchers and those who curate data on their behalf. Individual researchers are limited by a lack of infrastructure, skills, personnel, and time to curate their own data. Without sustainably funded repositories with clear metadata and data standards, and proper resources for data curation, data remain hard to find, access, interpret, and aggregate with similar data. Lastly, there are currently no immediate repercussions for not fulfilling mandated data management or data sharing agreements. For example, the NIH requires a data sharing agreement, but the document does not earn points toward the grant review. Not evaluating the sharing agreement gives the impression that data sharing is not required, which can result in a failure to properly share data and code.

There are a number of ways that communications could and should evolve to accelerate public access while advancing the quality of scientific research. It has been proven that public and open access outputs are used more extensively than materials that are behind a paywall or otherwise unavailable². Therefore, funding agencies should partner with academic institutions, societies, publishers, and other organizations to better understand what policies, guidelines, and infrastructure are needed and commit to supporting these. Publishers should be required to disclose that these outputs from federally funded research are freely available without the need to create an account with a publisher platform. It is also important to note that publications, data, and code are not the only types of research outputs. Tenure and promotion guidelines should evolve to account for many forms of scholarship, such as research summaries provided to journalists, public talks, exhibits, engagement with public issues,

¹ Wilkinson, M., Dumontier, M., Aalbersberg, I. *et al.* The FAIR Guiding Principles for scientific data management and stewardship. *Sci Data* 3, 160018 (2016). <https://doi.org/10.1038/sdata.2016.18>

² The effect of open access and downloads ('hits') on citation impact: a bibliography of studies. Southampton, UK; U of Southampton. 2014. Retrieved from <http://opcit.eprints.org/oacitation-biblio.html>

teaching materials, etc. Federal endorsement for the authority and value of research outputs beyond peer-reviewed publications, data, and code would be a catalyst for necessary cultural change.

A national public access policy, similar to many adopted in European countries³, would provide guidance. Alignment with global movements in the direction of open access would help to advance global connectivity and increase the diversity of voices in research and scholarship.

Q2: What more can Federal agencies do to make tax-payer funded research results freely and publicly accessible in a way that minimizes delay, maximizes access, and enhances usability? How can the Federal Government engage with other sectors to achieve these goals?

Federal agencies should institute a public access policy that requires all published outputs to be released under the least restrictive open license possible; retains authors' rights; waives all article processing charges (APCs) for publications resulting from federal funding; restricts an embargo period to ensure immediate access to published outputs; and includes a mechanism to ensure compliance with such a policy. Federal agencies should also develop dialog with not-for-profit publishers, especially scholarly societies, associations, and university presses, as these academy-led organizations have greater flexibility than multinational publishing conglomerates to address inefficiencies in the system of scholarly production⁴. Additionally, federal agencies should require that all federally funded published research outputs be accessible via computational means (e.g., text mining/content mining) without additional costs to end-users. Free public access to and long-term preservation of outputs should be required via a digital repository maintained by the Federal agency or any repository that meets the criteria that we, and other entities⁵⁶, advocated for in response to OSTP's recent RFI about data repositories' characteristics⁷. Lastly, Federal agencies should endorse the San Francisco Declaration on Research Assessment (DORA)⁸ as a measure to evolve research evaluation from its reliance on journal impact factor.

There are also actions that Federal agencies should take specific to data and code. Federal agencies should provide financial support for institutions to develop and maintain infrastructure for better stewardship of data during the entire research lifespan, as current support is not adequate. There should be measures in place to ensure that data management and data sharing plans are followed, and there should be dedicated training for grant reviewers so they are able to competently evaluate these plans. There should also be stronger alignment across

³ Proudman, Vanessa, Sveinsdottir, Thordis, & Davidson, Joy. (2020, February 27). An Analysis of Open Science Policies in Europe v5 (Version 5). Zenodo. <http://doi.org/10.5281/zenodo.3689450>

⁴ Wise, Alicia; Estelle, Lorraine (2019): Society Publishers Accelerating Open Access and Plan S - Final Project Report. figshare. Online resource. <https://doi.org/10.6084/m9.figshare.9805007.v1>

⁵ SPARC and COAR Submit Joint Response to White House RFI on Research Repositories

⁶ [ARL Responds to US OSTP Request for Comments on Desirable Characteristics of Repositories](#)

⁷ [Document Citation 85 FR 3085](#)

⁸ <https://sfdora.org/>

Federal agencies regarding a standard set of data sharing requirements so it is easier for researchers to meet requirements.

Data should be deidentified when possible to facilitate data sharing; training is required to instruct researchers how to do so. There are also no clear guidelines on how to share “big data”. Though a small number of disciplinary associations and organizations are working to address guidelines and infrastructure needs for handling “big data” for their fields (e.g., American Geophysical Union⁹), Federal agencies should provide support for this work. Funding should be given to researchers to cover costs of data curation and data deposit fees for repositories. Funding agencies should also support work to develop an open, robust, sustainable mechanism to aggregate data across repositories. The Federal agencies would benefit from collaborating with those in the field focused on research data curation (Data Curation Network¹⁰ and Research Data Alliance¹¹) and those working to promote and implement FAIR (e.g., GOFAIR¹²¹³).

Lastly, standards should be implemented for establishing attribution for contributions made to generating and analyzing data and writing and vetting code to enable proper credit, like the CRediT Taxonomy that is implemented by the broad research community, including: Cell Press, Elsevier, Springer Publishing Company, Clarivate Analytics, Gates Open Research, and more¹⁴. Federal agencies should support those developing and implementing standards for data citations, such as the partners for the Make Data Count project¹⁵¹⁶.

Q3: How would American science leadership and American competitiveness benefit from immediate access to these resources? What are potential challenges and effective approaches for overcoming them?

American science leadership is currently behind the curve in providing public access to research, despite early action through the NIH Public Access policy. Latin America, Europe, and some African nations are quickly outpacing the US in increasing access to their research output.¹⁷¹⁸¹⁹ Requiring immediate access to resources generated from publicly funded research would increase our competitiveness in a global market for well-qualified researchers, as increased access to research is an important recruiting tool. It would also allow innovators and entrepreneurs in affiliated industries to build from academic work, increasing the efficiency of public/private partnerships and demonstrating the value proposition of publicly funded research. Contributing to the global knowledge economy as a trusted and valued partner will

⁹ <https://www.agu.org/>

¹⁰ Data Curation Network: <https://datacurationnetwork.org/>

¹¹ Research Data Alliance: <https://www.rd-alliance.org/>

¹² RDA's FAIR Data Maturity Model: <https://www.rd-alliance.org/node/60731/outputs>

¹³ GO FAIR USA: <https://www.go-fair.org/go-fair-initiative/go-fair-offices/go-fair-usa-office/>

¹⁴ CASRAI CRediT: <https://casrai.org/credit/>

¹⁵ California Digital Library, DataCite, DataONE: <https://makedatacount.org/history/>

¹⁶ RDA's Data Usage Metrics Working Group: <https://www.rd-alliance.org/groups/data-usage-metrics-wg>

¹⁷ AmeliCA: <https://sparcopen.org/our-work/innovator/amelica/>

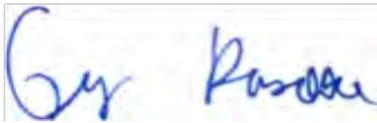
¹⁸ Ec.europa.edu: [News, events, publications related to Open Science](#)

¹⁹ DOAJ: [Overview of the African Open Access Landscape, with a Focus on Scholarly Publishing](#)

engender goodwill for the American science community, and continue to fortify our leadership in many fields. Lastly, aligning US policies for open science and open access to research outputs with the policies of our international partners will lead to more innovation.

The challenge of competition, particularly with research-forward nations like Germany, China, and India, can be overcome through public access by increasing the pace of scientific progress across national boundaries, establishing collaborations rather than contests, and increasing the multidisciplinary affordances of research to solve global problems. If more people can access scientific research, then collaborations within the US and globally will be more easily fostered. Collaborations around open resources also provide a diversity of viewpoints and opinions on academic knowledge, opening up a broader set of stakeholders. Internal assessment has found that when NC State University research involves international collaborators, there is a two-fold citation impact vs. domestic collaborators, and a four-fold citation impact vs. solo research.

Declining public trust in institutions like government and higher education is a major challenge. Increased public access to research outputs will allow the American public to see the tangible advancements from some of our nation's brightest minds, and will offer the public the ability to engage with the works on their own terms.

A handwritten signature in blue ink, appearing to read "Guy Roscoe". The signature is written in a cursive style and is contained within a thin black rectangular border.



American Society for
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May 6, 2020

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Response to OSTP Request for Information – FR Doc. 2020-06622 – “Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research”

Dear Dr. Droegemeier,

The American Society for Gastrointestinal Endoscopy (ASGE) is grateful for the opportunity to respond to this request for information. In particular, we write to strongly urge against the OSTP adopting a policy mandating the free distribution of peer-reviewed manuscripts earlier than one year after publication.

Since its founding in 1941, the American Society for Gastrointestinal Endoscopy (ASGE) has been dedicated to advancing patient care and digestive health by promoting excellence through training, education, and advocating responsible positions to the benefit of patients, the public, and medical professionals. ASGE represents over 14,000 members worldwide, promoting the highest standards for endoscopic training and practice, incorporating the latest endoscopic research and evidence-based guidelines. ASGE has two peer-reviewed research journals: *Gastrointestinal Endoscopy (GIE)* and *Video Gastrointestinal Endoscopy (VideoGIE)*. These monthly, peer-reviewed scientific journals are the leading international publications in the field of gastrointestinal endoscopy, focusing on the study, diagnosis, and treatment of a variety of digestive diseases.

Ultimately, we strive to support the progress of science by producing and broadly disseminating the highest quality peer-reviewed journals possible. Our publisher Elsevier and ASGE have worked together to strengthen scholarly communication and promote open science. *GIE* and *VideoGIE* value the sharing of research and advancements by publishing original, peer-reviewed articles on endoscopic procedures. Our scientific articles report on outcomes research, prospective studies, and controlled trials of new endoscopic instruments and treatment methods. Online features include full text of all articles, video and audio clips, and MEDLINE links to related articles. However, it is critical that these efforts take place within a framework that respects intellectual property rights and our ability to invest in high-quality publications, and that does not hinder researchers from communicating their discoveries.

Our organization is currently deeply engaged in efforts to respond to the COVID-19 pandemic. We are providing resources to our practitioners including clinical practice recommendations, analysis of key governmental policies that affect our community, education, and publication of COVID-19 peer-reviewed science as rapidly as possible. We are making all COVID-19 research, and other articles of strong public health interest, and all abstracts freely accessible. We are concerned that OSTP's significant new regulatory proposal is a distraction from our ongoing efforts to respond to the current crisis and would undermine our stability and undercut our ability to respond to future health crises.

As you are aware, federal agencies currently require that peer-reviewed manuscripts be made freely available online—within one year of publication—if they discuss research funded at least in part by a government grant.¹ This policy represents a significant compromise that balances our shared goals of providing broad access with the need for our organization to recoup the substantial investments we make in the peer-review, editing, publication, distribution, and long-term stewardship of these articles. This one-year compromise contrasts with the length of a full copyright term of life-of-the-author plus 70 years. Importantly, this compromise reflects Congress' guidance (in the authorizing legislation for the current policy) that the Administration must “take into consideration the role that scientific publishers play in the peer review process in ensuring the integrity of the record of scientific research, including the investments and added value that they make.”²

Reducing or eliminating the current one-year embargo would significantly jeopardize our organization's ability to invest in producing the high-quality peer-reviewed journals that our readers in the gastroenterology and hepatology community rely on. In so doing, such a policy would contravene Congress' clear guidance to take our role and investments into consideration. Furthermore, such a policy would directly result in a reduction in either the quantity or quality (or more likely, both) of peer-reviewed journal articles produced by hundreds of organizations like ours.

This would not only be harmful to the research enterprise, it would also be harmful to the *applicable beneficiaries*, e.g., *patients, medical professionals, scientists, and, the general public*, who are the ultimate beneficiaries of the scholarly journals we produce.

Elsevier and ASGE commented on this issue in 2019, and we continue to urge you not to disrupt our ability to support the advancement of research and patient care in gastroenterology and hepatology. We look forward to working together to identify solutions that advance the goals of open science without undermining the communication of research findings and analyses through peer-reviewed journals.

Thank you again for the opportunity to submit comments. Should you need additional information, please contact Ed Dellert, RN, MBA, CHCP, ASGE Chief Policy and Learning Officer at edellert@asge.org or (630) 570-5341.

Sincerely,



Klaus Mergener, MD, PhD, MBA, FASGE
President

¹These policies were developed pursuant to OSTP's requirement that agencies “shall use a twelve-month post-publication embargo period as a guideline for making research papers publicly available . . .” See OSTP Memorandum on “Increasing Access to the Results of Federally Funded Scientific Research” (Feb. 22, 2013).

² America COMPETES Reauthorization Act of 2010, Section 103(b)(9), *available at*: <https://www.congress.gov/111/plaws/publ358/PLAW-111publ358.pdf>.



Response to RFI from OSTP: Public Access From the Center for Open Data Enterprise (CODE)

May 6, 2020

From: Joel Gurin, President, the Center for Open Data Enterprise (CODE)
To: Lisa Nichols, Assistant Director for Academic Engagement, OSTP

This document is being submitted in response to “Request for Information: Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research”.¹ The Request for Information (RFI) is part of an ongoing effort to facilitate implementation of the 2013 memorandum *Increasing Access to the Results of Federally Funded Scientific Research* (the Holdren Memo).

The Holdren Memo set out policy principles aimed at ensuring “the direct results of federally funded scientific research are made available to and useful for the public, industry, and the scientific community.”² It directed federal agencies that spend more than \$100 million annually on scientific research and discovery to develop and implement a plan to support increased public access to the results of federally funded research. Specifically, agencies are required to ensure that the results of research that they fund are available to the public at no charge within 12 months of initial publication.

The Holdren Memo applies to both the publication of research articles in peer-reviewed journals and the publication of digital data. However, while the Holdren Memo provides a specific timetable for making published articles available for free, its guidance for making the underlying data available is more general, simply calling for “maximize[d] access, by the general public and without charge, to digitally formatted scientific data created with Federal funds.” The Center for Open Data Enterprise (CODE) believes that, while agencies have broadly achieved the Holdren Memo’s vision of increased public access to research results and peer-reviewed publications, much more needs to be done to ensure public access to data produced through federally funded scientific research.

Our organization has studied a range of issues related to scientific data sharing, and the concerns that inhibit data sharing, over the last several years. CODE is a 501(c)3 nonprofit organization dedicated to maximizing the value of open government data for the public good. Since our founding in 2015 we have worked with stakeholders in government, academia, the nonprofit sector, and the private sector to enable new approaches to data publication, sharing,

¹ <https://www.federalregister.gov/documents/2020/03/31/2020-06622/request-for-information-public-access-to-peer-reviewed-scholarly-publications-data-and-code>

²

https://obamawhitehouse.archives.gov/sites/default/files/microsites/ostp/ostp_public_access_memo_2013.pdf

and exchange. We have worked with the White House and numerous federal agencies to help them leverage data more effectively across a range of applications, including applications that require open access and scientific data sharing.

In 2016, CODE partnered with the White House Office of Science and Technology Policy to hold an Interagency Open Data Roundtable series as a rapid, inclusive way to address and help solve challenges that prevent open data from reaching its full potential. Over four months, the Roundtables addressed open data challenges related to privacy, data quality, sharing research data, and public-private collaboration.³ Our *Roundtable on Applying Research Data* specifically focused on the question of how to best share and apply data from government-funded scientific research.⁴ Through that Roundtable, we developed a series of recommendations aimed at increasing public access data produced through federally funded research, building on existing federal initiatives including the Holdren Memo.

Since 2016 we have conducted projects related to health, oceans, and other topic areas that have provided us with additional insight into best practices for data sharing. In particular, through a series of Roundtables with the U.S. Department of Health and Human Services, we have studied the issues of privacy and data security that must be addressed in sharing biomedical research data and strategies for addressing those issues.

CODE would like to share our insights and recommendations as OSTP works to facilitate implementation and compliance with the 2013 memorandum *Increasing Access to the Results of Federally Funded Scientific Research*. We have three main recommendations.

- **Use new incentives to promote research data sharing more widely.** Currently, there are many incentives against sharing research data and few that support it. The challenges include both cultural and pragmatic obstacles. The current scientific culture is not to share data, but for individual researchers to hold datasets for their own use. The academic model does not reward data sharing. Since academics are rewarded for publishing peer-reviewed articles more than for publishing datasets, researchers want to get maximum publication value out of their data before releasing it. They may also worry that other researchers may not cite them as the source of the data, or that others may interpret the data in ways they would not approve of.

New ways to reward data-sharing through funding, tenure decisions, and other career incentives could significantly increase data-sharing by researchers. A key is to ensure that researchers receive systematic and meaningful credit for sharing their data. Data citation systems, similar to the citations for published papers, could help researchers gain credit for their work, measure the impact of their research, and advance professionally. They could form the basis for “report cards” that researchers can access to see how their data is being used. This would be similar to the way some organizations now support the use of open source software.

³ <http://reports.opendataenterprise.org/2016opendataroundtables.pdf>

⁴

<http://reports.opendataenterprise.org/KeyTakeawaysonOpenDataforSharingandApplyingResearchData.pdf>

While focused on researchers, improved citation systems for data could also help federal agencies and research institutions track the use and impact of the data their grantees produce. Several research-focused and academic organizations have developed data citation systems for this purpose.⁵ OSTP should support this effort in coordination with the General Services Administration (including data.gov) and Office of Management and Budget, and in partnership with academic institutions and organizations that support open science.

What can OSTP do?

- Collaborate with the GSA and OMB to review existing and proposed data citation systems, with input from open science and academic organizations.
 - After that review, coordinate with GSA and OMB to issue guidance for agencies requiring their grantees to apply a commonly accepted data citation system.
- **Require data sharing and publication as a condition of research funding and help researchers meet that requirement.** While federal guidelines now include an expectation of data-sharing for federally funded research projects, the guidelines can be made stronger and more specific. Guidelines now require grantees to develop data management plans with an expectation that, at minimum, the data underlying publications will be made accessible and shared. Federal funders could tie grants to clearer, binding requirements to adopt open standards and share data publicly to the greatest extent possible, taking privacy and other concerns into consideration. Additionally, federal guidelines currently allow researchers to include data management costs in their proposed budgets.⁶ Guidance should require that these costs be included and equal 5 to 10 percent of total project budgets to align with best practices.⁷

At the same time, federal grant-makers can provide positive incentives and help researchers meet the data-sharing requirement. They can value open data more highly in funding decisions, giving extra points to grant applicants who are committed to sharing their data. Over time, as open data sharing becomes the norm, agencies could also give points to researchers whose public data from previous research has been widely cited. Funders can also provide sample data management plans for federal grantees. While grant applicants are now required to develop these plans, it would be beneficial to clearly encourage data sharing within the goals and recommendations for data management and data infrastructure development.

What can OSTP do?

- Require agencies to include more stringent standards and data sharing requirements in their data management plans.

⁵ See: <https://www.force11.org/datacitationprinciples> and <https://www.nature.com/articles/sdata2018259>

⁶ The 2013 memorandum *Increasing Access to the Results of Federally Funded Scientific Research* as well as a Draft NIH Policy for Data Management and Sharing (https://osp.od.nih.gov/wp-content/uploads/Draft_NIH_Policy_Data_Management_and_Sharing.pdf) currently being circulated include language to this effect.

⁷ <https://www.frontiersin.org/articles/10.3389/fmars.2019.00440/full>, 9-10

- Require agencies to take planned data release into account when awarding new research funding.
 - Develop and provide sample data management plans to federal grantees.
 - Require agencies to mandate that research project budgets include 5 to 10 percent for data management.
- **Promote biomedical research data sharing while ensuring the privacy and autonomy of research participants.** Sharing biomedical research data is critical to research that can provide new treatments and improve public health. However, such data sharing has been inhibited by legitimate concerns over patient privacy and data security. A number of strategies and approaches have now been developed to protect individual privacy and comply with relevant laws while still sharing health research data.

While the Holdren Memo requires agencies to account for confidentiality and personal privacy in their public access plans, more stringent legal and regulatory requirements apply to research involving human participants including biomedical and other health research data. Since at least 2003, The National Institutes of Health (NIH) has been developing strategies to meet these requirements while making the results of federally funded scientific research, and data from that research, available to qualified researchers and to the public when possible.⁸ The latest version of the *NIH Policy for Data Management and Sharing* specifically “prioritizes the responsible management and sharing of scientific data derived from human participants,” and requires researchers to explicitly outline how they will protect human participants’ privacy rights and comply with relevant laws and regulations.⁹

The NIH is the primary federal funder of medical research, but not the only one. Agencies including the Centers for Disease Control and Prevention, National Science Foundation, U.S. Food and Drug Administration, and others also fund biomedical research. These agencies also need to take relevant privacy laws, regulations, and norms into account when preparing their public access plans and releasing research and data.

What can OSTP do?

- Specifically require all agencies that fund medical research to address relevant privacy laws, regulations, and norms in their public access plans, using language from the *NIH Policy for Data Management and Sharing* as a basis.
- Develop and provide privacy best practices for agencies funding biomedical research.

CODE believes that these and similar actions can help ensure that data produced through scientific research is appropriately shared, whether the research is funded by the government or other organizations. Work like the National Academies of Science’s ongoing Roundtable on

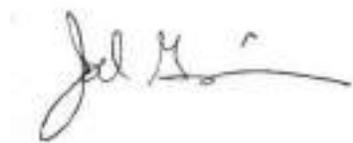
⁸ <https://www.federalregister.gov/documents/2019/11/08/2019-24529/request-for-public-comments-on-a-draft-nih-policy-for-data-management-and-sharing-and-supplemental>

⁹ https://osp.od.nih.gov/wp-content/uploads/Draft_NIH_Policy_Data_Management_and_Sharing.pdf

Aligning Incentives for Open Science¹⁰ and SPARC's work on open data¹¹ show the importance of these issues in academic settings as well as in government. While these recommendations are geared towards OSTP, the issues they tackle should be relevant to anyone interested in sharing scientific data.

CODE applauds OSTP's ongoing work to promote and advance open science and open data across federal research. We thank OSTP for the opportunity to provide our insights and feedback in response to this RFI. We welcome further engagement and look forward to reviewing updates to the 2013 memorandum *Increasing Access to the Results of Federally Funded Scientific Research*.

Sincerely,

A handwritten signature in black ink, appearing to read "Joel Gurin". The signature is fluid and cursive, with a long horizontal stroke at the end.

Joel Gurin, President, CODE (joel@odenterprise.org)

¹⁰ <https://www8.nationalacademies.org/pa/projectview.aspx?key=51293>

¹¹ <https://sparcopen.org/open-data/>



SOCIETY FOR THE IMPROVEMENT OF PSYCHOLOGICAL SCIENCE

May 6, 2020

Lisa Nichols, Assistant Director for Academic Engagement
Office of Science and Technology Policy
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1600 Pennsylvania Avenue
Washington, DC 20504

RFI Response: Public Access (Document Number 2020-03189)

Executive Summary

The Society for the Improvement of Psychological Science (SIPS) is a mission-driven non-profit professional society for psychology researchers and educators. Research transparency and openness are our core values. We care deeply about scientists' and the public's ability to access research articles and research supplements (open data, materials, and analysis code). We also have substantial expertise in encouraging the uptake of more open and rigorous scientific practices. **For these reasons, we write to strongly encourage OSTP to advocate for legislation requiring zero embargo open access to research articles, data, materials, and analysis code in stable, public, not-for-profit repositories.** Commercial publishers seek to commoditize these important scientific products, and action must be taken to protect the interests of scientists and the general public.

About the Society for the Improvement of Psychological Science (SIPS)

SIPS's mission is to increase the transparency, openness, and rigor of psychological science through education, training, and reshaping structural incentives and norms. As part of this mission, we maintain a stable, public, not-for-profit preprint repository, PsyArXiv (<https://psyarxiv.com/>). Our membership is composed of researchers who help each other troubleshoot and develop tools for sharing research with transparency and rigor. We emphasize the importance of critical dialogue and inclusivity, to encourage

challenges to the status quo and to enable a level playing field where all voices can be heard.

Why We Care Deeply about Open Access to Research and Data

The overarching goal of our organization is self-improvement of scientific processes and products. Indeed, self-correction and self-improvement are often said to be hallmarks of scientific research. Openness and transparency are vital to making self-correction possible. Without transparency, errors go undetected and flawed practices persist. Openness and transparency make it possible for scientists to critically evaluate each other's work and detect errors or opportunities for improvement, thereby establishing a solid foundation for future research and policies.

Public trust in science is high, but according to a 2019 Pew survey, the public does not have a high degree of trust in scientists to admit their own mistakes and correct their own errors. This suggests that the public expects scientists to monitor and correct each other – and there is assumed to be a system in place whereby errors and inefficiencies will be caught and corrected, despite the fact that individual scientists are unlikely to admit to these errors and correct them themselves. Indeed, there is a widespread idea that scientific communities encourage self-criticism and self-correction, and it seems likely that this is the basis for much of the public's trust in science. The public assumes that the scientific community lives up to its commitment to self-correction.

We believe that openness and transparency are absolutely vital to fulfilling this commitment and earning public trust. If we cannot commit to transparently reporting our scientific claims, and the evidence behind those claims, then it will become evident that we are not actually committed to scrutiny and self-correction. If we insist on keeping our findings behind journal paywalls or keeping secret the data, code, and materials needed to verify those findings, we are admitting that we value other things (e.g., personal advancement, media attention) more than we value getting the scientific facts right. This would be a very difficult position to defend to the public, who trust us in large part because of our commitment to putting accuracy first.

Given the shared values of openness and transparency, and the scientific community's commitment to the public that we will check and correct each other, why isn't openness the default in scientific reporting? Incentive structures in science (e.g., competition for recognition and prestige) and financial interests (e.g., for-profit publishers aiming to drive up the perceived prestige of their journals) are major obstacles to full transparency in science. It is vital that the scientific community pushes back against these corrupting influences and reaffirms our commitment to putting openness and transparency first, so that we can better achieve our ideals of accountability and self-correction.

Zero Embargo Open Access to Research Articles Serves Science and the Public Good

Taxpayers fund the cost of research via federal grant dollars and government subsidies for public and non-profit private universities. Researchers then peer review research articles and serve as journal editors for for-profit publishing companies, receiving little to no compensation. Perversely, even though taxpayers have already paid several times over for this research, the final products of the research process (published articles) get locked away behind cost-prohibitive paywalls, severely limiting public access. Articles are sold back to university libraries and applied practitioners (e.g., medical doctors, policy makers, public school teachers) at a tremendous markup, effectively lining the pockets of the large publishers and obstructing access to what should be a public good.

SIPS strongly supports a zero-embargo open access policy for federally-funded research and research performed at U.S. public universities. The current global health emergency related to the SARS-CoV-2 virus has highlighted the immense value of having immediate, freely available access to high quality scientific articles. Plan S, representing a European wide cooperative of 37 different funding agencies and research institutes, details plans for a zero-embargo open access policy across Europe. Publishers must already adapt to the new requirements imposed by Plan S, and they are successfully doing so. An American zero-embargo policy would be well aligned with Plan S and help to maintain the position of American research at the forefront of the global scientific enterprise.

Open Access to Research Supplements (Data, Materials, and Analysis Code) upon Publication Promotes Higher Quality Science and Gives Taxpayers a Stronger Return on Investment

In recent years, a revolution has been reshaping how scientists go about their daily work. The “open science movement” seeks to make the process of research more open and transparent for the interconnected purposes of (a) increasing the quality and rigor of scientific research and (b) increasing the reproducibility and replicability of scientific findings. Included in this movement is the notion that (to the extent ethically possible), scientists should openly share the data from their studies, along with the exact protocols and materials needed to replicate a scientific finding. Finally, researchers should openly share their analysis code (thus facilitating other professionals’ ability to reproduce, verify, and build on their work).

As noted above, taxpayers foot the bill for scientific research, and as such, research data, materials, and analysis code should be made freely available to the public as a public good. Data, materials, and code are key parts of the scientific contribution for which federal grant dollars have paid. That scientific value is being left on the table when researchers are allowed to lock these supplemental materials behind a paywall or keep them private.

In order for data, materials, and analysis code to be usable by other researchers, these **supplements should be archived according to FAIR standards** (see: <https://www.go-fair.org/fair-principles/>) in stable online repositories. Preferred repositories should be non-profit organizations *not* associated with for-profit commercial

publishers. When applying for federal funding, researchers should attend to issues related to long-term data stability and permanent public accessibility in their data management plans; funding agencies in turn should establish standards for data stability and public accessibility, and they should enforce researcher compliance with these standards and allow research expenses required to secure the personnel needed to maintain compliance with these standards.

To be clear: large commercial publishers see an opportunity in the “open science movement” to further their market share by commoditizing open data, materials, and analysis code. For example, large commercial publishers profit from embargo periods that delay public accessibility of research articles and research supplements. OSTP should take action to protect these important scientific products from being rendered inaccessible to scientists and the general public because of expensive paywalls, and it should prevent for-profit publishers from capturing yet another segment of the research life cycle.

Scientific Progress is Hindered by Current Publishing Practices: The Time for Change is Now

The current scientific publishing system is slow and expensive. The COVID-19 pandemic has shed stark light on the need for systemic reforms. Scientists, the government, policy makers, and the general public need open access to high quality scientific information in real time, and they need to be able to verify the data, materials, and code behind these claims. We simply cannot afford to wait for embargoes to expire: lives are at stake.

Some publishers have made the argument that subscription fees are their only viable business model. Furthermore, they have argued that alternatives, such as systems in which authors’ institutions or their grants pay article processing charges (known as APCs) to make articles open access immediately, are unfair to authors and expensive. These arguments ignore the already extremely high profit margins of for-profit publishers (for instance, Elsevier posted 31.3% profit in 2018; see MIT Libraries Elsevier Fact Sheet) and the extremely high costs to our public and university libraries (Bosch, Albee, & Romain, 2020) of the status quo. In the current system, taxpayers are covering the costs not only of research itself, but high publisher fees for access to that research.

The objections raised by for-profit publishers also ignore solutions that are now tried and true for lowering cost, increasing access, and giving a higher rate of return on taxpayer investment. These solutions include: promoting the use of disciplinary preprint repositories (like the wildly successful arXiv, or our own PsyArXiv), supporting non-profit wholly open access publishers (like PLOS, or the University of California Press, which publishes our society’s low cost, fully open access journal *Collabra: Psychology*), new “big deals” with traditional publishers that lower costs for libraries, while providing permanent and immediate open access (see, e.g., A new kind of ‘big deal’), and bolstering not-for-profit infrastructure (such as the Open Science Framework, osf.io) that

makes it easy to openly, transparently, immediately, and stably share all manner of scientific products (e.g., data, materials, analysis code). It is crucial we continue to develop and support these new publishing mechanisms, so that we can address ballooning costs and spend scarce resources wisely, thereby better supporting the next generation of scientists - especially researchers from under resourced institutions and underrepresented backgrounds.

Traditional scientific publishing is slowly, steadily moving toward open access to research as the default (and paywalled access as the exception). Science and the public will benefit immeasurably from this transition. Plan S has already significantly accelerated progress in this domain, and OSTP now has the opportunity to further stretch the value of its granting dollars, while improving the quality and rigor of the scientific process. SIPS wholeheartedly supports OSTP in this endeavor.

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Submitted on behalf of the SIPS Executive Board

Dr. Alexa Tullett, SIPS President (University of Alabama)

Dr. Benjamin Brown (Georgia Gwinnett College)

Dr. Anita Eerland (Utrecht University)

Dr. Joseph Hilgard (Illinois State University)

Dr. Melissa Kline (Center for Open Science)

Dr. Benjamin Le (Haverford College)

Dr. Hannah Moshontz (University of Wisconsin, Madison)

Dr. Heather Urry (Tufts University)

Dr. Simine Vazire (University of California, Davis)

Dr. Katherine S. Corker, SIPS Executive Officer (Grand Valley State University)

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MEMORANDUM

TO: Dr. Lisa Nichols, Assistant Director of Academic Engagement, Office of Science and Technology Policy

FROM: Association of American Universities; Contact: Katie Steen, katie.steen@aau.edu
Association of Public and Land-grant Universities; Contact: Kacy Redd, kredd@aplu.org
Council on Governmental Relations; Contact: Jackie Bendall, JBendall@COGR.edu

DATE: May 6, 2020

Re: OSTP Request for Information- Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting from Federally Funded Research- Document No. 2020-03189

On behalf of our organizations representing the higher education and research university community, we greatly appreciate the Office of Science and Technology Policy's (OSTP) efforts to seek comments on ensuring public access to scholarly outputs resulting from federally funded research. Stakeholder input and buy-in across the research enterprise will be imperative as we seek to develop and advance federal policies to appropriately manage and sustain the public sharing of federally funded research. Our organizations have appreciated the ongoing dialogue with OSTP and federal agencies on this matter and look forward to continuing our engagement on this topic.

Enabling public access to federally funded research results accelerates scientific inquiry and ensures research integrity; both goals are critical to enabling the scientific discoveries which advance our nation's health, drive U.S. global competitiveness, and ensure our overall well-being. The creation and dissemination of new knowledge, as well as ensuring public access to such knowledge, are core to our missions as research universities and a responsibility we take seriously. With [support](#) from NSF and NIH, AAU and APLU are [convening](#) a series of workshops, meetings, and national summits aimed at accelerating public access to research data at our member institutions. In our comments, we outline opportunities for further collaboration with the federal government and other stakeholders as well as existing barriers to enabling public access to federally funded research results.

1). What current limitations exist to the effective communication of research outputs (publications, data, and code) and how might communications evolve to accelerate public access while advancing the quality of scientific research? What are the barriers to and opportunities for change?

Coordination and Management

Ensuring public access to research requires significant coordination across a wide array of public and private entities and communities of practice, many of which have a variety of operating procedures (e.g. funders, researchers, institutions, scholarly disciplines, scientific societies, service providers, etc.). An added challenge

to managing research sharing efforts is the decentralized nature of academic communities. This decentralization is also reflected in the variety of public access policies across the federal agencies. Policy harmonization across agencies is needed to incentivize researchers to engage in the open sharing of research outputs and assist institutions in compliance. A possible solution is the creation of more one-stop-shop access points for researchers that integrates grantee and funder operating procedures and requirements. One illustrative example is the [PASS System](#) developed by Johns Hopkins University, which is making great strides in simplifying the reporting, sharing, and compliance components of federally funded research.

Data Expertise and Standards

Publicly sharing research data presents technical challenges that necessitate federal guidance and coordination to ensure accessibility, quality, and efficiency. There is considerable variation across disciplines in the type and size of data produced from federally funded research. While some disciplines have adopted best practices for data sharing, curation, and dissemination, many disciplines still lack standards and consensus. The variation and lack of standards makes it more difficult for researchers to share data and for institutions to comply with federal data sharing policies. Clear, disciplinary-based data standards are needed to facilitate data sharing, especially in disciplines that lack consensus. This will require active engagement with key disciplinary societies.

Private industry employs a significant number of data experts that are needed in the public sector research enterprise. To bolster data expertise within the government and at institutions, we need investments in discipline-specific and interdisciplinary data fellowships and traineeships. Developing and incentivizing researchers with data skills to stay in the public sector will strengthen our human and technical infrastructure while providing additional opportunities for collaboration with the private sector.

Costs

Providing public access to research requires financial investments across the scientific enterprise. The community currently lacks the human capital and technical infrastructure to enable full access to taxpayer-funded research. To meet this challenge, stakeholders, including the federal government, have an opportunity to come together to develop, build, and financially sustain the human and technical infrastructure required to fully realize the goals of public access.

Many existing business models in scholarly communication with paywalls effectively lock out potential users, beneficiaries, and universities because of excessive subscription costs. This model has proven difficult to modify because peer-review, the cornerstone of quality science, is typically housed within these existing models. Our world-class scientific enterprise has the leverage and the ability to explore new models (e.g. “open platforms/models”) where peer-review is managed more directly by the academy. Rethinking current practices and models is an important step in lifting the financial barriers that currently exist to accessing research results.

Finally, access to (or creation of) repositories often comes at a significant cost. At a minimum, federally funded research should include such costs as allowable direct expenses. In many cases, the curation of data necessary before putting it in data repositories occurs after grants close, in which case the costs are not allowed as a direct charge. This is a problem that needs to be addressed to support greater sharing of data.

Openness, Security, and Privacy

We understand the need to balance openness and security within the scientific research enterprise and take seriously the responsibility to protect U.S. intellectual property when necessary. With this balance in mind, our institutions are actively working to update and strengthen campus policies aimed at supporting a research environment that broadly disseminates unrestricted research while appropriately protecting classified and export-controlled research. In addition to security concerns, our institutions also take seriously the privacy of human research subjects and their personal information and diligently work to adhere to government-imposed controls and requirements for care and handling of “Controlled Unclassified Information.” In some instances, lack of consistency between federal requirements and expected practices for maintaining privacy and security can lead to confusion when trying to publicly share research outputs. For this reason, any federal policy on public access must be developed and implemented in concert with relevant privacy and security practices.

2). What more can Federal agencies do to make tax-payer funded research results, including peer-reviewed author manuscripts, data, and code funded by the Federal Government, freely and publicly accessible in a way that minimizes delay, maximizes access, and enhances usability? How can the Federal Government engage with other sectors to achieve these goals?

Streamlining Data Guidance and Services

The federal government has a unique role to play in meeting the challenges posed by the variation in type and function of research data across disciplines. Researchers are experts in their field but not necessarily experts in the best data sharing practices, e.g. those that align with FAIR principles. To minimize the delay in preparing data for public use, detailed guidance and user-friendly infrastructure is needed. We suggest the federal agencies solicit input from data experts, universities, and agency staff to develop and endorse specific data standards and practices. As recommended by the Government Accountability Office (GAO) in their [report](#) on public access to research results, we also suggest agencies work to establish single points of access for researchers to deposit data. Additional direction from the agencies, including in one-to-one program officer and researcher communications, is needed to support research compliance and solidify operating procedures on campus.

Developing a Data Workforce

In addition to guidance and single points of access, federal investment in developing data expertise at the agencies and in the broader research enterprise is necessary. Across the research community, a gap exists in that researchers skilled in their discipline may not be skilled in their discipline’s data sharing practices. As the research community works to transition to an increasingly digital world, the development of the scientific workforce must support new traineeships and fellowships that seek to fill this gap. While technical data skills are critical, new and innovative approaches to science (e.g., collaborative/team science, open science, interdisciplinary research) require experts skilled in both the discipline and data dissemination. To bolster and develop data expertise within the government and at institutions, we recommend federal investments in discipline-specific and interdisciplinary data fellowships and traineeships.

Infrastructure

Our existing research infrastructure, both technical and human, presents challenges and opportunities in enabling public access. Our comments have outlined the difficulties posed by the variation in types of data across scientific disciplines, lack of single points of access to repositories, gaps in data expertise, and the need

for more platforms with appropriate reuse characteristics. Strategic federal investments in key infrastructure will enable and incentivize the scientific community to share research and further incorporate open science practices into the enterprise. To determine areas for strategic investments, we recommend the federal government undertake an assessment of current platforms, services, and systems that support the public sharing of research and identify areas of need. This assessment could inform sustained federal investment decisions. In parallel, we also suggest the federal government engage, through agency requests for proposals (RFPs), in pilot projects with scholarly societies, institutions, and other partners to develop, build, or sustain discipline-specific data repositories and systems that allow for interdisciplinary data analysis across repositories.

Costs

As universities endeavor to support scholarly communication in the digital age, shortcomings in our current system have highlighted the need to adapt and rethink our current models for disseminating research. The COVID-19 pandemic has further underscored the need to minimize the delay in sharing data and articles in a way that ensures quality, usability, and reproducibility. Specifically, we encourage the agencies and OSTP to support the scientific enterprise in exploring new research dissemination models where peer-review is managed more directly by the academy. This may include peer-review managed by scholarly societies or other self-organized and proven models that ensure the quality of research articles at reasonable costs. Rethinking current practices will lessen the financial barriers to accessing research results.

As detailed above, building and sustaining the appropriate research infrastructure is critical to the long-term sustainability of public access to federally funded research. Maintaining and increasing America's return on investments in science requires investment in research infrastructure. To ensure alignment with FAIR data standards, it will be important that government agencies help to play a role in establishing and maintaining such infrastructure for the core scientific disciplines for which they provide significant levels of federal support.

Openness, Privacy, and Security

To improve understanding within disciplines and across universities, agencies should provide specific guidance on the balance between public access, security, and privacy. The federal government is better positioned to indicate the appropriate balance and how it expects the research community to steward federal funds. To facilitate compliance with federal policies and enhance research quality, we recommend agencies provide clear and consistent rules and policies which appropriately balance the need for scientific openness with security and privacy, in consultation with stakeholders. We also recommend that agencies request that Principle Investigators incorporate both information about how research results will be shared (with attention to privacy concerns, etc.) or, secured, if necessary, in the data management plans that they submit as a part of their grant proposals.

3). How would American science leadership and American competitiveness benefit from immediate access to these resources? What are potential challenges and effective approaches for overcoming them? Analyses that weigh the trade-offs of different approaches and models, especially those that provide data, will be particularly helpful.

Scientific Innovation, Economic Impact, and Integrity

Enabling public access to research outputs allows researchers to address new questions that cross disciplinary boundaries. Tackling national and global challenges requires an interdisciplinary approach that leverages expertise and studies from across many different scientific communities. The National Academies of Sciences,

Engineering, and Medicine's (NASSEM) 2018 report, [Open Science by Design: Realizing a Vision for 21st Century Research](#), outlines how sharing research data in a machine-readable format for computational analysis speeds the discovery of new patterns and relationships that can cross disciplinary boundaries. With appropriate quality checks in place, the open sharing of knowledge will help us uncover new patterns and insights across fields. For example, [Paradigm4](#), a data management system started at MIT before growing into its own company, allows users to draw upon open data across a range of fields. The computational platform enables researchers to analyze multiple data sets quicker than ever before at scale. The culture of data sharing underlying Paradigm4 and other initiatives undergirds the next frontier of science and medicine as we look to better understand the interconnectedness of our world.

With increased innovation and discovery comes increased economic output. A 2014 [study](#) commissioned by the Omidyar Network suggests open data has the potential to unlock \$3.2 trillion in economic value annually. For the U.S. to fully realize this potential, we must invest in the tools, services, and infrastructure that enables scientists to easily share research outputs and collaborate. To effectively leverage resources, the research community and the federal government should work together in partnership to evaluate needs and costs within the enterprise.

The open sharing of research data not only promotes collaboration and innovation within the scientific community, it also helps build the public's trust in science by ensuring accountability and transparency. Sharing data allows other researchers to re-analyze and reproduce studies to test reliability and maintain research integrity. American competitiveness hinges on the public and policymaker's trust and belief in science and the research community's ability to demonstrate its value. While communicating science can be difficult, sharing data publicly helps build trust in our researchers. A Pew Research [study](#) found the majority of Americans are more apt to trust research when the data is openly available.

COVID-19 Pandemic, Public Health

As made clear in OSTP's [call to publishers](#) to make COVID-19-related research available to everyone, the current pandemic further highlights the need to share research results so medical professionals and scientists can collaborate on the development of life-saving treatments and ultimately, a COVID-19 vaccine. We are grateful for the research community's rapid response to the virus and are committed to continuing our work with the federal government and industry partners. Investments in open science infrastructure that enable public sharing of quality research outputs better prepares American science leadership to fight the coronavirus and other public health threats.

Any additional information that might be considered for Federal policies related to public access to peer-reviewed author manuscripts, data, and code resulting from federally supported research.

The implementation period of any new public access policy must appropriately consider the down-stream effect on universities, scientific and disciplinary societies, and the scientific enterprise more broadly. Federal agencies should consider the significant changes university practices and academic culture will have to undergo to adapt to new policies in a way that ensures integrity and quality. Achieving such cultural change will not happen overnight. Appropriate time will be needed to enable universities and scientific societies to develop and implement new models and costing mechanisms to ensure broad based and more immediate public access to research results. Moving too quickly to implement new government-wide public access policies could have a damaging, as opposed to positive, effect on universities' ability to conduct and effectively disseminate new scientific knowledge generated by their faculty and students. Continual engagement with the university community during the implementation of any policy will be critical.



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May 6, 2020

Lisa Nichols
Assistant Director for Academic Engagement
Office of Science and Technology Policy (OSTP)

Submitted electronically at publicaccess@ostp.eop.gov

RE: Public Access to Peer-Reviewed Scholarly Publications, Data, and Code Resulting From Federally Funded Research (Document Number 2020-03189)

Dear Dr. Nichols:

I write on behalf of the Entomological Society of America (ESA), the largest organization in the world serving the professional and scientific needs of entomologists and individuals in related disciplines. We appreciate the opportunity to provide our perspective on the issue of open access for publishing as an organization that produces eight scientific journals, three of which are fully open access and five of which offer optional open access to authors. We appreciate the Office of Science and Technology Policy's (OSTP) interest in ways to make tax-payer funded research accessible to the public and willingness to engage the non-profit community so that we can effectively move forward together. Below we have tried to provide responses to the questions posed in the Request for Information (RFI) along with some additional context.

Scientific societies like ESA play a critical role in supporting their respective disciplines in a wide range of ways, including through publishing peer-reviewed journals focused on topics of interest to the research community. Such publications advance science and technology more broadly by providing trusted, reputable sources for researchers to find curated, high-quality, peer-reviewed content.

The value and importance of publishing is particularly relevant during our current pandemic. Journals have rapidly mobilized in response to the needs of the public and policy-makers for information on Covid-19 as it becomes available. Central to this is a strong infrastructure as well as a workforce with skill and motivation to quickly and carefully peer-review science, a critical function in a life-or-death situation. Efforts to change scientific publishing rapidly may result in a destabilization or even collapse of parts of that infrastructure; if that should happen, it won't be available when we need it for the next public crisis. Instead, the process should be thought of as evolutionary, requiring time to transition models and reallocate resources without diminishing the stability of the overall infrastructure needed to maintain the highest quality of peer-reviewed publications or the financial solvency of the non-profit societies themselves.

ESA has over 7,000 members, representing entomology researchers in academia, industry, and the government, as well as teachers, extension service personnel, administrators, research technicians, consultants, students, pest management professionals, and hobbyists. Many but not all of our members regularly publish research findings in peer-reviewed journals to share their science with colleagues and the public as an important part of their career progression. Revenues from our eight peer-reviewed publications, as well as our magazine *American Entomologist*, help support a wide range of other activities across the Society to benefit everyone, not just those in a publication-intensive sector. For example, we use publication revenue to help reduce student membership fees and fund participation in national and regional ESA meetings, an option that is important to their professional development but may not be possible without the Society's assistance. Additionally, ESA seeks to promote the discipline and communication around entomology in the public interest through other platforms like the blog "Entomology Today," which is open-access and translates research content of interest to the public, students, and other non-entomologist audiences.

As part of our efforts to increase access to and interest in entomology, we have been working to establish a business model that is as equitable as possible, supporting entomologists while also making relevant information available to the public. Indeed, two of our three open access journals are intended specifically to make research available to the sectors that will directly benefit from the findings. ESA's *Journal of Integrated Pest Management (JIPM)* is published to share extension information from universities to benefit farmers, ranchers, park personnel, veterinarians, and other related audiences. Another ESA journal, *Arthropod Management Tests (AMT)*, is published to share pesticide testing data quickly with farmers and other pesticide users. For authors who publish in our hybrid research journals, the ability to quickly share their research with colleagues and collaborators is important to the rapid progress of their work, so our publisher provides all authors with a shareable link that gives immediate access to their published paper regardless of whether the recipient or his/her institution has a subscription to that journal. All authors in our hybrid journals are also welcome to upload their accepted manuscripts to their institutional repositories or other non-commercial repositories; the accepted manuscript can then be made publicly accessible after a one-year embargo period.

ESA's publications are based on high levels of rigor and quality. This introduces some challenges when considering a model based solely on Article Processing Charges (APCs) for open access. For example, as an organization that represents a global community, maintaining these standards for rigor and quality often requires significant investment of time and intellectual resources in rigorous editorial review and editing improvements to submitted content as many of our scientists do not speak English as their primary language. An APC model creates a financial disadvantage for selective journals like ours because this model doesn't cover the cost of rejected papers, which still require an investment of time and energy in the review process.

Additionally, another serious consideration for ESA, which is not unique to our discipline, is that not all researchers have equal access to financial resources. A pay-to-publish model would likely have the consequence of decreasing the diversity of perspectives in the scientific community as a result of increased barriers to entry and success for those most in need of the opportunity to

get their science out through publication, such as those early in their career, at under-resourced institutions, and from underrepresented communities in science, technology, engineering, and mathematics (STEM) fields. At ESA, we waive the cost for some ESA members each year who cannot afford to publish in our open access journals, but we are concerned about our ability to financially support such waivers across eight journals, should the number of requests scale significantly.

Currently there is no established model for the distribution of open access funds. Neither non-profits nor the federal government can abruptly change without causing serious disruption to the sciences at a time when the need to focus on other crises is very real. However, to make a wide-scale move towards open access, federal funding agencies would need to include publishing support in their grants. If OSTP is interested in meaningfully supporting the transition to open access, we would encourage you to focus on identifying ways to help authors access and utilize funding from across the federal agencies to support publishing and disseminating their research, and help ensure fair reallocation of these funds to support the breadth of critical science and technology funded by tax-payers.

The above examples showcase ESA's ongoing support for openness, public access to scientific information, and sharing of science to advance future research. Other professional societies and publishers have instituted other programs. Each community is different, and a one-size-fits-all model is not likely to be successful due to these differences.

We encourage OSTP to work with the community to develop a path forward that would not destabilize existing infrastructure but rather would create appropriate benchmarks to work towards collectively. ESA believes that access to information must be equitable and non-discriminatory and that science is strengthened by a diverse ecosystem of talent. Any proposals put into place need to take into consideration the potential unintended consequences of change and ensure that no community, researchers as well as the public, is left in a worse position with whatever steps are pursued.

Thank you for your consideration and attention. If you have any questions, please don't hesitate to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Chris Stelzig". The signature is fluid and cursive, written on a white background.

Chris Stelzig, CAE
Executive Director, Entomological Society of America

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Clifford A. Hudis, MD,
FACP, FASCO

Via Electronic Submission

May 6, 2020

Dr. Kelvin K. Droegemeier
Director, Office of Science and Technology Policy
Eisenhower Executive Office Building
1650 Pennsylvania Avenue, NW
Washington, DC 20504

**Response to OSTP Request for Information – FR Doc. 2020-06622 –
“Public Access to Peer-Reviewed Scholarly Publications, Data and Code
Resulting From Federally Funded Research”**

Dear Dr. Droegemeier,

The Association for Clinical Oncology (ASCO) appreciates the opportunity to respond to this request for information. We write to caution OSTP against adopting a policy mandating the free distribution of peer-reviewed manuscripts earlier than one year after publication.

The Association is a national organization representing more than 45,000 oncology professionals who care for people living with cancer. Through research, education, and promotion of the highest-quality patient care, our members are committed to ensuring that evidence-based practice for the prevention, diagnosis, and treatment of cancer are available to all Americans. The Association supports major quality initiatives that enhance performance measurement and improvement, clinical practice guidelines, big data analytics, and the value of cancer care.

Our affiliate, the American Society of Clinical Oncology's (the Society), journals offer readers credible, authoritative, peer-reviewed resources critical to continued progress against this complex, life-threatening disease. In addition to the Society's flagship publication, *Journal of Clinical Oncology (JCO)*, the Society publishes *JCO Oncology Practice*, *JCO Global Oncology*, *JCO Precision Oncology*, and *JCO Clinical Cancer Informatics*. Research and treatment information published in the pages of these journals inform the care of patients with cancer worldwide, guiding oncology professionals in delivery of high-quality cancer care.

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The rapid evolution of our understanding about cancer biology—and the increasingly challenging practice environment—make it more important than ever to assure timeliness, accuracy, and accessibility of emerging evidence. The Society makes its cutting-edge content broadly available through trusted and well-established publications. We do this in several ways:

- All articles in *JCO Global Oncology (JCO GO)* —a fully open access journal—are immediately and freely available to the public at the time of online publication.
- Original research articles from *JCO* that are especially important to practices are provided for free immediately at the time of online publication; all special articles published in the journal—including clinical practice guidelines—are also free.
- Unless otherwise indicated, original research published in the society’s journals is available to the public 6 or 12 months after the online publication date, depending on research funder requirements; NIH-funded research is deposited into PubMed Central no later than 12 months after publication.
- The Society participates in the World Health Organization’s HINARI program, which provides access to published research for 8,900+¹ institutions in low-resource countries for free or at minimal cost.

These efforts take place within a framework that respects intellectual property rights and our ability to invest in high-quality publications, and that does not hinder researchers from communicating their discoveries.

As you are aware, federal agencies currently require that peer-reviewed manuscripts be made freely available online within one year of publication if they discuss research funded at least in part by a government grant.¹ This policy represents a balance of our shared goals of providing broad access with the need for our organization to recoup the substantial investments we make in the peer-review, editing, publication, distribution, and long-term stewardship of these articles. Importantly, this compromise reflects Congress’ guidance (in the authorizing legislation for the current policy) that the Administration must “take into consideration the role that scientific publishers play in the peer review process in ensuring the integrity of the record of

¹ <https://www.research4life.org/new-hinari-users-online-course/>

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Clifford A. Hudis, MD,
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scientific research, including the investments and added value that they make."²

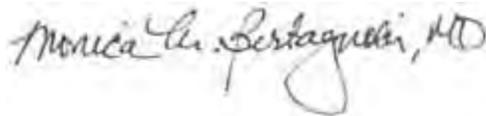
Reducing or eliminating the current one-year federal embargo on all federally funded research would significantly jeopardize the Society's ability to support production of high-quality, peer-reviewed journals our readers expect—and rely on to support their work. Further, we believe such a move would not only run counter to Congressional guidance to take our role and investments into consideration but could also erode the quantity and/or quality of peer-reviewed content produced by hundreds of organizations like ours.

This would be harmful to the research enterprise, but it would also be harmful to patients, medical professionals, scientists, and the general public who are the ultimate beneficiaries of the scholarly journals we produce.

We urge you not to disrupt our ability to support the advancement of research and patient care in the field of clinical oncology, and we look forward to working together to identify solutions that advance the goals of open science without undermining the communication of research findings and analyses through peer-reviewed journals.

Thank you again for the opportunity to submit these comments. We look forward to continuing to work with you and review any policy proposals that result from this RFI. Please contact Shimere Williams Sherwood at Shimere.Sherwood@asco.org with any questions and for further discussions.

Sincerely,



Monica M. Bertagnolli, MD, FACS, FASCO
Chair of the Board, ASCO Association for Clinical Oncology

² America COMPETES Reauthorization Act of 2010, Section 103(b)(9), available at: <https://www.congress.gov/111/plaws/publ358/PLAW-111publ358.pdf>.



Society for Research in Child Development

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Tel: 202.800.0677 • Website: www.srkd.org

May 6, 2020

VIA ELECTRONIC SUBMISSION

Dr. Kelvin K. Droegemeier
Director, Office of Science and Technology Policy
Eisenhower Executive Office Building
1650 Pennsylvania Avenue, NW
Washington, DC 20504

Response to OSTP Request for Information – FR Doc. 2020-06622 – “Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research”

Dear Dr. Droegemeier,

The Society for Research in Child Development (SRCD) is grateful for the opportunity to respond to this request for information. We are pleased to be able to share with you both our commitment to public access and openness and our concerns with a proposed federal mandate to abruptly shift policies and standards for federally funded research in ways that may have unanticipated detrimental consequences for the scientific enterprise as well as public impact.

The Society for Research in Child Development (SRCD) was founded by the National Academies of Science in 1933 to stimulate and support research on child development and encourage application of research findings. SRCD is an international, interdisciplinary community of over 5,500 members dedicated to its core mission of advancing the developmental sciences and promoting the use of developmental research to improve the human lives. Our members are scholars, students, and evidence-based policymakers who are dedicated to using scientific approaches to study children and families, and to utilizing scientific evidence to optimize child well-being. SRCD publishes four journals including the premier journal in the field, *Child Development*, as well as *Child Development Perspectives*, *Monographs of the Society for Research in Child Development*, and *Social Policy Reports*.

SRCD is dedicated to optimizing scientific innovation through publication and dissemination via the highest quality peer-reviewed journal publication process, and is committed to the open exchange of information as a key ingredient to advancing scholarly innovation and evidence-based practice and policy. However, it is critical that these goals are supported in ways that 1) are maximally inclusive, 2) recognize and respect the complexity of the publication enterprise ecosystem, 3) protect opportunities for those not directly supported by U.S. federal funding to

contribute to scholarly innovation, and 4) increase accessibility to the public by translating and disseminating the outcomes of research in meaningful and useful ways.

SRCD fully embraces a commitment to openness and strongly suggests that solutions be re-focused to more optimally achieve the goals outlined in the proposed executive order, and avoid unintended negative consequences for the scientific enterprise and ultimately, for the downstream consumers of the science –citizens of the U.S. and the global community. We are specifically concerned with the proposed zero-day embargo policy for federally funded research as a remedy to the need for increased public access. We suggest that A) this embargo will introduce significant barriers to publication and dissemination of research and at the same time, B) this approach fails to meet the intended goal of offering enhanced public access to interpretable and usable information about the science that is being supported by federal funding.

We have outlined the basis for our concerns in greater detail below but would also like to note that our organization is currently deeply engaged in efforts to respond to the COVID-19 pandemic, and we are concerned that adapting to a significant new regulatory act will distract from and undercut our capacity to respond to the current crisis. Our efforts have focused on the catastrophic consequences of the current pandemic on our community's (and indeed all behavioral science researchers') capacity to collect data from human participants. Especially for research on children and families, the lack of direct access to individual research participants has ground to a halt many of our members' research programs. Much of the study of children does not readily lend itself to more remote solutions. Our response to COVID-19 has also focused on translating child development research to the external community including parents, policymakers, and practitioners who have been adversely affected by the pandemic.

As you know, the scholarly publication enterprise is a complex system involving authors, institutions, reviewers, editors, funders, scientific societies, and publishers. The global scientific enterprise involves researchers operating within diverse contexts and regulatory environments and represents researchers supported by diverse funding sources both federal and private. In many cases, for researchers within the social and behavioral sciences, original research can be conducted with little to no external funding based on volunteer participants and research assistants, which significantly reduces barriers to publication for those in our field who are early career scholars, those from underrepresented groups, those from under-resourced institutions, and those from non-research-intensive institutions. Our science is healthier, more innovative, and more generalizable when all sectors of the scientific community have shared access to scholarly publication platforms.

Unintended Consequences of a Zero-Day Embargo Policy

There is a strong interest in science in general, and a growing commitment in the social and behavioral sciences in particular, to increase access both within and outside of the scholarly community to research. This commitment to openness is resulting in deliberate and innovative change and evolution of the scientific publication enterprise –in other words, market pressures

by scientists and institutions are driving commercial publishers and scholarly societies to explore new models and alternative approaches that sustain the fundamental curation and dissemination functions of scientific publishing. However, approaches that are straightforward and easily accommodate zero-day embargoes for some sciences would introduce significant barriers to open dissemination of science for others. Specifically, the prevailing model for Open Access (OA) is one that shifts financing of the curation (including peer-review and editing), production, and dissemination costs for a scientific journal from subscription revenue to Article Processing Charges (APCs). For fields such as Chemistry and Biology where research cannot be conducted without significant external funding, APCs can be folded into grant budgets, so an APC-based model can be easily accommodated. For other fields including the Social and Behavioral Sciences, Mathematics, and Theoretical Physics, this solution does not scale. This is true for a significant majority of Child Development research.

Federal funding allocations to developmental scientists (and the social and behavioral sciences in general) are much smaller than for the physical and natural sciences, limiting available resources to pay APCs. Further, less than half of the research published in SRCD journals is funded by federal sources, and less than 15% is currently being published OA through payment of APCs. Put simply, our scholarly community is not poised to shift to a Gold Open Access (OA) model. Nonetheless, publishers anticipate implementation of a zero-day embargo to require an abrupt shift from a mix of subscription and APC revenues to predominantly APC-based models. This would have catastrophic implications for research communities like ours, preventing the majority of our scholars from being able to afford to publish their research. Thus, we are concerned that the proposed policy would **disproportionately burden scholars from the social-behavioral sciences**, would **privilege access to publication for a narrow subset of our community** who have sufficient federal funding to subsidize publication of their work, would **seriously compromise the robustness of our sciences**, and would **compromise the research careers** of many of our members. The proposed Executive Order does not allow time and opportunity for research-industry partnership to continue to evolve new models that accommodate and address these concerns based on market concerns and pressures, upending the existing publishing models without provision of infrastructure or support for an appropriate and constructive alternative approach.

Alternative (nearly cost-free) models of OA are ones that eliminate the careful controls that protect the integrity of our sciences such as a systematic peer-review and curation process. Driving the market in this direction would have economic implications for publishers and scientific societies but, more importantly, would compromise curation and quality-control measures and reduce the public's capacity to identify and utilize the most robust and reliable science.

Public Access Requires Translation

Separate from our concerns about the compromising effect of a zero-day embargo on the conduct and scholarly dissemination of science, we are concerned that increasing direct access to research products and data is not actually an effective solution to the problem of enhancing public access. Scientific data and scholarly publications are specialized for sharing among

scientists. The science communication enterprise is dedicated to the goal of translating science for public consumption and requires a very different specialized skill set to ensure that data, theory, and implications are framed in ways that the public can understand. Current publications models are not well-suited for public consumption, nor are scientists consistently well-trained at providing effective translation via abstracts, public summaries, etc.

Not only does effective public access require translation, it requires *targeted* translation for specific consumer audiences. For example, research translation priorities and framing of child development research must differ in significant ways for parents and caregivers versus practitioners (such as teachers, nurses, and social workers) versus policymakers. For none of these audiences will increasing direct access to the original data files or scholarly publications accomplish the desired goal. We encourage the OSTP to establish guidelines, processes, and mechanisms for supporting funding agencies' capacity to build out and grow communication avenues and platforms that provide direct and targeted translation. We urge OSTP to be guided by available data regarding the impact of PubMed access on the public to substantiate the argument that increasing direct access does not increase public consumption –low uptake and application by the public of available (12-month embargoed) evidence speaks to our concern that increasing direct access is a suboptimal solution to the important issue of increased accessibility.

Conclusions

We applaud and support OSTP's commitment to the goal of increased public access but urge that solutions be generated that do not disrupt or impede the scientific community's capacity to publish cutting-edge work, and that enhance the public's capacity to make good use of the research that taxpayers are subsidizing. We are eager to work together to support the advancement of research in child development and effective translation of its implications to the public. We look forward to working in partnership with OSTP and our sister scientific societies to identify solutions that advance the goals of open science without undermining the communication of research findings and analyses through peer-reviewed journals.

Thank you again for the opportunity to submit these comments.

Sincerely,

A handwritten signature in black ink, appearing to read 'Laura Namy', written in a cursive style.

Laura L. Namy, Ph.D.
Executive Director

May 6, 2020

Lisa Nichols, PhD, Asst. Dir for Academic Engagement
Office of Science and Technology Policy, Executive Office of the President
Eisenhower Executive Office Building
1650 Pennsylvania Avenue
Washington, DC 20504

Via Email: publicaccess@ostp.eop.gov

Dear Dr. Nichols:

The American Society of Human Genetics (ASHG) appreciates the opportunity to respond to the request for information from the Office of Science and Technology Policy. Like the broader genetics and genomics community we serve, ASHG has a decades-long commitment to policies that advance rapid access to high-quality scientific and clinical data. While sharing the Administration's goal to speed access to scientific discovery, we urge the Administration to recognize the fundamental importance and contribution of scientific peer review to the integrity and quality of the scientific record and that resources are necessary to do it well.

ASHG is the primary professional membership organization for human genetics specialists worldwide. The Society's nearly 8,000 members include researchers, academicians, clinicians, laboratory practice professionals, genetic counselors, nurses and others who have a special interest in the field of human genetics. Since 1949, the Society has published the *American Journal of Human Genetics (AJHG)*, a premier scientific journal publishing many of the most important findings in human genetics research. In 2019, the Society announced *Human Genetics and Genomics Advances*, a high-quality fully open access journal that will launch this year.

As the ASHG Board of Directors articulates in its policy agenda, "With the unprecedented volume of genomic and associated data generated today, it is critical that data are shared with the scientific and healthcare communities to accelerate discovery and inform clinical care." Our publishing efforts are guided by that goal, and we believe AJHG's review process enhances the quality of published human genetics and genomics research. Through that review, we strive to balance rapid access *and* high-quality, transdisciplinary dialogue about emerging discoveries through swift expert review of manuscripts. This enables the community to publish rigorous and impactful science that informs scientific advances over decades. Our authors respond very positively to this feedback and comment routinely that the editorial

process results in stronger publications and on the timely and professional service provided by the journal editorial staff. In this way, ASHG functions in strong partnership with federal agencies that fund original research – we support researchers and authors to evaluate, strengthen, document, and curate findings that shape scientific knowledge over time.

AJHG procedures allow for rapid access to research published in the journal. The editorial leadership of AJHG maintains a relatively short six-month embargo period and offers a Gold Open Access option that enables authors to choose immediate public access. All ASHG members worldwide have immediate access to all published content, with discounted rates for members in developing countries to advance equity in global scientific dialogue. We use a subscription model for *non*-members to access content immediately, providing revenue that enables the Society to recoup direct costs of the editorial support, publishing, and peer review process. *AJHG* also opts to exempt one additional paper from the embargo each month to highlight novel findings and publishes many policy pieces free of embargo.

Were the Administration to require changes to rules governing open access, we would request a measured and realistic timeframe for policy adoption and a staged step down from the 12-month period. Simultaneously, we ask that the administration work collaboratively with the scientific community to support, innovate and enable widely deployable, viable, sustainable models that reinforce research integrity, quality, and access. A gradual, rather than abrupt, shift will allow for planning and adoption.

Again, ASHG welcomes the opportunity to provide these comments and looks forward to engaging with you further on this topic.

Sincerely,

A handwritten signature in black ink, appearing to read 'AWynshaw-Boris', written in a cursive style.

Anthony Wynshaw-Boris, M.D., Ph.D.

ASHG President (2020)

RFI Response: Public Access

Subject: Request for Information: Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting from Federally Funded Research

Response from: American Meteorological Society
45 Beacon Street
Boston, MA 02108

Submitted by: Dr. Keith L. Seitter
Executive Director
E-mail: kseitter@ametsoc.org

The American Meteorological Society (AMS) welcomes the opportunity to comment through this OSTP request for information on the public access to peer-reviewed scientific information.

The issues associated with providing public access to peer-reviewed publications, data, and code are quite different and AMS feels each should be addressed independently.

Peer-reviewed scholarly publications

Most scientific publishers, and certainly scientific society publishers such as AMS, having been moving toward more open access of the scholarly journals for many years. Publishers have been converting existing journals to open access, as well as launching new journals that are open access. The most highly ranked publication published by AMS, the *Bulletin of the American Meteorological Society*, has made all its peer-reviewed content open since 1997. Further, many scientific journals, including all AMS journals, have adopted a hybrid publishing model that allows articles to be open at the time of publication after payment of a OA fee, rather than 12 months after publication as mandated by U.S. funding agencies. Further, many publishers, including AMS, have been generous in allowing content to be placed on institutional open access repositories earlier than 12 months after publication. AMS has gone a step further to encourage — and provide the permissions to allow — those repositories to provide the final published form of the article rather than the accepted manuscript to avoid having two versions of the research results available.

Nearly all scientific societies have expressed an explicit goal of increasing the open availability of the research they publish and have been actively working toward sustainable business models that would allow that. At the same time, those society publishers have concerns of losing the important value to the scientific community that is provided by having subscription revenue in addition to author charge revenue:

- Subscription revenue allows author charges to be kept low while still providing the resources needed for high quality publication, with that quality referring to both the rigor of the peer-review process and the editorial quality of the final published form.

- Subscription revenue provides a source of funding that allows a generous author charge waiver policy for those authors who do not have institutional support to cover publication fees. Our experience is that this situation is not limited to scientists from developing countries — though it certainly includes those scientists — but also U.S. researchers who have recently completed degrees or for some other reason have ended up at a new institution that will not provide funding in support of publishing research completed somewhere else.
- With a dual funding source of author charges and subscription revenue, societies can look to publications generating excess revenue that can be used in support of the scientific community. For many societies, this is the only source of funding for some critically important programs that serve the scientific enterprise.

Despite these extremely important considerations, society publishers like AMS have been moving as aggressively as they can toward new business models that provide for more open access publication of research results in ways that are sustainable.

We note here that we have some concern that business models that depend solely on author charges have unfortunate incentives compared to those that include subscription income. When a publisher must depend on subscription income, there are strong incentives to be as selective and rigorous in peer review as possible so that the quality of the published research is beyond question and worthy of a subscriber's funds. When author charges are the sole source of income, there is an implicit incentive for publishers to accept more papers for publication since each provides additional revenue, and even publishers with the best of intentions may relax standards somewhat to meet budget realities. (And, of course, the so-called “predatory publishers” will knowingly forego the quality of the science in order to maximize profits.)

Given the above discussion, the primary recommendation of the AMS is two-fold:

- 1. Embrace as fully as possible the hybrid journal model that allows individual articles to be provided as open access on publication with the payment of an additional open access author charge, and commit to having federally funded research cover that additional charge (with reasonable limits set for it).**
- 2. Allow publishers in the physical sciences to continue evolving their business models over the next few years (ideally five) toward sustainable fully open access journals, and provide for a longer timeframe for publishers covering the social sciences where existing cultures and best practices do not include the author charge practices that have become ubiquitous in the physical sciences.**

The above recommendations do not resolve all the barriers toward sustainable open access of peer-reviewed research results. It should be recognized that specific publishers and specific journals may have unique circumstances that impede the transition toward a fully open access model. Some of these special circumstances were revealed in the publisher meetings held by OSTP in early 2020. AMS would hope that an overarching value of ensuring benefit to the scientific community would always override seeking a “one size fits all” solution.

Data

AMS has a formal Policy Statement on “Full, Open, and Timely Access to Data” (see: <https://www.ametsoc.org/index.cfm/ams/about-ams/ams-statements/statements-of-the-ams-in-force/full-open-and-timely-access-to-data/>), and in that statement AMS reaffirms its “commitment to a policy of full, open, and timely access to data that are critical to the advancement of atmospheric and related sciences, the provision of products and services for the benefit of society, and the promotion of commerce and private-sector activities. Adopting such policies could accelerate scientific discoveries, broaden and enhance participation in scientific enterprise, promote entrepreneurship, and benefit society.”

As noted in the statement:

AMS encourages its stakeholder communities to provide full, open, and timely access to environmental data and derived data products, as well as all associated information necessary to fully understand and properly use the data (metadata). In this context, *full* means that all data and metadata should be available, *open* means that it should be available to anyone who requests it, and *timely* means that it should be available as soon as possible, particularly in the case of data critical to human health and safety. These data are at the foundation of efforts to ensure public safety and national security, as well as efficient management and use of weather- and climate-sensitive sectors and systems such as water resources, transportation, and agriculture. Environmental data are used to protect critical infrastructure and support scientific publications, and they are essential for routine and high-impact weather forecasting and warning and climate monitoring. “Data,” in this statement, refers to entities or outputs used as evidence of phenomena for the purposes of research or scholarship. The spectrum of data is diverse and includes in situ and remotely sensed observations, environmental predictions generated by numerical models, and data products derived from integrations of observational and model-generated sources.

All publications should follow a comprehensive data archiving and access policy (see, for example, the AMS policies <https://www.ametsoc.org/index.cfm/ams/publications/ethical-guidelines-and-ams-policies/data-policy-and-guidelines/>)

Specific disciplines may face additional challenges associated with making data broadly available. For example, the datasets associated with environmental observations can be so large as to be difficult to manage in traditional ways. In addition, observational datasets may undergo multiple levels of quality control and adjustment processes, with the final research results having dependencies on the processes used in each step, making it difficult to know which versions of the datasets need to be archived (from raw unprocessed to fully quality-controlled) in order to fully meet the needs of other researchers. Finally, it may not be possible to archive all data in perpetuity due to the sheer magnitude of these files. It will be important for OSTP to work with agencies to develop guidelines as to which datasets should be permanently stored and which ones should be archived for an agreed fixed period of time.

There are often significant costs associated with the collection, creation, storage, value-adding, and distribution of data. AMS has noted that it is therefore reasonable for commercial data providers to charge for access to their data at rates commensurate with their value and costs.

Government agencies, academia, and private-sector entities face additional challenges in meeting the goals of open data. Some of these challenges include policies that inhibit the widest possible use of data, such as resource constraints, intellectual property rights, ethical and legal constraints related to human privacy or personal data ownership, and inadequate infrastructure to properly maintain and administer datasets. As one example, the European Union's General Data Protection Regulation (GDPR) regulates the use of data that may be directly or indirectly related to individuals from the European Union.

The AMS recommends:

A set of principles and recommendations outlined in the AMS Policy Statement “Full, Open, and Timely Access to Data” (see: <https://www.ametsoc.org/index.cfm/ams/about-ams/ams-statements/statements-of-the-ams-in-force/full-open-and-timely-access-to-data/>), **which seeks to balance the many challenges in ways that align with the growing international movement to enable scientific data to be FAIR: Findable, Accessible, Interoperable, and Reusable** (Wilkinson, M. D., and Coauthors, 2016: The FAIR Guiding Principles for scientific data management and stewardship. *Scientific Data*, 3, 160018. <https://doi.org/10.1038/sdata.2016.18>).

Code

Making the computer code used in a research study freely available offers its own challenges. These include:

- The code may be specific to a particular hardware or operating system configuration that is not easily replicated.
- Given the rate at which hardware and system software is updated and replaced, the code used for a particular study may not be executable on currently available systems even a short time after the research project has been completed.
- Sections of the program may include proprietary code that the researcher is not licensed to share.
- Even if best practice software standards are followed in the documentation of the code, its use may require levels of expertise that are not widely available in other research groups.

These challenges are longstanding and not easily overcome, and any policy on making code openly available to other researchers must recognize and accommodate the limitations in achieving that goal. It is unreasonable to place as burdens on researchers the requirement that shared code must be maintained into the future as executable code, or even that the researchers are responsible for providing anything more than industry standard documentation on the code.

AMS recommends:

Policies covering the open availability of code used in research studies should require the code to be documented following industry standards, including documentation on the hardware and system software used to execute the code. The policies should not require researchers to provide any additional assistance in using the code or modifying it to be executable on another system.



Subject: Request for Information: Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research

From: The University of Virginia

Introduction

Thank you for the opportunity to provide input on federal policies related to *Public Access to Peer-Reviewed Scholarly Publications, Data, and Code Resulting From Federally Funded Research*. As Virginia's flagship public research university, the University of Virginia is deeply committed to advancing US research and competitiveness for national benefit. This response is informed by our role as both consumers and producers of research publications, data, and code. The University also contains substantial expertise in this area, including a close partnership with the Center for Open Science, and with several former federal officials responsible for data sharing and promoting access contributing to this response. We strongly believe in increasing access to research results to both enhance research progress and enable more transparency and reproducibility. However, any changes to federal policies should be mindful of the delicate research ecosystem and balance the needs of stakeholders in that system.

What current limitations exist to the effective communication of research outputs (publications, data, and code) and how might communications evolve to accelerate public access while advancing the quality of scientific research? What are the barriers to and opportunities for change?

The U.S. government spends billions of taxpayer dollars on research, and the public has a right to access and use those results. The current policy for publications allows access after one year for free or earlier through journal subscriptions. This access should be expanded in a thoughtful way, and there is also a need to address access to data and code. Access to the data necessary to reproduce scientific studies is critical because the results of so many peer-reviewed studies have proven to be impossible to reproduce. In addition, public access to data affects not only the efficacy of public policies but also public trust in the federal government's actions. Funders increasingly require researchers to plan for the responsible management and (in most cases) publication of the data resulting from funded research activity. However, even where data sharing has been mandated, compliance is rarely enforced and there are limited resources to fund these efforts.

Barriers for data sharing include:

- Incentives are not aligned with sharing prior to publication which often leads to data being inaccessible for years, and especially leads to data on negative result being unavailable as scientists seek to publish their best results;
- When data is shared, it is often in formats or on sites that make it hard to use as there are few standardized systems;
- Data and code need to be maintained to be useful to others. Maintenance and storage of data is expensive with no clear funding source; and
- Post-publication data is often not adequately linked to peer-reviewed publications making further research and use difficult.

For peer-reviewed publications, access remains expensive for the University, with an annual collections budget of \$10 million. For our institution, subscription costs continue to rise at a rate of six to twelve percent annually. New publications remain inaccessible for others in our community. Disparate levels of access to information are a challenge to UVA's commitment to community-engaged research. Local government agencies, non-profits, and community members rarely have access to cutting edge research that can drive success in collaboration with university researchers.

Access to bibliographic and citation metadata is currently quite limited. Efforts at the UVA School of Data Science to create an open, authoritative record of the research activity at the University through publications analysis have hit multiple barriers. Most publishers make articles and, in some cases, data and other ancillary materials available in flat formats like PDF. These formats dramatically reduce the utility of research outputs, making them inaccessible for computational uses such as text and data mining (TDM), machine learning, and processing by artificial intelligence. Accessing large numbers of articles for computational uses can be especially difficult, even for subscribers with each publisher requiring their own agreement for text analysis.

Publishers' insistence that access be channeled through their portals can also be frustrating for researchers, even in the course of traditional research, as researchers rarely think of articles in terms of which publisher platform they inhabit. Federal repositories are helpful to provide a single location where articles are located. Private efforts such as Google Scholar are also useful to make searching for articles more straightforward.

What more can Federal agencies do to make tax-payer funded research results, including peer-reviewed author manuscripts, data, and code funded by the Federal Government, freely and publicly accessible in a way that minimizes delay, maximizes access, and enhances

usability? How can the Federal Government engage with other sectors to achieve these goals?

The federal government has an important role to play in addressing the barriers discussed above. There are several ways the federal government could improve access to data and scientific code:

- Encourage and provide resources for sharing of metadata, software, code, and other pieces of the research process to enable reproducibility and increase research quality. This includes training, professional development, and other kinds of stakeholder engagement to change faculty culture around data sharing and build skills for data and code maintenance.
- Build infrastructure to enable data and code sharing among researchers, across platforms and disciplines. This includes infrastructure that enables text and data mining from publications. Federal agencies have made some steps in this direction, such as through the NIH Commons Framework or the NSF Earth Cube effort, but sharing infrastructure continues to lag behind need and has not reached a scale to encompass broad research efforts across the federal research enterprise.
- Fund research on reproducibility and data and code sharing to tackle remaining technical challenges and better social science understanding of how to incentivize sharing. For example, this could include new techniques to enable privacy for sensitive data or studies of how to change incentive systems among scientific teams.

For peer-reviewed publications, the federal government should look for ways to enable gold open access with minimal or zero embargo. In doing so, it will be important to not merely shift costs in the system to researchers, but to enable sustainable change. Policies should also be cognizant of the larger collaborative ecosystem that publishing enables and ensure these collaborative efforts can continue to be supported under any new system. Additional changes that would enable access include:

- Data (and code, software, etc.) needed to validate/replicate the conclusion of articles should be made **immediately available**. Where exceptions are necessary (e.g., due to privacy or security concerns), the justification for withholding public access should be published and a process should exist for researchers to challenge the withholding of data, or to request private access where possible.
- Other appropriate data should be released following **FAIR (Findable, Accessible, Interoperable, Reusable) Data principles**.
- Final peer-reviewed manuscripts or published articles should be made available in **open and machine-readable formats** that fully enable productive reuse including text/data mining and computational analysis.

- Access to these materials should be provided via either a digital repository maintained by the Federal agency or in any repository meeting appropriate criteria to ensure high quality.

How would American science leadership and American competitiveness benefit from immediate access to these resources?

The benefits of the reforms described above are numerous. Most importantly, they will alleviate the harms caused by access that is delayed, costly, unequal, inefficient, inaccessible for machine uses, irreproducible, and unavailable for reuse. Openness begets openness, and as the amount of open research grows, so will the skills, tools, methods, and other affordances that support and build on open research. We believe, therefore, that if the federal government adopts a broader, deeper open research policy, research will be improved and accelerated.

Openness should also improve reliability of research as researchers seek to confirm the results of articles published in scientific journals. Access to data is critical for agencies to maintain transparency and for the researchers and public to have a meaningful opportunity to participate in the process.

There are challenges to moving to a more open system. These include risks to privacy caused by personally identifiable data (PID). Some measures to protect sensitive information include data de-identification, imposing nondisclosure agreements, requiring online training for researchers on how to protect PID etc. Research should be supported to continue to improve methods for addressing privacy and de-identification techniques.

As other countries adopt open access policies, they become more advanced in their scientific research. The U.S. will be left behind in research, education and business if we do not adopt this movement. Indeed, the U.S. is being left behind; other countries and even entire regions, such as the EU and much of South America, are adopting open access policies to accelerate their scientific research, boost innovation, and increase competitiveness.

The outbreak of COVID-19 across America and the world has shown how valuable public access to research is. Most publishers have now opened all research published through them for consumption by whomever needs it. BioRxiv and medRxiv, two of the leading preprint repositories for the health sciences, has 535 articles posted (as of March 16, 2020) on COVID-19 SARS-CoV-2. In our current situation, researchers and healthcare providers are relying on freely available resources to survive this pandemic.



Our own experience with large-scale, collaborative research shows the benefits of open access. For example, UVA is a member of two massive-scale, National Science Foundation-funded ecological data projects that are generating open data observations that fuel our understanding of climate change and other pressures shaping our environment. The Long-Term Ecological Research (LTER) Network is a project that has made 40 years of ecological observation data publicly available, while the National Ecological Observatory Network (NEON) provides “open, continental-scale access data that characterize and quantify complex, rapidly changing ecological processes.” Together, these resources power research about changes so subtle, and yet so massive, that only wide open collaboration across dozens of sites can make them comprehensible.

Open access is also good for local government and community organizations. In Charlottesville, for example, the group Smart Cville works “to promote technology-driven solutions throughout local government, in Charlottesville and beyond.” Working with the City government, Smart Cville has created open data policies and a variety of projects and resources that leverage data to help citizens better understand the city, from finding an open bike rack to visualizing the city’s budget. A team of faculty, librarians, and community leaders is working on another project, the Cville Equity Atlas, which will help visualize information about housing, schools, transportation, and other factors that affect equity in the City.

Conclusion

In closing, thank you for facilitating a robust discussion of this important issue. We encourage you to implement thoughtful policies to increase access to the results of publicly funded research.



American Society of Agronomy • Crop Science Society of America • Soil Science Society of America

5585 Guilford Road, Madison WI 53711-5801 • Tel. 608-273-8080 • Fax 608-273-2021

www.agronomy.org • www.crops.org • www.soils.org

May 6, 2020

To: Lisa Nichols, Assistant Director for Academic Engagement, OSTP,

Email: publicaccess@ostp.eop.gov

Re: RFI Response: Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research

Dear Dr. Nichols:

The American Society of Agronomy (ASA), Crop Science Society of America (CSSA), and Soil Science Society of America (SSSA) represent more than 8,000 scientists and students. We publish 13 scholarly research journals: six Gold Open Access and seven hybrid titles offering an Open Access option. The societies also support 13,500 Certified Crop Advisers, and more than 700 Certified Professional Soil Scientists. Thank you for the opportunity to provide comments on public access to peer reviewed scholarly publications.

We are concerned that the Office of Science and Technology Policy (OSTP) is considering a policy that would reduce the current 12-month embargo for peer-reviewed publications reporting on federally funded research. Such a policy change could have severe impacts on many professional societies' abilities to invest in publishing and dissemination of peer-reviewed articles and in supporting the U.S. research community through education and other vital professional activities. This change could undermine the government's goals to maximize the impact and accountability of the federal research investment.

Publishers make substantial investments in the coordination of peer review, editing, and long-term stewardship that are essential to maintaining the high quality and integrity of our scholarly publications. These services must remain available to ensure continued opportunities to publish in internationally respected scientific journals. The current 12-month embargo period provides a solid mechanism to publishers and scientific organizations who are engaged in high-quality publishing to recoup these investments.

Publishers contribute creative innovation to the development ecosystem. Development of transformational Open Access agreements are moving the scientific community closer to open science goals. Nonprofit society publishers are at the forefront of disseminating research and the transformation of data into action. These member society publishers provide services beyond just publishing research, including developing the next generation of scientists through support of their communities with educational programs, certifications, and public communication.

We encourage agencies to consider new policies strongly supporting continued publisher innovation and partnerships to ensure long-term preservation and accessibility to federally

funded research. For example, publishers can facilitate easy public searching and efficient access. With creative Silicon Valley partners using cutting edge machine-learning tools, publishers can ensure that the public can locate, read, download, and analyze data and related articles for every type of research conducted or sponsored by an agency and its partners.

OSTP's current open science policies are shifting the publishing community closer to open science goals without causing disruptions to the marketplace. A swift move to zero embargo will undermine the progress that has been made over several years. We understand that open science is a priority of OSTP, and we hope to continue development of new opportunities and partnerships to test ideas without unintended consequences.

To increase access to federally-funded published research and digital scientific data, agencies investing in research and development must have well-defined and uniform policies to support increased access. If OSTP pursues a no embargo policy, many researchers will be forced into a pay-to-publish Open Access model. With no additional money appropriated for publishing costs, researcher reliance on existing grant funds for publishing fees would result in a significant diversion of money away from research. This could slow the communication of research results and diminish the objective of the initiative.

Without an embargo period, opportunities to publish in high quality peer-reviewed journals may decline and costs to researchers could increase significantly. In this case, more authors may choose self-publication. This could result in the erosion of the high level of quality assurance afforded by the publisher-managed peer-review system and lead to a lack of credibility in scientific literature. The scientific community has witnessed this very occurrence in the recent proliferation of inexpensive open access journals that contain material of little scientific rigor.

We urge you not to disrupt our ability to support the advancement of research in agronomy, crop, and soil science. We look forward to working together to identify solutions that foster creativity and advance the goals of open science without undermining the communication of research findings and analyses through peer-reviewed journals.

Sincerely,

A handwritten signature in black ink, appearing to read 'Nick Goeser', written in a cursive style.

Nick Goeser, CEO

Anne T. Gilliland
Scholarly Communications Officer
University Libraries
University of North Carolina, Chapel Hill

May 6, 2020

Lisa Nichols
Assistant Director for Academic Engagement
Office of Science and Technology Policy

Dear Ms. Nichols:

Thank you for this opportunity to discuss The University Libraries' views on public access to federally funded, peer-reviewed scholarly publications, data, and code. As a top research university that also has a strong mission to the citizens of North Carolina and a commitment to affordable education for its citizens, this topic is of great interest to us.

As the University Libraries at the University of North Carolina, Chapel Hill (UNC), we serve a community of about 19,000 undergraduates, 11,000 graduate students, 8,800 staff members and 4,000 faculty. Founded in 1795, UNC is the oldest public university in the United States and enjoys a stellar reputation as one of the top research universities in the nation. Nationwide, we are ranked fifth among research universities for federal research in all fields, and, from all sources, UNC conducts more than one billion dollars of sponsored research annually (Facts and Figures, <https://uncnews.unc.edu/files/2019/07/Facts-Figures-January-20202.png>).

At the same time, UNC has a strong commitment to affordable education, especially to residents of North Carolina. Additionally, our Carolina Covenant program covers all undergraduate costs for eligible students, in state and out-of-state, allowing them to complete college without debt (About the Covenant, <https://studentaid.unc.edu/incoming/what-aid-is-available/carolina-covenant/>). In summary, our commitment to quality education and research and affordable education means that the subject of public access to the fruits of federally funded research is of vital importance to us in fulfilling our mission and using the state's funds wisely.

What current limitations exist to the effective communication of research outputs (publications, data, and code) and how might communications evolve to accelerate public access while advancing the quality of scientific research? What are the barriers to and opportunities for change?

The traditional subscription model for disseminating research is most successful for scholarly publishers, not for the rest of us. Journal subscriptions are exorbitantly priced, and the pricing

model the largest publishers use makes it extraordinarily difficult to reduce costs. Journal prices have risen, and continue to rise, at a disproportionate rate. The largest five publishers form an oligopoly at the expense of universities (<http://www.library.ucsb.edu/collection-development/budget-challenges>).

Academic publishers receive considerable support from public funds. Federal agencies fund most of the research conducted at UNC, and it is reasonable for the results of it to be available to the broader community. Additionally, public universities like UNC pay faculty who write up the research and serve as peer reviewers for journals at no cost to the publishers. Finally, public funds from the taxpayers of North Carolina pay for journal subscriptions that allow faculty to read and study that research. Because of journal pay walls and exorbitant pricing, the citizens who fund that research often have no affordable way to access its results and learn about its findings.

In the current system, choosing open access publishing often involves the expenditure of more money from public funds and is not available equally to all. On the other hand, “Hybrid” open access journals allow authors to make their articles open access immediately upon payment of an additional charge. These additional payments—on top of the ones listed above—generally come from grant funds or from the university’s coffers. This way of funding open access perpetuates inequity and disadvantage younger and less well-funded researchers. It also provides yet another way for citizens to pay again for the research they have already funded.

Additionally, under the traditional model, publishers’ economic interest in scholarly article does not end with the first publication. Their ownership and control of the copyrights in scholarly articles allows publishers to control access and monetization of research far into the future. The authors, funders and universities that do research and support do not control it in the long term or the short term, which makes it difficult for them to complete further research, such as text and data mining and reproducing results.

This lack of access and inequity has real consequences and threatens UNC’s mission. Doctors and patients in rural parts of the state have difficulty getting access to life-saving research. There are profound inequities with the regard to the access to research at the smaller and less well-funded universities and colleges. Increasingly in recent years, even at our campus—the state’s flagship institution—it has become harder and harder to pay subscriptions that disseminate the research that our faculty need. In the next few weeks, we expect to cut about \$1 million dollars from our Elsevier subscription, our largest scholarly journal package, in order to live within our means. We will make the best of the situation by providing other means of access, such as document delivery and interlibrary loan, but the impact on our researchers will be profound (<https://sustainablescholarship.unc.edu/>).

What more can Federal agencies do to make tax-payer funded research results, including peer-reviewed author manuscripts, data, and code funded by the Federal Government, freely and

*publicly accessible in a way that minimizes delay, maximizes access, and enhances usability?
How can the Federal Government engage with other sectors to achieve these goals?*

We support a policy that would provide immediate access to the results of research that the federal government has funded, without an embargo and with some form of open license that allows re-use. Similarly, data that allows reproducibility should be available for re-use, and we support FAIR principles (Findable, Accessible, Interoperable, Reusable) for all data related to federally sponsored research.

Such a policy would be a game changer for us as we face a future where we cannot afford to provide access to all the scholarly journals our researchers need. It would also make an enormous difference to our partners, such as North Carolina health departments and researchers in the Global South who cooperate with UNC researchers. We recognize that publishers and scholarly societies would need time to adjust to a new public access policy. We are already discussing these potential changes with scholarly societies' personnel both locally and nationally and working with them on ways to sustain the most important parts of their work. Starting this year, we have begun to implement a new agreement with Sage Publishers, provides a more equitable approach to article processing charges, and facilitates deposit of accepted manuscripts for all articles where a UNC researcher is the first author. We are eager and willing to work with additional publishers on similar agreements.

That said, mutual agreement is unlikely to result in change in this system without a requirement from federal agencies. To a large extent, publishers have dominated public comment on federal open access policies with mischaracterizations of their role and their financial arrangements. Publishers currently describe the federal government's current policies with a one-year embargo as reasonable and workable, but they were put in place over their intense objections and doomsday predictions.

How would American science leadership and American competitiveness benefit from immediate access to these resources? What are potential challenges and effective approaches for overcoming them? Analyses that weigh the trade-offs of different approaches and models, especially those that provide data, will be particularly helpful.

Open access is the trend of the future in a globalized world where the contributions and well being of all are more valued. Open access publishing leads to incentives for innovation. Around the world, countries are waking up to how they have subsidized a system that is out of control. It is timely and appropriate for our government to push back on a system that is unsustainable and inequitable. Change is difficult for all of us, but publishers of all sizes need to be considering how their role and business models will evolve going forward.

The present crisis of the COVID-19 pandemic provides a stark reminder that our world is interconnected, and we need to solve problems together with access to common information. Many publishers have made articles about coronaviruses open to the public during this time of public emergency. At UNC, we are working with Dr. Ralph Baric, one of the world's foremost

coronavirus researchers, and others in his lab to make their research openly, permanently available to the international community through the Carolina Digital Repository, the university's institutional repository. When our current emergency ends, much research will be pay walled again. In contrast, our vision is to support a system where research, like this is always open.

Public access will be good for society and good for business. Many of the largest journal publishers are multi-national companies, including some of the largest scholarly societies. Additionally, many scholarly societies of all sizes have beneficial financial agreements with the largest publishers. There is nothing wrong with being a multi-national company, but it is disingenuous when publishers who oppose public access policies do so in the name of furthering U.S. private enterprise. On the other hand, greater access to research will support start-up companies and businesses of all sizes, which often find it difficult to get access to the research they need.

In conclusion, it is reasonable and appropriate for government funders to require a system of publication that allows the taxpayers access to articles they have funded. As a public university, we give additional support to scholarly publishing through our faculty's unpaid labor and our heavy subscription costs. We support a proposal that would allow North Carolina citizens and the rest of the world to benefit more directly from our contributions to scholarly research.

Yours sincerely,

A handwritten signature in black ink that reads "Anne T. Gilliland". The signature is written in a cursive, flowing style.

Anne T. Gilliland



May 6, 2020

Dr. Kelvin K. Droegemeier
Director
White House Office of Science and Technology Policy
Eisenhower Executive Office Building
1650 Pennsylvania Avenue, NW
Washington, DC 20504
publicaccess@ostp.eop.gov

Re: RFI Response: Public Access to Peer-Reviewed Scholarly Publications, Data, and Code Resulting from Federally Funded Research

Dear Dr., Droegemeier:

We are writing on behalf of the American Society of Anesthesiologists (ASA) and our 54,000 members in response to the Request for Information: Public Access to Peer-Reviewed Scholarly Publications, Data, and Code Resulting from Federally Funded Research. We also write on behalf of the entire scientific community, which creates the new knowledge for public benefit which is disseminated via scholarly publication, and the public which is both the payor and beneficiary of new knowledge.

ASA recently became aware of a possible change in federal policy that would mandate immediate free global access to publications resulting from federally funded research. As you know, the primary vehicle for sharing high-level scientific knowledge is through peer-reviewed scientific and medical journals, including ASA's *Anesthesiology*. Like other medical journals, much of the research published in *Anesthesiology* is made possible by federal grant funding. We understand an impetus for the RFI is, in part, due to non-compliance with the 2013 memorandum "Increasing Access to the Results of Federally Funded Scientific Research." Over the last seven years, ASA has helped our authors and federal agencies comply with the memorandum, which calls for a twelve-month post-publication embargo on publications resulting from federally funded research. In fact, articles published in *Anesthesiology* that are derived from federally funded research are deposited and publicly available in PubMed Central just six months post-publication. Additionally, all articles published in *Anesthesiology* are openly accessible, in their final published format, six months after publication on the journal website, www.anesthesiology.org.

The United States has a proud history of promoting and leading the world in scientific research and discovery. These accomplishments and their public benefit would not be possible without the generous support of federal funding - an approximately \$135 billion investment for research and development. This funding not only promotes scientific and medical innovation, it saves lives.

As such, ASA understands OSTP's interest in making the knowledge, information and data generated by federally funded research more readily accessible for its stakeholders, including the general public, who support federally funded research as a means to accelerate knowledge and innovation. However, ASA encourages the administration to focus on compliance with the current policy rather than upending the established norms.

While we support transparency and access to research, we believe the proposed policy change, eliminating the embargo on publications resulting from federally funded research grants, would pose a significant and immediate threat to scientific discovery, medical innovation, and patient safety. Such a change could also

have an unnecessary, adverse impact on the hundreds of journals, like *Anesthesiology*, that currently publishing federally funded research.

During the initial embargo period (prior to mandatory free global access), U.S. based non-profit medical society journals like *Anesthesiology* publish research-based manuscripts under a model that allows the use of publishing proceeds to support mission driven activities, including the rigorous peer review process that ensures only the highest quality research is published; editing and publication costs; and the cost of distribution to U.S. science and medical communities.

Requiring that federally funded scientific research be made freely available to the global market before medical journals are allowed a brief opportunity for exclusive publication will have immediate and significant negative results:

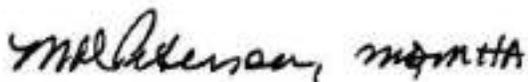
- The United States may lose its position as the global leader in scientific and medical research and innovation.
- Non-profit medical society journals like *Anesthesiology* will be unable to fund essential peer review and production and distribution costs.
- Global competitors will quickly fill the void left by U.S. scientific and medical journals, using research funded by U.S. taxpayers to replace us as leaders in the global marketplace.
- Patient safety will suffer in the United States as our ability to effectively review, publish and distribute important scientific and medical research will be greatly impacted.

ASA and our 54,000 members stand as proud ambassadors of transparency and open access in scientific and medical research. Our commitment is supported by a broad distribution network; elective open access; sharing of scientific discovery at our Annual Meeting; and the promotion of our own research funding through millions of dollars in annual support to ASA's affiliated foundations, the Foundation for Anesthesia Education and Research (FAER) and the Anesthesia Patient Safety Foundation (APSF).

The current model is shared by countless other medical societies and scientific organizations throughout the country and has contributed greatly to the U.S.'s role as the world leader in scientific and medical innovation. Unnecessary disruption to the model would threaten innovation and jeopardize patient safety.

We urge this administration not to take any action until all interested stakeholders have had the opportunity to meaningfully and actively participate in this important discussion. This discussion must include, at a minimum, a thoughtful determination of what problem (if any) we need to solve, and a comprehensive exploration of alternative solutions that would not unnecessarily disrupt scientific and medical innovation.

Sincerely,



Mary Dale Peterson, MD
President, American Society of Anesthesiologists



Evan D. Kharasch, MD, PhD
Editor-in-Chief, *Anesthesiology*

Tina Baich

tina.baich@gmail.com

tinabaich.com

Response to [OSTP RFI on Public Access to Federally Funded Research](#)

My sincerest thanks to the Office of Science and Technology Policy (OSTP) for taking a deep interest in this topic and seeking input from stakeholders. I am honored to enthusiastically respond to the Request for Information from the OSTP concerning open access to federally funded peer-review research. My name is Tina Baich, and though I write now as a private citizen, my role as an academic librarian necessarily informs and influences my thinking on this topic. I work as a library administrator at a public, urban research university in Indianapolis, Indiana. My library is a committed advocate of open access, and this commitment has been infused into me personally through my fourteen years there. I firmly believe that publicly-funded research should be promptly and freely disseminated.

What current limitations exist to the effective communication of research outputs (publications, data and code) and how might communications evolve to accelerate public access while advancing the quality of scientific research? What are the barriers to and opportunities for change?

Comprehensive access to all research outputs can be difficult, even beyond the paywalled articles of subscription journals. The growth rate of open access continues to rise, but at a very slow rate so that the full impact of the open access movement has yet to be realized. Traditional publishing practices and processes have proven to be closed, blackbox systems and too slow to change to be truly effective, especially when compared to the potential that new technology can provide. For the past thirty years, funders, libraries and research institutions have been creating policies and initiatives to nudge the system towards positive and lasting change. With increasing momentum (e.g. [Plan S](#)), these stakeholders continue to adopt and adapt these policies as needed and have come to know that those imposing paywalls are often serving interests that do not mirror the mission of the research community. Thus, this is an opportune time for federal agencies to take the natural next step to further improve open access to research.

Equitable access to information is a tenet of librarianship and essential to the advancement and creation of knowledge. The current methods for disseminating scholarly information in the U.S. prevents millions of taxpayers, whose tax dollars fund more than \$60 billion in scientific research each year, from accessing information that could enhance their health and well-being. As the current pandemic has so clearly illustrated, research locked behind paywalls slows scientific progress and the development of medical treatments and even cures. By reinforcing the research community's commitment to sharing research data and information and

eliminating the obstacles that slow down progress, we can accelerate the development of new innovations for the world's most vulnerable populations.

When discussing who lacks access, the focus is often on those outside of academia, and appropriately so. However, even the privileged can and do suffer from a lack of access to publicly-funded research. From an academic library perspective, it was impossible for us to subscribe to all the journals our academic community might want prior to the pandemic, despite devoting approximately two-thirds of our entire collections budget to journal and database subscriptions. Due to financial losses related to the pandemic, we anticipate significant budget reductions, which will further reduce our ability to sustain subscriptions and will make it increasingly difficult to provide access through alternative paid methods. My campus is the home of one of the largest medical schools in the United States and is at the center of a \$77 billion life sciences industry in Indiana--the second largest in the nation.¹ As researchers from central Indiana begin to lose access to scientific research and data, much of this economic vitality could be compromised. A national public access policy is one way to help Indiana and the nation recover and prosper.

While there are challenges to accelerating public access to research, we are able to overcome and solve those challenges with modern infrastructure, strong policies, and our desire to completely change the way in which research is disseminated. The biggest opportunity is to establish, promote, and enforce policy that moves the sector closer to removing these barriers to energize global collaboration to solve the world's greatest problems. Such opportunities are being lived out right now with the Coronavirus (COVID-19) outbreak changing how [researchers communicate](#). Now is the time to embrace this change and place urgency on all issues recognizing "what is made clear in this moment of crisis: a robust scientific system and an informed citizenry requires immediate and [public access to research](#)."

What can Federal agencies do to make taxpayer funded research results, freely and publicly accessible?

The federal government should implement a strong national policy to ensure that taxpayers finally get immediate, barrier-free access to the full results of the scientific research that their tax dollars have funded. Setting such a policy and educating grantees on their options for compliance will prioritize the importance of open and available research outputs and highlight the time savings, breadth of access, and reusability. It will also inspire other U.S. funders and

¹ "Indiana's Life Sciences Industry Continues to Grow." *BioCrossroads*, March 24, 2020, <https://www.biocrossroads.com/indianas-life-sciences-industry-continues-to-grow/>.

institutions to follow the government's lead. To truly make change, this policy should include the following.

- Eliminate embargos. Final peer-reviewed manuscripts or published articles and the data (and code, software, etc.) needed to validate/replicate the conclusion of an article should be made available immediately upon publication.
- Articles must be openly licensed to ensure full utility of articles. (CC-BY or similar license, or public domain designation)
- Data should adhere to the [FAIR Principles](#) (Findable, Accessible, Interoperable, Reusable).
- Final peer-reviewed manuscripts or published articles should be made available in open and machine-readable formats that fully enable productive reuse including text/data mining and computational analysis.
- Free public access to and long-term preservation of final peer-reviewed articles or published versions and supporting data should be provided via either a digital repository maintained by the funding agency or an academic/research institution.

Implementation of such a policy would accelerate the pace of scientific discovery and provide greater access to U.S. taxpayers, even those affiliated with a university. A national public access policy would provide some budgetary relief to academic libraries struggling under the existing subscription model and allow for the redirection of resources toward much needed services for researchers and support for scholarly societies.

Library subscription dollars currently play a significant role in supporting the operations of scholarly societies, and libraries would continue to support scholarly societies in new ways. For instance, a number of academic libraries, including my own, offer open access journal publishing platforms and support. Libraries will work with societies to develop new, more sustainable publishing models and help mitigate the financial risks they may perceive. Without a strong public access policy, small publishers will most keenly feel the economic impact of the pandemic and the major publishers who already rake in enormous profits will be well positioned to exploit the market and further consolidate their power to enhance their oligopoly control of scholarly publishing.²

² Moore, Samuel. "COVID-19 and the Future of Open Access." blog post, April 7, 2020, <https://www.samuelmoore.org/2020/04/07/covid-19-and-the-future-of-open-access/>.

What can Federal agencies do to make taxpayer funded research results, freely and publicly accessible?

Currently, America is being left behind as public access policies become the global norm. Providing public access to publicly-funded research outputs is a widely accepted international policy strategy to increase the government's return on investment in research, accelerate scientific research, boost innovation, and increase competitiveness. For example, the [European Commission](#) has a full open access policy for its articles and data, and [Canada](#) recently released its [Roadmap for Open Science](#). Other countries, including India, China, and Brazil, as well as research funders like the Gates Foundation and the Wellcome Trust also have policies.

This is a major opportunity for America to lead globally in a reimagining of research dissemination. Without the privileged access to subscriptions, industry and academia either experience a lack of information, use piracy, or rely strictly on open access materials to inform their work, which may provide only a partial view of a topic if other research is paywalled. In regard to the global research stage, we do not want U.S. industry to lag in or lack information that can provide a competitive advantage. In publishing quickly and openly, U.S. authors can establish themselves as leaders and remain competitive in the research space.

Thank you for your time, consideration, and attention on this important topic.

Sincerely,
Tina Baich
435 Spring Mill Lane
Indianapolis, IN 46260



600 Pennsylvania Avenue Suite 400, Washington, DC 20003

Office of Science and Technology Policy
Executive Office of the President
Eisenhower Executive Office Building
1650 Pennsylvania Avenue
Washington, DC 20504

May 6, 2020

RE: Request for Information: Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research

Dear Lisa Nichols:

Thank you for the opportunity to comment on the Office of Science and Technology Policy's (OSTP) proposed policy for immediate public open access to the results of federally funded scientific research. We write to you today in support of the proposal, and with recommendations for implementing the program to make it stronger, more effective, and ultimately help more students.

The U.S Public Interest Research Group (PIRG) is the federation of state non-profit, non-partisan public interest advocacy organizations that stand up to powerful interests whenever they threaten our health and safety, our financial security, or our right to fully participate in our democratic society. In addition to our citizen members, the Student PIRGs work to get young Americans the skills, opportunities and training they need to create a better, more sustainable future for all of us, particularly when it comes to the unique problems we experience as college students.

We'd like to offer the following comments in response to the White House's request for information:

- 1. What current limitations exist to the effective communication of research outputs (publications, data, and code) and how might communications evolve to accelerate public access while advancing the quality of scientific research? What are the barriers to and opportunities for change?*

As college students, we get access to many academic journals that publish the results of federally-funded research. However, the lack of immediate open access still poses barriers. Faculty can only teach students the latest research that they have access to - and students can only learn from what is passed along to them, or easily discoverable.

In an age where institutions as respected as the University of North Carolina and the University of California system - where our student members are enrolled - are cancelling their contracts with major academic publishers due to their high costs, it seems absurd that some of the premier institutions and faculty generating this new knowledge don't even have the ability to freely share it with their peers and students. Work-arounds like emailing the author directly or sharing access with a friend become unmanageable at scale. We shouldn't be making faculty and students jump through such hoops to get basic information when, as the taxpayers who funded it, we have a basic right to access and use it.

- 2. What more can Federal agencies do to make tax-payer funded research results, including peer-reviewed author manuscripts, data, and code funded by the Federal Government, freely and publicly accessible in a way that minimizes delay, maximizes access, and enhances usability? How can the Federal Government engage with other sectors to achieve these goals?*

We recommend that Federal agencies eliminate the current year-long embargo, and require that all federally funded research be published under an open license and made immediately available to the public. Additionally, data and articles should be made available in machine-readable formats that make data mining and computational analysis easier.

- 3. How would American science leadership and American competitiveness benefit from immediate access to these resources? What are potential challenges and effective approaches for overcoming them? Analyses that weigh the trade-offs of different approaches and models, especially those that provide data, will be particularly helpful.*

As we approach graduation under the threat of COVID-19, the threat of loss of access to that essential data and research is very real. Once we graduate, our library card will expire - and along with it, access to academic journals. For those of us looking to start our careers, this hard cutoff will hurt us as we look to be competitive job applicants and to stay current on the latest data and research.

Today's college students are the innovators and entrepreneurs who will drive the economy as we leave the COVID-19 recession behind, the healthcare professionals who will care for current patients and future generations, and the researchers who will save lives by discovering new treatments and vaccines. Ensuring public access to publicly funded research benefits everyone - and will save lives.

It's also worth noting that many other countries have open access policies already in place. The current embargo on immediate open access puts America at a competitive disadvantage during the best of times - and during a pandemic, the stakes are even higher.

We appreciate the opportunity to submit these comments on behalf of current and former college students nationwide, and hope that the White House will strongly consider our recommendation to give the public open access to federally-funded scientific research.

Sincerely,

Kaitlyn Vitez
U.S. PIRG Higher Education Campaign Director
kvitez@pirg.org
908-894-0642

Nicholas Riani
CalPIRG Students State Board Chair

Kyleigh Hillerud
ConnPIRG Students State Board Chair

Isabel Muir
Florida PIRG Students Chapter Chair

Sonja Neve
MaryPIRG Students President

Brendan Geraghty
MassPIRG Students State Board Chair

Caitlyn Sigafose
NCPIRG Students Chapter Chair

Oriana Holmes-Price
NJPIRG Students State Board Chair

Elizabeth Radcliffe
Oregon Student PIRG State Board Chair

Nick Schmitt
WashPIRG Students State Board Chair

May 6, 2020

Lisa Nichols,
Assistant Director for Academic Engagement, OSTP
via email publicaccess@ostp.eop.gov.
in the subject line of the message.

Dear Ms. Nichols,

I am writing to provide my insights and recommendations on approaches for ensuring broad public access to the peer-reviewed scholarly publications, data and code that result from federally funded scientific research.

I am a scientist doing computational biomedical research, with substantial relevant experience. I have published more than 100 peer-reviewed scientific articles and released dozens of open source scientific computer programs and systems. I worked inside the federal government (at the National Library of Medicine, NLM) for a decade and have been a recipient of continuous federal (NIH) grant support for the two decades since then. I am the co-founder and first president of the International Society for Computational Biology. Perhaps most importantly for this comment is one of my major research themes is the application of natural language processing and machine learning technology to biomedical journal publications.

Difficulty with access to the peer-reviewed scientific literature under licensing terms that are compatible with text mining (the application of computational analysis to that literature) have been impeding important scientific research for years. Not even all of the articles that are “openly” available to the public through the NLM’s PubMedCentral are available for text mining, due to restrictions publishers have forced on the Library. The lack of availability of the entire, full-text biomedical literature for computational analysis cripples an important new route to scientific insight, and stifled the discovery and invention of important biomedical innovations.

Let me provide an illustrative example from my own work. I am funded by the National Center for Advancing Translational Science (NCATS) to bring high performance text mining to the Biomedical Data Translator project (my NIH grant is OT2TR003422; overall project is described here <https://ncats.nih.gov/translator>). The goal of the Translator is to advance the development of high-need cures and reduce significant barriers between research discovery and clinical trials. My role is provide AI-ready knowledge mined from the literature. One of the explicit milestones in this federally funded work is:

Create a scientist-based movement to improve access to closed biomedical journal publications for text-mining. Publications from several important journals (e.g. *Science*, *Nature*, *Cell*) are not generally available through PMC-OA. We propose organizing the *authors* of these articles to unlock their works for text-mining. In year 1 we plan to use license-based PubMed search to identify articles and ORCIDs to find author contact information of articles not currently accessible for text-mining. In consultation with the Translator community and other biomedical open access organizations (e.g. Force 11), we will develop materials and strategies that encourage authors to take individual and organized actions to improve accessibility. We will quantify the number of articles unlocked in this way, and pursue these actions until all relevant biomedical publications are available for text-mining.

It is striking that the federal government is paying me to creatively work to open up more of the biomedical research literature—that federal government largely paid for in the first place! If it weren't for the publisher-driven barriers put in place on computational access to the entire full-text peer-reviewed scientific literature, the entire Translator project would be able to achieve its goals more effectively, more quickly and at substantially lower cost.

This is not some abstract argument about rights: the lack of computational access to the full text scientific literature is preventing the application of revolutionary new methods in AI and machine learning to developing urgently needs treatments for patients and other biomedical research. Recent progress in artificial intelligence, such as the breakthrough “contextualized language model” approaches of the last few years (e.g. GPT-2, ELMo, BERT, etc. see <https://arxiv.org/abs/1802.05365>) depends on training with very large amounts of text. Attempts to replicate the general success of such models in biomedicine (e.g. BioBERT, SciBERT) are restricted to training on openly available article abstracts or the Open Access subset of PubMedCentral. This has substantially hampered progress in application of these important new tools in biomedical research.

However the federal government moves to make taxpayer-funded scientific research results, particularly peer-reviewed scientific publications, more available it is critical for the advancement of biomedical research that these results be available for mass computational analysis. American science leadership and American competitiveness would benefit enormously from immediate access to these resources through text-mining alone, and I am sure there are many other benefits as well.

Sincerely,

Lawrence Hunter, Ph.D.

May 6, 2020

Lisa Nichols, PhD
Assistant Director for Academic Engagement
White House Office of Science and Technology Policy

RE: Request for Information: Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting from Federally Funded Research [FR Doc. 2020-03189]

Transmitted electronically via email: publicaccess@ostp.eop.gov

Dear Dr. Nichols,

As the Chief Executive Officer of the Federation of American Societies for Experimental Biology (FASEB), I appreciate the opportunity to provide feedback on the Request for Information (RFI), "[Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting from Federally Funded Research](#)." While FASEB is well-known for its advocacy and science policy initiatives on behalf of its 28 member societies, the response to this RFI reflects my perspective as the leader of an organization that includes publication of two journals as part of its contributions to the scientific enterprise and business model.

Published since 1987, *The FASEB Journal* has over 150 papers submitted per month and is considered one of the top journals in its molecular and cellular biology cohort. *The FASEB Journal* is managed by an 80-person volunteer editorial team with almost 16,000 researchers participating as reviewers. Recognizing researchers' preference for choice in publication method and licensing, *FASEB BioAdvances* was introduced in 2018 to provide a fully open access that is now indexed by PubMed.

Both *The FASEB Journal* and *FASEB BioAdvances* reflect FASEB's commitment to fostering the exchange of high-quality scientific information through rigorous peer and editorial review. Without these processes, we risk reducing the quality of research outputs, deleterious not only to the scientific community, but public health as well. Therefore, I join the leaders of other scientific organizations in urging OSTP to refrain from implementing abrupt changes to the current public access policy that requires peer-reviewed manuscripts to be made publicly available no later than 12 months after official publication date.

My responses to the specific questions posed within the RFI are noted below.

What current limitations exist to the effective communication of research outputs (publications, data, and code) and how might communications evolve to accelerate public access while advancing the quality of scientific research? What are the barriers to and opportunities for change?

Research results are made available through several pathways, including immediate access to publication abstracts on PubMed and authors may distribute manuscripts for noncommercial use upon request prior to publication on PubMed Central. Many journals, including FASEB's, also offer authors the opportunity to make their research immediately available, either through open access fees or blanket open access policies.

While access to research results has become less of a barrier as a result of current public access policies, a greater challenge is the valuation of publications as indicators of research quality and impact by promotion and tenure committees and reviewers of Federal grant applications. Journal Impact Factor (JIF) is a proprietary metric that reflects annual average of citations of articles published in a particular journal that has been misused as a proxy of article and thus scientific quality. Although article-level metrics are a more appropriate measure of scientific impact within a field, they are less accessible than the broader JIF. As a result, researchers push to publish their work in journals based on a metric rather than relevance to the field. Many scientific society journals offer a key vehicle for sharing rigorously reviewed research findings with others in the field. However, since these represent more niche offerings, these journals will never have a JIF (and thus prestige) comparable to broader, multidisciplinary journals.

Rather than altering public access policies, OSTP could enact deeper change by initiating stakeholder conversations regarding the assessment of a researcher's contributions to furthering scientific knowledge. Misuse of existing metrics coupled with discrepancies between investigators' ability to pay for publications could result in scientific communications via peer reviewed journals grinding to a halt and slow progress on critical public health concerns such as infectious and chronic diseases.

What more can Federal agencies do to make tax-payer funded research results, including peer-reviewed author manuscripts, data, and code funded by the Federal Government, freely and publicly accessible in a way that minimizes delay, maximizes access, and enhances usability? How can the Federal Government engage with other sectors to achieve these goals?

The current public access policy that requires peer-reviewed manuscripts resulting from federally-funded research to be made publicly available no later than 12 months of publication within a journal represents years of engagement with stakeholders including individual scientists, patient advocates, scientific societies, and for-profit publishers, and a phased-in implementation process. Even with this extensive process, there were early challenges to balancing scientific quality with access that have since been resolved in the current publishing environment. As data sets increase in size and complexity, a new challenge is curation so that information can be Findable, Accessible, Interoperable, and Reusable (FAIR). FASEB recognized the important role of individual researchers, publishers, and research sponsors in its consensus [statement](#) on data management and access, and we urge continued emphasis of these best practices to ensure utility of the data underlying scientific publications rather than altering publication structures and processes.

A researcher's contributions to the scientific dialogue are intertwined with their career progression and performance assessments. While it is not the role of OSTP to dictate best practices for promotion and tenure or grant funding, it is important to consider unintended consequences of altering existing publication structures on this process.

For example, the higher costs associated with publishing an article in a journal with no embargo could lead researchers to publish more articles in lower cost, lower quality, or even predatory journals in order to increase their number of publications. While this results in a larger publication record which is considered by promotion and tenure committees and grant reviewers, these assessments often consider publishing metrics like JIF, journal brands, and quality as more important measures of an individual researcher's performance. Thus, policies that create uneven publishing opportunities could inadvertently put younger and less established researchers at a disadvantage for career advancement. Although improvements to the publishing system are needed, many additional conversations with faculty, researchers, and research administrators will be needed to identify both incremental and long-term changes.

Establishing separate funding pools for researchers who wish to pay additional fees for immediate open access is a way to provide a funding mechanism while not preventing authors from submitting to the journal that best fits their work. FASEB's two journals already provide this option for all published articles.

How would American science leadership and American competitiveness benefit from immediate access to these resources? What are potential challenges and effective approaches for overcoming them? Analyses that weigh the trade-offs of different approaches and models, especially those that provide data, will be particularly helpful.

There is no evidence that the current model of public access negatively impacts the United States' leadership in scientific research or competitiveness. In fact, over half of manuscripts accepted by *The FASEB Journal* are contributed by international scholars seeking to balance high quality peer-review and research visibility with economic value. However, an abrupt change to these policies would negatively affect the Nation's stature and competitiveness in STEM fields.

Any additional information that might be considered for Federal policies related to public access to peer-reviewed author manuscripts, data, and code resulting from federally supported research.

As the major sponsor of research activities conducted in the U.S. and beyond, Federal agency policies have a significant impact on individual scientists, research organizations, and publishers. Therefore, OSTP and individual agency heads should take additional care to engage all stakeholders in setting policies pertaining to scientific publishing – the lynchpin for so many activities related to appropriate stewardship of federal funds. Similarly, these discussions should examine the impact of U.S. policies on international collaborations and the downstream effects on scientific progress and integrity.

Thank you for the opportunity to provide input on this important issue. Please do not hesitate to contact me if we can provide additional information regarding our experiences publishing *The FASEB Journal* and *FASEB BioAdvances*.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Frank Krause', with a long horizontal flourish extending to the right.

Frank Krause, CAE
Executive Director and CEO, Federation of American Societies for Experimental Biology
Publisher of *The FASEB Journal* and *FASEB BioAdvances*

FAO: Dr Lisa Nichols, Assistant Director for Academic Engagement, OSTP

Sent by email to: publicaccess@ostp.eop.gov

Re: OSTP RFI on enhancing access to the outputs of federally funded research

Dear Dr Nichols

We are delighted to submit this response to the OSTP's consultation on enhancing access to the outputs of research. F1000 Research provides online-only, Open Access (OA) publishing outlets (Platforms), born out of a demand to rethink how research is shared and published, and thus have considerable experience in developing our approaches designed precisely to enhance access to research findings. In 2013 we launched what was the first open research publishing platform, F1000Research¹, combining the ability to publish rapidly with functionality to ensure transparency, robustness and reproducibility of research.

Our approach to publishing effectively combines the benefits of 'pre-printing' (*providing rapid publication with no editorial bias*) with mechanisms to assure quality and transparency (*invited and open peer review, archiving and indexing*). Since launch, F1000Research has seen significant growth in publication volume and we are now providing customised Platforms for an expanding number of research-based organisations including major global funding agencies such as the Bill and Melinda Gates Foundation² and Wellcome³. In March 2020, the European Commission⁴ (EC) announced that F1000 Research was awarded the contract to provide the EC with a publishing platform using this model of publication to support beneficiaries of the Horizon 2020 programme.

Our approach to the publication of original research is designed to support a more collaborative and 'open research' future – going way beyond OA, which we believe is the building block – providing full and FAIR⁵ access to any data and resources that underpin published research. Our approach has shown its value where rapid publication is a necessity, such as during public health emergencies (e.g. the Zika and Ebola virus outbreaks and during the current COVID-19 pandemic).

We are an organization unafraid to take risks and we strive to innovate to make research a public and global good, as discoverable and usable as possible. We would be very happy to offer additional insights, informed through our experiences, throughout OSTP's deliberations in rethinking and shaping its policies around providing access to research.

Yours sincerely,



Rebecca Lawrence (PhD), Managing Director, F1000 Research Ltd

¹ <https://f1000research.com/>

² <https://gatesopenresearch.org/>

³ <https://wellcomeopenresearch.org/>

⁴ https://ec.europa.eu/info/news/european-commission-awards-contract-setting-open-access-publishing-platform-2020-mar-20_en

⁵ <https://www.go-fair.org/fair-principles/>

What current limitations exist to the effective communication of research outputs (publications, data, and code) and how might communications evolve to accelerate public access while advancing the quality of scientific research? What are the barriers to and opportunities for change?

The **lack of Open Access (OA)** to a substantial proportion of research findings is among the most significant barriers and decelerators of research progress. While there are many initiatives underway to try to shift the operating business models of scholarly publishing to OA, there are still significant barriers in place which we believe the OSTP (among other national policy makers and research funders) could help to remedy by simply requiring OA sharing of research findings – and especially those funded by the public purse – as a matter of course.

It is now technically feasible for research findings to be shared online in (almost) real time. Given the very significant benefits this brings to researchers and research progress, and hence the impact this can have on innovation and American competitiveness, **we encourage the OSTP to increase support for systems and publishing models that seek to minimize delay and barriers to access.** It is entirely possible to ensure that appropriate safeguards and validators are embedded in and around any processes that enable research findings to be shared rapidly. Enabling OA to research means that findings are available for others to use and build upon, thus helping to deliver return on investment in research (ROI) and efficiency in science more broadly.

Additionally, while OA is the foundation stone for accelerating the use, potential impact and ROI of research, there is now the opportunity to also **bring greater efficiency into the research process by supporting reproducibility and minimizing research duplication and waste.** Beyond simple OA, researchers should be encouraged – and supported in doing so through underpinning research infrastructures and persistent identifiers – to **share all the outputs of their research** from detailed methodologies and research protocols, to research data and datasets created during the research process, software and code, and a host of other research resources created.

To be useful to others, such research outputs need to be discoverable and, as far as feasibly possible, FAIR (Findable, Accessible, Interoperable and Reproducible). Much work is underway across Europe and the world to support **FAIR sharing⁶ of research** – precisely to accelerate the potential for use and impact of research and thus ROI. Hence, **researchers need to be adequately funded and supported to make their work FAIR** and, perhaps most importantly, that such sharing behaviors are rewarded and therefore incentivized. It is essential that **rapid and open sharing of research is considered core to researchers' code of conduct** and is essential to **research integrity.** It is also essential that **researchers have the skills and knowledge to share their research in the most appropriate ways,** and that training is provided to support them in this.

One of the major opportunities in effecting change in how research is shared is through **enhanced dialogue between all stakeholders in the research system,** from policy makers, to funders, to research institutions and researchers, and to publishing service providers. **Research communication needs to be positioned as an essential part of the research process** so that the associated governance and quality assurance processes are designed precisely to deliver rapid understanding of what is known, discovered and remains unknown

⁶ See for example: <https://fairsharing.org/>

– to inform future research, to maximize any potential ROI, and to reduce the potential for waste and duplication.

What more can Federal agencies do to make tax-payer funded research results, including peer-reviewed author manuscripts, data, and code funded by the Federal Government, freely and publicly accessible in a way that minimizes delay, maximizes access, and enhances usability? How can the Federal Government engage with other sectors to achieve these goals?

Requiring that Federally funded research is available rapidly – without embargo periods – is perhaps the simplest and most direct action that the OSTP could take to improve access and the potential usability of research right now. This needs to be accompanied by **discussion around how best this should be funded** and there are a range of models, from the most incremental to something more radical. Essentially we believe that sharing research is an integral part of the research process and not an optional bolt-on – all findings arising from federally funded research, of all types, should be reported upon – but this need not be in formats and in containers that we currently conceive of as ‘journals’.

Additionally, to lever the value of OA, there are several other actions that the Federal Government could take to support access and utility, including (but not limited to):

- i. **Mandating publication of underpinning research resources** – ensuring the publication of all underpinning research data, software, code and other research resources created through federal funding in alignment with FAIR principles, based upon best practices established with the support of OSTP.
- ii. **Persistence and formats** – ensuring that these outputs are shared in ways, formats and in places that ensure long-term access and discoverability (e.g. by investing in cross-sector systems and infrastructures to ensure interoperability).
- iii. **Funding the research infrastructure** – to enable links and interoperability between research inputs, outputs and products, and the communities they serve, and to support the effort and associated infrastructure needed to enable research data, code and other materials to be truly FAIR.
- iv. **Training and education** – embedding training around optimum patterns and processes for sharing research (including data and code) – particularly for early career researchers (ECRs) to build capacity and a cadre of researchers for whom rapid research sharing becomes the norm.
- v. **Rewards and incentives** – ensuring that researchers are incentivized to share a much broader range of their research findings – including negative, null, incremental and confirmatory results.
- vi. **Code of conduct** – ensuring that rapid research sharing of a much broader range of outputs becomes the norm and considered best practice for researchers (e.g. part of good scientific governance and supports research integrity).

In addition, we believe there is significant scope and momentum right now for alignment between research funders, institutions and publishers in areas such as ‘open data’ requirements, guidelines around peer review, and conflict of interest statements to bring harmonization to our collective expectations and requirements of the research system. As research becomes increasingly collaborative and cross-disciplinary, researchers may face complex and sometimes even contradictory requirements and policies.

How would American science leadership and American competitiveness benefit from immediate access to these resources? What are potential challenges and effective approaches for overcoming them? Analyses that weigh the trade-offs of different approaches and models, especially those that provide data, will be particularly helpful.

Providing immediate OA to all research content would undoubtedly improve the ability for all scholars, researchers, healthcare practitioners, policymakers and all other audiences to engage more fully and rapidly with research content. There are many studies that demonstrate the academic, profile and citation impact for scholars in making their work openly accessible to others, not least via simply enhancing the discoverability and potential use of research^{7,8,9}. More immediate access to the products of publicly funded research would therefore increase the national and international reach and potential influence of federally funded research.

Additionally, through appropriate, cross-sector planning and policies to make published research available, and support to enable the development of publishing business models that can create an effective market for the provision of publishing services¹⁰, there would undoubtedly be financial savings to research institutions and beyond. This is through both the rerouting of the costs for paying for subscriptions to access content, as well as the significant broader economic benefits of making research outputs openly accessible. There is robust international evidence that demonstrate the economic benefits of research. In the influential Lasker Foundation study of the late 1990s¹¹ economists monetized improvements in life expectancy and quality of life in the US between 1970 and 1990, ascribing to them a value of around \$1.5 trillion/year, concluding that these economic returns far exceed the costs of the health research that contributed to them (> 20-fold). Adaptations of the Lasker study applied more recently in Australia^{12,13} and in the UK¹⁴, found a similar magnitude of economic impact of research. Alongside this there is increasing evidence that making research findings and outputs (including data) openly accessible contributes directly to this economic impact^{15,16,17,18} while also enabling public access and contributing to societal impact more broadly.

It will of course be paramount to accompany any shift in policy with a way to monitor and evaluate its impact – and to understand what works and what doesn't. Many research organizations and research funders who have introduced formal OA publishing requirements for their researchers have established frameworks to support tracking and review of the

⁷ Wagner B: Open access citation advantage: An annotated bibliography. *Issues Sci Technol Librarianship*. 2010; (60):2 10.5062/F4Q81B0W

⁸ Adie E: Attention! a study of open access vs non-open access articles. *Figshare*. 2014. 10.6084/m9.figshare.1213690

⁹ Wang X, Liu C, Mao W, et al.: The open access advantage considering citation, article usage and social media attention. *Scientometrics*. 2015;103(2):555–564

¹⁰ <https://wellcome.ac.uk/sites/default/files/developing-effective-market-for-open-access-article-processing-charges-mar14.pdf>

¹¹ Funding First. *Exceptional returns: the economic value of America's investment in medical research*. New York (NY): The Lasker Foundation; 2000

¹² Access Economics. *Exceptional returns: the value of investing in health R&D in Australia*. Canberra (Australia): Australian Society for Medical Research; 2003

¹³ Access Economics. *Exceptional returns: The value of investing in health R&D in Australia II*. Canberra (Australia): Australian Society for Medical Research; 2008

¹⁴ Sussex, J., Feng, Y., Mestre-Ferrandiz, J. et al. Quantifying the economic impact of government and charity funding of medical research on private research and development funding in the United Kingdom. *BMC Med* **14**, 32 (2016). <https://doi.org/10.1186/s12916-016-0564-z>

¹⁵ Arzberger P, Schroeder P, Beaulieu A, et al. : Promoting access to public research data for scientific, economic, and social development. *Data Sci J*. 2004;3:135–152. 10.2481/dsj.3.135

¹⁶ Beagrie N, Houghton JW: The value and impact of data sharing and curation: A synthesis of three recent studies of UK research data centres. 2014

¹⁷ Vickery, G. (2011). Review of recent studies on PSI re-use and related market developments. *Information Economics, Paris*, 1-44

¹⁸ Tennant JP, Waldner F, Jacques DC, Masuzzo P, Collister LB, Hartgerink CH. The academic, economic and societal impacts of Open Access: an evidence-based review. *F1000Res*. 2016;5:632. doi:10.12688/f1000research.8460.3

impact of their OA policy; such frameworks could serve as useful templates for the OSTP to consider if introducing its own policies around OA – and also provide a source of comparative information. See for example: Wellcome¹⁹, who after reviewing their OA policy in 2018, introduced more stringent guidelines for OA and were one of the founding partners of the cOAlition S²⁰ group of research funders committed to accelerating the transition to full OA to research findings; and the UKRI (the largest public research funder in the UK) who are currently consulting on proposed refinements to their current OA policy built upon the influential UK government commissioned Finch report of 2012^{21,22}.

Any additional information that might be considered for Federal policies related to public access to peer-reviewed author manuscripts, data, and code resulting from federally supported research.

Research is an international, collaborative activity across many domains and disciplines and, as evidenced through bibliometric publication data, is becoming increasingly so: according to a recent study, the number of international collaborations has tripled in the past fifteen years^{23,24}. According to the 2020 Nature Index tables, the largest number of papers with international co-authors was produced by researchers in the US, followed by Germany and the United Kingdom²⁵. Thus, to enable accessibility to the research generated through such international collaborations, there is strength in considering where research policies – for example around requirements around OA and open data – can be aligned across countries, both to keep things simple for the researcher, and to ensure that all partners can benefit equally from any discoveries.

Finally, we believe at a time when the Coronavirus pandemic threatens the health and livelihoods of us all, there can be no greater demonstration of the rationale and importance of making research findings and associated resources available at speed and in full. Delays in sharing research in such public health emergency situations can have no social, moral or economic value.

In March 2020, the OSTP working alongside other national and international scientific advisors, called for publishers to make their COVID-19 and coronavirus-related publications, and any underpinning data, immediately accessible in PubMed Central (PMC) and other appropriate public repositories²⁶. We believe this leadership from the OSTP and its international collaborators will be pivotal in helping the world to develop medical responses and strategies to mitigate and rapidly reduce the impact of the virus across the globe. After the pandemic ends, we imagine that the benefits of rapid and Open Access to research (in all disciplines, not just in public emergency situations) will have become so stark and obvious that the OSTP will have answered its own questions.

¹⁹<https://wellcome.ac.uk/news/wellcome-going-review-its-open-access-policy>

²⁰<https://www.coalition-s.org/>

²¹Finch Group (2012). Accessibility, sustainability, excellence: how to expand access to research publications, <https://www.acu.ac.uk/research-information-network/finch-report-final>

²²<https://www.ukri.org/files/funding/oa/open-access-review-consultation/>

²³Ribeiro, L.C., Rapini, M.S., Silva, L.A. *et al.* Growth patterns of the network of international collaboration in science. *Scientometrics* 114, 159–179 (2018).

²⁴<https://www.natureindex.com/news-blog/international-collaborations-growing-exponentially>

²⁵<https://www.nature.com/collections/chdeajdica/tables>

²⁶<https://www.ncbi.nlm.nih.gov/pmc/about/covid-19/>

6 May 2020

BY ELECTRONIC SUBMISSION

Dr. Kelvin K. Droegemeier
Director, Office of Science and Technology Policy
Eisenhower Executive Office Building
1650 Pennsylvania Avenue, NW
Washington, DC 20504

Response to OSTP Request for Information – FR Doc. 2020-06622 – “Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research”

Dear Dr. Droegemeier,

The European Respiratory Society (ERS) is grateful for the opportunity to respond to this request for information. In particular, we write to caution OSTP against adopting a policy mandating the free distribution of peer-reviewed manuscripts earlier than one year after publication.

The ERS, founded in 1990, is one of the leading medical organizations in the respiratory field, with a growing membership of over 30,000 respiratory professionals representing over 160 countries. Our mission is to promote lung health in order to alleviate suffering from disease and drive standards for respiratory medicine globally. Science, education and advocacy are at the core of everything we do. ERS publishes a number of journals and books, with different aims and scopes, to provide appropriate education for its members and all respiratory professionals at all stages in their careers to ultimately help improve patient care.

Ultimately, we strive to support the progress of science by producing and broadly disseminating the highest quality peer-reviewed journals possible. Publishers and societies have worked to strengthen scholarly communication and promote open science. For example, ERS publishes a number of open access journals, and offers author-pays open access in its flagship hybrid subscription journal. However, it is critical that these efforts take place within a framework that respects intellectual property rights and our ability to invest in high-quality publications, and that does not hinder researchers from communicating their discoveries.

Our organization is currently deeply engaged in efforts to respond to the COVID-19 pandemic. Our society has created a COVID-19 resources centre (including summaries of the latest news and research, webinars, and a chat forum for professionals working on the frontline) and the publications have signed up to the Wellcome Trust framework of transparency during a global emergency and are publishing relevant articles open access, sharing research with WHO, and working with PubMed Central to ensure immediate indexing. We are concerned that OSTP’s significant new regulatory proposal is a distraction from our

ongoing efforts to respond to the current crisis and would undermine our stability and undercut our ability to respond to future health crises.

As you are aware, federal agencies currently require that peer-reviewed manuscripts be made freely available online—within one year of publication—if they discuss research funded at least in part by a government grant.¹ This policy represents a significant compromise that balances our shared goals of providing broad access with the need for our organization to recoup the substantial investments we make in the peer-review, editing, publication, distribution, and long-term stewardship of these articles. Importantly, this compromise reflects Congress’ guidance (in the authorizing legislation for the current policy) that the Administration must “take into consideration the role that scientific publishers play in the peer review process in ensuring the integrity of the record of scientific research, including the investments and added value that they make.”²

Reducing or eliminating the current one-year embargo would significantly jeopardize our organization’s ability to invest in producing the high-quality peer-reviewed journals that our readers in the respiratory community rely on. In so doing, such a policy would contravene Congress’ clear guidance to take our role and investments into consideration. Furthermore, such a policy would directly result in a reduction in either the quantity or quality (or more likely, both) of peer-reviewed journal articles produced by hundreds of organizations like ours.

This would not only be harmful to the research enterprise, it would also be harmful to the patients, medical professionals, scientists, and the general public who are the ultimate beneficiaries of the scholarly journals we produce.

We urge you not to disrupt our ability to support the advancement of research and patient care in respiratory science and medicine, and we look forward to working together to identify solutions that advance the goals of open science without undermining the communication of research findings and analyses through peer-reviewed journals.

Thank you again for the opportunity to submit these comments.

Sincerely,

Elin Reeves, Director of Publications, European Respiratory Society

¹These policies were developed pursuant to OSTP’s requirement that agencies “shall use a twelve-month post-publication embargo period as a guideline for making research papers publicly available . . .” See OSTP Memorandum on “Increasing Access to the Results of Federally Funded Scientific Research” (Feb. 22, 2013).

² America COMPETES Reauthorization Act of 2010, Section 103(b)(9), *available at*: <https://www.congress.gov/111/plaws/publ358/PLAW-111publ358.pdf>.



Association of Research Libraries Response to Request for Information: Public Access to Peer-Reviewed Scholarly Publications, Data, and Code Resulting from Federally Funded Research

May 6, 2020

Thank you for the opportunity to provide input on the actions that US federal agencies can take to expand access to publicly funded research. I submit the following views on behalf of the Association of Research Libraries (ARL), a nonprofit collective of libraries in 124 leading research institutions in the United States and Canada. As collaborative partners supporting the full life cycle of scientific inquiry and creation, ARL's mission is to create an equitable, enduring, and barrier-free research information environment to advance research and learning. Our 100 US academic member libraries alone, including many public and land-grant institutions, directly serve 3.5 million students and faculty. Since mid-March 2020, when US universities transitioned to virtual operations to ensure the safety of their communities from the COVID-19 pandemic, libraries have been even more focused on maximizing barrier-free access to digital content to support academic and research continuity.

Many recent articles and editorials, from national newspapers to prestigious scientific journals, have recognized this historic moment as an inflection point for open science practices and efficacy—including the rapid sharing and evaluation of data and research, and an emphasis on machine readability and computability to handle volume and speed. The rise of preprint submissions, widespread data sharing, and accelerated and innovative approaches to peer review are not just emergency responses to COVID-19. These actions represent a harbinger of the global scientific enterprise that citizens will expect in the future.

Research libraries are uniquely responsible for the past, the present, and the future of scholarship. They curate and steward locally produced research assets, provide computational access to digitized materials, partner in the delivery of data science and digital scholarship education, and build strong networks of inter-library collaboration. Development of these future-facing services has been constrained by the percentage of library budgets devoted to scholarly journal subscriptions and annual license fees, and the staff required to negotiate licenses and maintain access restrictions. The social and scientific cost of protecting publisher revenue through embargoes that delay access is too high. It's time for a new, multi-stakeholder model that includes rapid dissemination and experimentation with faster and more efficient peer review, including post-publication, open peer review, and more.

In this age of innovative digital technologies, ARL libraries work with many partners—teaching and research faculty, administrators, funding agencies, and publishers—to improve the research communications ecosystem. As well as leveraging new open infrastructures, libraries are working to change existing publishing models to improve access to information. Our community is ready to partner on new business models that sustain scholarly communities and promote equitable, open access to scholarship. Libraries are committed to working collectively and collaboratively with scholarly societies and domain communities to develop actionable transition strategies to achieve immediate open access to federally funded research. We want to develop and support solutions that equally serve the interests of large research institutions, smaller institutions, independent scholars, and the public.

ARL is pleased to offer our perspectives on the four topics outlined in the request for information.

Publications

Subscription journals still dominate the marketplace for scholarly research, and consequently, approximately 85% of the world’s scholarly output is still behind a paywall.¹ Often bundled in so-called “big deals,” prices have consistently outpaced the rate of inflation and the Consumer Price Index, so that even the most highly resourced university libraries cannot keep up with journal cost increases (including for very high-impact journals) without sacrificing other areas of their collections budgets. Outside well-resourced academic institutions, most people cannot access current scientific literature, including the broad taxpayer base that collectively funded its creation. Researchers publish papers in high-impact journals (many of which are owned or published by a group of three to five commercial entities) to advance their career status, otherwise compete for recognition, and obtain grant funding to advance their research. Authors are often compelled to sign over their copyrights to these journals, which places limitations on how digital copies can be shared or used.

Opportunities for change:

- Science is a process of discovery where the insights of one study reveal and build on the discovery of the next advance. Embargoes on publicly funded research add delays (on top of lengthy review periods) to the widespread distribution of scientific articles and data, slowing down the relay process. Conversely, immediate public access to federally funded research publications and data would expand the opportunity to participate in research not only by individuals but also by machines in mining the information through AI techniques for additional insights and obscure associations to other research.
- Since 2016, and particularly in the first quarter of 2020, there has been a significant growth in preprint services and deposits, and a growing interest in the development of post-publication peer review and other overlay services. US federal agencies could accelerate these innovations by rewarding **all** research outputs in grant reviews, including preprints.

Data

There are a range of critical reasons to accelerate public access to research data, including (1) reducing redundancy in the system by making data available for reuse; (2) evaluating research outputs for rigor and reproducibility within a discipline, leading to strengthened findings; and (3) expanding the potential of open data to contribute to new nonprofit and commercial innovation. Limitations on data publication and access include:

- Relegation of data to supplemental files in PDF rather than making it available in machine-accessible format
- Nonexistent or inconsistent application of persistent identifiers (PIDs) for data sets
- Variation in the capacity and requirements of data repositories
- Resource-intensive curation required to make data reusable and interoperable
- Challenge of moving data from institutionally based computing environments to data repositories
- Inadequate infrastructure for making sensitive data public and lack of common metadata standards for sensitive data

Opportunities for change

In FY 2019, US federal agencies obligated an estimated \$101.9 billion for extramural R&D,² much of which goes to academic research institutions. As researchers face funding and travel restrictions due to COVID-19, data reuse will be more important than ever, and removing embargoes will have a positive effect on research across a constrained system. Similarly, delays in sharing data, code, or publications hinder accountability to the scientific community and reduce opportunities for error correction and replicability. With the amount of academic research that is funded by the federal government, a cross-agency requirement for making research outputs immediately available is also likely to accelerate the cultural adoption of open science practices across the research enterprise.

The relative ease of data reuse is dependent on good documentation, curation, and metadata, including PIDs, and the distributed landscape of digital repositories demands agreed-upon, open standards and protocols to automate workflow and interlink related scholarly works. As complex as the landscape is, it is incumbent on all stakeholders in the research enterprise to reduce the friction where we can. In noting the following opportunities, the Association commits to working within and across our institutions to implement them. ARL recommends that:

- US federal agencies require PIDs for data, people, and organizations
- US agencies provide stable funding for domain data repositories and other key elements of open research infrastructure

With near-term budget shortfalls, collaboration and shared services and infrastructure will be even more important. ARL welcomes the opportunity to continue working with agencies on standards, requirements, and their implementation and workflows.

Code

The key limitation in scientific code associated with research data is proprietary restrictions on sharing and reuse. The Association published the freely available [Code of Best Practices in Fair Use for Software Preservation](#) in 2018. ARL recommends that federal agencies require open source software for federally funded research data, when feasible.

Data, publications, and code associated with a particular award are typically pieces of a larger and longer-term research agenda. Given the US government's size and influence, federal requirements for immediate data sharing will go a long way to making that practice normative, so that the scientific community builds data sharing into training, labs, tools, and more. ARL recommends that US federal agencies:

- Reward quality over quantity in reviewing funding proposals, and include all types of research outputs (including data and code), by asking for the “top [number of] research outputs”
- Make competitive funding available for building and sustaining open infrastructure for data sharing
- Offer competitive funding to universities and libraries to strengthen the partnerships between academic institutions and agencies with respect to data curation and long-term data stewardship

Research libraries are interested in redirecting subscription dollars to support a sustainable public access environment by investing in open infrastructure and open content, particularly in partnership with scholarly communities.

The government funds the majority of basic science (relative to industry) in the United States, and making research outputs as open as possible, as early as possible, increases the rate of innovation across all sectors of the economy. Open publications, data, and code available for replication are also more trustworthy. There is no more salient example of the benefits of open access than the preprints, rapid evaluation, and data sharing that scientists across the world are participating in right now in order to develop treatments, cures, and vaccines for COVID-19. Unprecedented speed of data sharing during emergencies is needed, but vaccines and pandemic preparation take years of sustained investment, not just emergency action. In fact, when the situation stabilizes for this pandemic, agencies, universities, national labs, and others in the scientific community will find many lessons from this experience for what worked and what was lacking in terms of data-sharing infrastructures, rigor and review, and machine accessibility of both publications and data. In the near term, recent lab closures and interruptions to degree completion among US students pose a threat to the scientific workforce if those students cannot complete their work. Immediate access to federally funded publications and especially data could be leveraged to mitigate that damage now and for the near future as student populations remain socially distanced. In less extraordinary circumstances than these, immediate access expands the potential pool of researchers and data available for training, augmenting the capacity of the US scientific community, together with the private sector, to respond to grand challenges.

There is a growing global consensus around open access for all the reasons enumerated in these comments. One principal challenge is the extent to which the commercialization (and consolidation among a few companies) of scholarly literature has become the source of sustainability for many of our scholarly and professional societies, including for their non-publishing activities. It is time for a new paradigm for scholarly publishing in which the content of scientific outputs is freely and immediately accessible, multiple stakeholders contribute to the sustainability of open infrastructure elements (such as PIDs), and publishers charge for specialized services. The Association is committed to working with the scholarly community to advance this vision. By working together, libraries and societies could articulate their distinct contributions to advancing scholarship, and envision a sustainable way to support the dissemination of scholarship along with the essential, ancillary services of promoting the discipline. The growing enthusiasm for “subscribe to open” and transformative agreements based on article processing charges or “green” deposits are demonstrations of our community’s willingness to experiment and engage.

There are still misconceptions among scholars about the extent to which (embargo-dependent) subscription revenue is the key to the functioning of the scientific peer-review process. In fact, a range of models co-exist with immediate access, including “gold” open access (with or without a transformative agreement), post-publication peer review, overlay journals, and more. Peer reviewers do not typically receive compensation from their publishers. Like authors, they contribute their time and expertise to advance scholarship and gain recognition as experts in an area. ARL supports open science initiatives that would elevate the role of peer reviewers within the academic reward system.

Thank you for your consideration of these comments.

Sincerely,

Mary Lee Kennedy
Executive Director
Association of Research Libraries

Notes

1. “2020 EBSCO Serials Price Projection Report,” *EBSCOpost*, October 2, 2019, <https://www.ebsco.com/blog/article/2020-ebsco-serials-price-projection-report>.
2. Daniel Morgan and John F. Sargent Jr., *Effects of COVID-19 on the Federal Research and Development Enterprise*, Congressional Research Service, April 10, 2020, <https://crsreports.congress.gov/product/pdf/R/R46309>.



American Society of Plant Biologists

Cultivating a better future through plant biology research

May 6, 2020

Dear President Trump:

On behalf of the American Society of Plant Biologists (ASPB), a society of 3,000 plant scientists around the world, we are writing to express our deep concern with a policy recently proposed by OSTP to mandate the immediate and free distribution of all papers resulting from federally funded research.

ASPB and its members are deeply committed to the rapid dissemination of high-quality, peer-reviewed scientific information. Well over 95% of the Society's content, dating back to 1926, is freely accessible through a variety of business models. In fact, about half the research content we publish each year is already immediately free upon publication. The remaining content is made free after 12 months and has been for more than 20 years. All our content is available at no charge for noncommercial, educational reuse. We offer authors the opportunity to make their peer-reviewed, final article—the "version of record"—free at the moment of publication, and our authors whose funders mandate it may further opt to make the version of record free for *commercial* reuse. Additionally, we participate in numerous initiatives that bring our content to developing parts of the world at zero cost.

ASPB's mix of publishing business models—institutional subscriptions and the various Open Access options noted above—allows us not only to publish two high-impact, highly cited journals, but also enables us to advance our mission by disseminating scientific information through other important outlets, including numerous meetings that bring together scientists from around the world, enabling professional networking and collaboration and the support of our entire discipline. We should note that our scientists work not only in academia but also in government and industry, and their work supports not only fundamental discovery research but also applied biotechnology research to sustainably advance agriculture, food security, and human health in America and worldwide.

A zero embargo on all papers reporting federally funded research would likely devastate ASPB's subscription revenues, making it difficult if not impossible for us to continue publishing robust, peer-reviewed scientific content and to support our meetings and other nonprofit programs that educate the public, K-16, and scientists alike. The proposed zero embargo would likely force many small societies to shutter their operations entirely, reducing the number of outlets available for scientists to publish their work and continue their education and learning. Note

that scholarly societies publish fully two-thirds of the world's most highly cited content. The scientific enterprise would suffer greatly should learned societies no longer flourish.

Let us add that ASPB's journals engage in a variety of activities that support open science, reproducibility, and transparency. We believe that disciplinary communities could benefit from adapting some of our practices to their journals, but we note that without the revenue currently generated by subscriptions—revenue that would be largely eliminated in a zero-embargo world—it will be challenging for smaller publishers to do so. For example, since March 2018, ASPB's journals have used the Domain Informational Vocabulary Extraction (DIVE) algorithm, in combination with our XML-based article proofing system, to validate data reported in our journals and integrate these data into the Gramene database. Gramene has curated ~2,000 plant biology articles from our journals using automated text-based extraction rules adapted from those originally used by humans. As the database continues to grow, scientists in the plant community have the ability to use this shared data mine to inform future studies and to confirm/discover ontological relationships. Further, ASPB has enforced for many years the distribution of materials upon request, thereby enabling replication of experiments and reproducibility of results. ASPB's journal *The Plant Cell* was one of the first journals to promote transparency in the review process by publishing reviews along with final articles, an initiative called Peer Review Reports. Additionally, all ASPB journals not only review preprints and link from preprints to final articles, but the Society also has piloted a reverse workflow where published articles are linked back to their original preprint. One of our journals (already fully Open Access) actually incentivizes posting on preprint servers with significant discounts on article processing charges (APCs). The Society views these initiatives as highly valuable to the scientific enterprise and encourages their widespread adoption by sibling publishers when possible. But we, and others, need the financial resources derived from subscriptions revenues to develop and continue these creative innovations.

We urge you to oppose the zero-embargo policy proposed by OSTP and to allow societies to develop their own sustainable, market-driven business models that also support access and transparency. This approach has served science and the public well for many years while allowing publishers, including mission-driven scientific societies, to continue to innovate and support their global communities.

Thank you for your consideration. Please do not hesitate to contact us if we can provide further information.

Sincerely,

Judy Callis, President
Crispin Taylor, CEO

Dear Dr. Nichols,

Thank you for requesting input on “Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research”. I am an Assistant Professor of Medical Biophysics and Computer Science at the University of Toronto, where my research focuses on machine learning and genomic data. I am a U.S. citizen.

I strongly support your efforts to make knowledge, information, and data generated by federally-funded research immediately, universally, and freely accessible upon publication. You should require that upon publication of work funded in part by federal sources, the publication itself, associated data, and associated software code must be deposited in a public repository and available immediately, with no embargo period or payment.

What current limitations exist to the effective communication of research outputs (publications, data, and code) and how might communications evolve to accelerate public access while advancing the quality of scientific research?

Publications

The major limitation to immediate public access of publications is journal paywalls. It should be a requirement of accepting federal funding that any resulting publications be available freely immediately. Not after an embargo period. Embargo periods and tolls paid to publishers add harmful and unnecessary friction, reducing the impact of taxpayer-funded research.

Opponents of such requirements have brought up concerns about interference in a “private marketplace” (letter from publishers to President Trump, 18 December 2019, <https://presspage-production-content.s3.amazonaws.com/uploads/1508/coalitionletteropposinglowerembargoes12.18.2019-581369.pdf>). In truth, there is no such “private marketplace”. The publishers generally publish articles provided to them at zero cost, written by researchers whose salaries are paid for by public funds.

In exchange for receiving federal funding, recipients must agree to certain restrictions. For example, they usually are not allowed to set the money on fire. This is not interference with a private marketplace for banknote ash; it is a sensible restriction to ensure that the federal funding provides a public benefit. Similarly, maximizing public benefit rather than maximizing “choice” must be the driving force of access policies.

Private organizations such as the Gates Foundation have successfully enforced policies to maximize the impact of their research through zero-embargo public access (“Bill & Melinda Gates Foundation Open Access Policy”, <https://www.gatesfoundation.org/how-we-work/general-information/open-access-policy>), with few complaints from recipients. Such policies give the recipients leverage to demand beneficial changes in journal policy. No organization has more leverage in this respect than the U.S. government.

Data and code

The major limitation in communicating data and code is that some individual researchers do not find it to be necessary or beneficial to them personally. To counter this, we must have strong requirements for sharing of data and code, a strong enforcement program, and must prioritize funding for those who share data and code well.

Federal research agencies must have strong requirements for data and code sharing. Guidelines that discuss “expectations” or “recommendations” instead of strong requirements are self-defeating.

When requesting funding, applicants must include a data management and materials sharing plan that describes how these requirements will be implemented in detail, and how the plan addresses the 15 FAIR Principles for Findable, Accessible, Interoperable, and Reusable data (<https://www.go-fair.org/fair-principles/>). The plan must be considered and scored by technical reviewers and not just be an administrative afterthought.

Data management and materials sharing plans for funded projects must be placed on a public web site so that others know what to expect. Grantees knowing that their data management and sharing promises are readily available to the public will provide some measure of self-enforcement. The web site should include contact email addresses for the principal investigators of a grant, officials representing the grantee institution, and the funding agency. This will allow for solving issues at the most local level, when possible, and escalation when the previous proves ineffective.

Agencies should have incentives to encourage high-quality data and code sharing. I suggest that biographical sketches of key personnel include a section where they discuss their most significant contributions to data and resource sharing (including data, code, reagents, samples, and other materials). This should be separate from other contributions to avoid it getting short shrift due to lack of space. The past record of the

principal investigator and other key personnel should be explicitly added to scored review criteria.

What more can Federal agencies do to make tax-payer funded research results, including peer-reviewed author manuscripts, data, and code funded by the Federal Government, freely and publicly accessible in a way that minimizes delay, maximizes access, and enhances usability?

Data

To ensure good data management, any data described as collected in a progress report must be deposited independently and an accession code or digital object identifier (DOI) supplied. Without an independently verifiable accession code, funding agency officials and reviewers should not consider the existence of such data when deciding on competing or non-competing renewals.

Except when specified by the funding opportunity announcement, researchers may embargo data until publication, and not beyond. Grant opportunities specifically designated to create a shared resource must specify a date by which data must be available even in the absence of a publication.

There are a large number of digital repositories with different policies. You should require that acceptable digital repositories must not allow recipients to unilaterally change or delete deposited data. The repositories may, however, allow adding new versions of data advertised in metadata for the original dataset.

Code

Requiring availability of software code for published research is essential to maximize the public benefit of federally-funded research. I and others have written more about the importance of code availability in artificial intelligence research in a recent commentary (“The importance of transparency and reproducibility in artificial intelligence research”, <https://arxiv.org/abs/2003.00898>).

As with data, you should require that code be deposited in an independent repository that does not allow recipients to unilaterally change or delete the code.

Other materials

Other materials produced in part with federal funds, such as plasmids, cell lines, or mouse strains, must be available through third-party repositories. Agreements for

access to these materials must be free of restrictions on the ability to perform or publish further research using these materials. This means that requirements for prior approval by, or collaboration or co-authorship with, the depositors of the materials render a repository unacceptable for this policy. Such requirements impede the action of the normal scientific process to ensure robustness and reproducibility of research, and to build on it to maximize public benefit.

Any additional information that might be considered for Federal policies related to public access to peer-reviewed author manuscripts, data, and code resulting from federally supported research.

Exceptions to access requirements must be narrowly tailored to a specific purpose, individually justified, and receive prior approval by peer reviewers, program staff, and an agency-level advisory committee of data management experts that includes data scientists and librarians. While privacy concerns sometimes prevent sharing of full data associated with individuals, it is often possible to share those data in deidentified form, via platforms that restrict access to qualified researchers, or in summary form.

It is important to protect human participant privacy but it is also important that concerns about human participant privacy not be abused to eliminate appropriate data sharing. It is especially worth considering that many human participants expect that data from their participation will be shared with other qualified researchers. Ineffective sharing of the resulting data (assuming appropriate protective measures such as de-identification are in place) is unethical as it wastes human participants' contributions to research and may result in more patients being exposed to harm. Therefore it should be an explicit goal of this policy and any submitted data management and materials sharing plans to maximize access subject to necessary restrictions.

Conclusion

Thank you for your work to increase the public benefit of federally-funded research. These benefits will be maximized by strong requirements for public and free availability upon publication of the publication itself and associated data, code, and other materials.

Sincerely yours,

A handwritten signature in blue ink that reads "Michael Hoffman". The signature is written in a cursive, flowing style.

Michael Hoffman

May 6, 2020

Kelvin K. Droegemeier, PhD, Director
Office of Science and Technology Policy
1650 Pennsylvania Ave NW,
Washington, DC 20504

Dear Dr. Droegemeier:

The American Physiological Society (APS) is pleased to provide this response to the Request for Information (RFI) on Public Access. APS is a professional society for researchers who study biological function in living organisms. The Society was founded in 1887 and today has nearly 9,000 members dedicated to understanding life, advancing scientific discovery and improving health.

APS publishes 16 peer-reviewed journals—including two that are open access—covering the full breadth of the discipline.¹ We offer researchers a platform to read and publish the latest physiological findings. We constantly innovate, adopting new practices with the goal of maintaining the high quality that is a hallmark of our program and providing authors options to meet funder and institutional requirements. We are committed to help you meet the needs of the federal research community.

SUSTAINABLE PUBLISHING: An enormous amount of scientific information is generated every day, but it is not all equally valuable or reliable. APS Journals play a critical role by evaluating and curating scientific findings, presenting information in a readable format, ensuring that articles are readily discoverable, and preserving them for long-term use. To do so, our journals organize and support:

- peer review
- ethical oversight
- copy-editing and fraud detection for quality control
- figure editing and graphic design for enhanced presentation
- widespread distribution to scholarly databases and promotion through marketing
- preservation through website hosting and archiving
- evaluation and correction of errors identified after publication

Authors who publish in APS journals pay publication fees, but these charges do not come close to covering the full cost of the services described above.² Rather, institutional subscriptions cover the majority of production costs. Subscriptions also pay the cost of depositing articles based on federally-funded research in PubMed Central after the 12-month embargo and subsidize our *AuthorChoice* program,³ which gives authors the option to make an article Open Access immediately upon

¹ APS Publications: <https://journals.physiology.org/>

² APS members pay an \$800 article processing charge, while non-members pay \$975. Cost of Publication: <https://journals.physiology.org/author-info.cost-of-publication>.

³ Open Access (*AuthorChoice*): <https://journals.physiology.org/author-info.open-access>



publication. **Without subscription revenues, the current *AuthorChoice* Article Processing Fee (APC) would have to be more than doubled.** Subscriptions also subsidize our education journal, which is free to read and publish.

Since about 45% of the articles APS publishes are based on federally-funded research, an Open Access mandate of less than 12 months would be a tipping point. We would lose institutional subscriptions, forcing a complete change in business model. This would result in losses of millions of dollars, creating an unsustainable operating deficit. Creating products and service offerings to replace revenues of this magnitude would require significant financial investments and, even if possible at all, could take many years. Therefore, substantial increases in our APCs would be needed to maintain the quality of our journals, and this would require researchers to divert significant additional research dollars from their grants to pay these fees.

A shift to an author-pays model would also have negative impacts on productive research institutions because their authors would have to pay much larger OA fees to publish their research. In addition, minimally-funded authors in the US and elsewhere would be challenged to find the funds to cover OA fees, as would researchers seeking to publish after the grant has ended. We would, therefore, be replacing a perceived inequity in access with clear inequity in the ability to publish. This is why APS supports a mix of models: Subscription revenues will enable us to continue providing high-quality services to authors and readers while experimenting with programs such as **Read, Publish and Join**, enabling us to establish partnerships that distribute costs across institutions, countries and consumers of the content. While our subscription costs and author fees are both modest, they have allowed us to weather shifts in the marketplace, although the full ramifications of the current pandemic are still unknown.

To guarantee that authors have funds to publish their findings as OA articles without reducing funds for the research itself, the government would have to add significant funding to agency budgets. According to Scopus,⁴ in 2018, scientific journals published some 224,000 articles based upon federally-funded research. Even if APCs averaged an unrealistically low figure such as \$3,000, the estimated cost would be close to \$700 million per year.

With that said, APS recognizes the importance of sustainable open scholarship. Our members are engaged in treating patients with Covid-19 and conducting research to provide insights into how the virus attacks the body, as well as finding new treatment strategies. Along with other publishers, we are providing immediate free access to Covid-19-related articles⁵ at no cost to authors. Recently we also piloted a new, first of its kind transformative model called **Read, Publish and Join**. These institutional

⁴ Information from the Scopus® database indicates that roughly 224,000 articles were published in 2018 that reported on federally funded research.

⁵ APS Responds to the COVID-19 Pandemic: <https://journals.physiology.org/covid19>. As of April 6, this collection included articles on the role of angiotensin-converting enzyme 2 in the disease; COVID-19's impact on the cardiovascular system; insights into what was learned about how earlier coronaviruses such as SARS and MERS affected patients with diabetes; potential risks of kidney injury; and plausible interventional strategies based upon a physiological perspective of clinical features of COVID-19.



level agreements enable researchers at an institution to read our content, publish open access articles in our journals, and enjoy full membership benefits.

Every publication business model for cost recovery has advantages and disadvantages. We believe a mix of models will best meet the needs of our diverse community and advance the discipline. Because some 45% of our content is based on federally-funded research, we are concerned that reducing the time-to-access period would undercut our ability to serve our community by eroding the financial engine that enables us to curate, validate, and disseminate research articles. Our responses to the RFI will highlight ways to advance open science without sacrificing the quality of services we provide to physiological researchers.

PROTECTING THE RESEARCH PIPELINE: A pipeline of well-trained investigators is essential to renew the workforce, advance physiological research, and accelerate our understanding of life and health. We favor efforts to increase the dissemination of our members' work, but a precipitous move to OA publishing without adequate funding would likely decrease research output and harm training. Journals with sound peer review and rigorous editorial practices cost money to publish. An author-pays model will drive up the costs of APCs to the point that investigators may have to ration publications. They will still try to place their most important findings in high-fee, high-quality journals, but incremental advances will be relegated to less expensive and less rigorous journals. Moreover, negative results may never be reported. This will affect the academic pipeline: trainees will have difficulty getting their work published in prestigious journals if their mentors run low on funds. Yet without high-impact publications, trainees will be unable to launch their careers.

To ensure equity, preserve the training pipeline, and avoid reducing research output, any move to mandate immediate OA publishing should include sufficient new funds to ensure equitable access to publication without diminishing research itself.

ENHANCED OPEN SCIENCE IS A PATH FORWARD: APS believes that open science initiatives can do the most to improve scholarly communication, and we stand ready to partner with you in efforts to increase the rigor and reproducibility of research. To this end, these areas require attention:

Data Accessibility: Journal articles analyze data, and they are typically disseminated in html or pdf formats, making them accessible to anyone with a computer and an internet connection. The data that underly these results are not always publicly available, but these data may be essential to assess the rigor of the study. Providing access to vastly different kinds of data from federally-funded research is challenging. Dedicated repositories collect certain kinds of data, but this is not the case for all data types.⁶ Some repositories are free, while others require payment, particularly for large datasets.

APS journals require authors to deposit sequence and array data sets associated with their manuscripts into appropriate public databases prior to submission,⁷ making it possible for referees to

⁶ *Nature* lists *Scientific Data's* Recommended Repositories at <https://www.nature.com/sdata/policies/repositories#general>.

⁷ Data repository standards of APS Journals: <https://journals.physiology.org/author-info.data-repositories>. When there is no appropriate repository for the data type, authors can deposit into one of *Scientific Data's* "Generalist" databases: <https://www.nature.com/sdata/policies/repositories#general>



access the data during peer review. This is required for all research, whether federally-funded or not. APS also requires that information on how to access data sets be included in the Materials and Methods of the article section and linked to it via a Persistent Unique Object Identifier (PUIID). While some journals have similar policies, it isn't clear whether all journals do, or whether all authors comply.

OSTP's initial goal should be to ensure that all data sets associated with published articles are submitted to appropriate repositories and identified with PUIDs.

Requiring federally-funded researchers to submit data to repositories entails a number of challenges. These challenges are not unsurmountable, but they will be costly to address. APS submitted comments on both OSTP's Request for Public Comments on Draft Desirable Characteristics of Repositories for Managing and Sharing Data from Federally Funded Research and NIH's Draft Policy for Data Management and Sharing.⁸ Relevant issues identified include:

- Data deposit requirements should account for costs and administrative burdens associated with them and be harmonized across federal agencies.
- Repositories should be designed to offer ease of use for both depositing and accessing data.
- Data sets should include clear annotation and definitions where needed.
- Descriptions of research methods should accompany the data to facilitate replication of studies.
- The government should fund the costs of storing large data sets and storage for all data after awards expire.
- Standardization should be encouraged even if it is impossible to develop a single format for the range of data types generated. Federal agencies should support efforts to develop terminologies to describe data sets in various disciplines.
- Access to specialized software needed to access and view images should be provided. Provisions should also be made to ensure that data remain accessible if this software is updated in the future.
- Repositories must permit researchers to set access controls to protect personal privacy, intellectual property, and other relevant considerations.
- Repositories should record when changes are made to previously-deposited data or metadata and should have security measures to ensure that information is not changed in ways that are fraudulent or otherwise inappropriate.

NIH's draft policy for data management and sharing included a proposal to require researchers to deposit *all* data generated on a grant, whether or not they are associated with a published article. If this policy is pursued, the sheer volume of data will limit the extent to which the research community can provide meaningful review via crowdsourcing. Therefore, mechanisms will be needed to evaluate the quality of unpublished data.⁹ It should be noted, however, that the time needed to comply with this

⁸APS March 4, 2020 comments on desirable characteristics for repositories for managing and sharing data: <https://www.physiology.org/career/policy-advocacy/federal-research-funding/aps-comments-on-plans-for-data-repositories?SSO=Y>. APS January 8, 2020 Comments on NIH's Draft Data Management and Sharing Policy: <https://www.physiology.org/detail/advocacy-article/aps-comments-on-draft-data-management-and-sharing-policy?SSO=Y>

⁹ APS Comments on NIH's Draft Data Management and Sharing Policy.



mandate would be considerable, and researchers who are already struggling under significant administrative burdens would have even less time to perform their actual research.

Broader dissemination of data from federally-funded research will make that research more useful, but the cost to do so ultimately comes from funds allocated for research itself. **Thus, it is important for the federal government to strike an appropriate balance between discovery and dissemination.**

Introduce Open Methods Initiatives: Another way to make research more reproducible is by making the methods publicly available. Methods are reported in research articles, but not all journals allow detailed descriptions. Without complete methods, efforts to confirm findings sometimes fail, resulting in wasted research effort and funds. APS journals have no page limits, and we require authors to report their complete methods. Nevertheless, there would be added value in having methods posted to a public repository in addition to being reported in the article. These methods could be linked to the data sets, and all links could be included within the manuscript or on the abstract page of the article, which is freely available both at the journal site and in PubMed.

The federal government could take an active role in supporting federally-funded researchers by requiring methods and data reported in research articles to be posted to public repositories when published.

Revising Research Assessment: The productivity of researchers currently assessed using grant funding and publication output. However, the quality of publications is not based on the content reported in the work but on the impact factor of the journal title. This is a faulty measurement that will become even more problematic if federally-funded research is required to be published OA.

The business model for OA journals relies upon volume rather than quality. If journals must pivot to an OA business model, even those that held high standards of quality may have to accept more articles to meet revenue targets. As article quality declines, impact factors are likely to decrease.

Before sweeping changes to the publishing ecosystem are implemented, the government should promote the adoption of alternatives to impact factors as markers of researcher productivity. Funding agencies could move the needle by requiring review panels to use alternative productivity metrics.

We appreciate this opportunity to share our recommendations with you. APS looks forward to collaborating further with OSTP to determine how best to spread the cost of publishing across public and private interests. Doing so will accelerate dissemination without breaking the foundational components of a strong scholarly communication enterprise. We are ready to continue this discussion, including the financial implications of the policies under consideration, at your earliest convenience.

Sincerely,

/Scott Steen/

Executive Director

/Colette E. Bean/

Chief Publishing Officer



May 6, 2020

BY ELECTRONIC SUBMISSION

Dr. Kelvin K. Droegemeier
Director, Office of Science and Technology Policy
Eisenhower Executive Office Building
1650 Pennsylvania Avenue, NW
Washington, DC 20504

Response to OSTP Request for Information – FR Doc. 2020-06622 – “Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research”

Dear Dr. Droegemeier,

The American Gastroenterological Association (AGA) is grateful for the opportunity to respond to this request for information. We write to caution OSTP against adopting a policy mandating the free distribution of peer-reviewed manuscripts earlier than one year after publication.

Founded in 1897, AGA strives to empower clinicians and researchers to improve digestive health. We represent more than 16,000 clinicians and researchers from around the world who are dedicated to eradicating digestive diseases, including colorectal cancer, inflammatory bowel disease, gastroesophageal reflux disease, liver and pancreatic diseases and cancers, and functional disorders. AGA membership comprises basic, translational, and clinical researchers, as well as physicians and advanced practice providers who care for patients. To help achieve our mission, we publish four peer-review journals: *Gastroenterology*, *Clinical Gastroenterology and Hepatology*, *Cellular and Molecular Gastroenterology and Hepatology*, and *Techniques and Innovations in Gastrointestinal Endoscopy*. With these journals, we advance the understanding of digestive health and disease by disseminating new knowledge, leading to improved patient care and health.

Ultimately, we strive to support the progress of science by producing and broadly disseminating the highest quality peer-reviewed journals possible. Publishers and societies have worked to strengthen scholarly communication and promote open science. We make at least half of our journal content freely accessible and *all* of our journal content is free after one year of publication. Additionally, we strive to promote open science by having adopted the Transparency and Openness Promotion Guidelines set forth by the Center for Open Science. However, it is critical that these efforts take place within a framework that respects intellectual property rights and our ability to invest in high-quality publications, and that does not hinder researchers from communicating their discoveries.

Our organization is currently deeply engaged in efforts to respond to the COVID-19 pandemic; we are providing resources to our practitioners including clinical practice recommendations, we are breaking down key governmental policies that affect our community, we’re providing education, and we’re publishing peer-reviewed science as rapidly as possible. We are making all COVID-19 research freely accessible. We are concerned that OSTP’s significant new regulatory proposal is a distraction from our ongoing efforts to respond to the current crisis and would undermine our stability and undercut our ability to respond to future health crises.

As you are aware, federal agencies currently require that peer-reviewed manuscripts be made freely available online—within one year of publication—if they discuss research funded at least in part by a

government grant.¹ This policy represents a significant compromise that balances our shared goals of providing broad access with the need for our organization to recoup the substantial investments we make in the peer-review, editing, publication, distribution, and long-term stewardship of these articles. This one-year compromise contrasts with the length of a full copyright term of life-of-the-author plus 70 years. Importantly, this compromise reflects Congress' guidance (in the authorizing legislation for the current policy) that the Administration must "take into consideration the role that scientific publishers play in the peer review process in ensuring the integrity of the record of scientific research, including the investments and added value that they make."²

Reducing or eliminating the current one-year embargo would significantly jeopardize our organization's ability to invest in producing the high-quality peer-reviewed journals that our readers in the gastroenterology and hepatology community rely on. Other organizations publishing journals in other medical specialties would suffer the same effects. Such a policy would contravene Congress' clear guidance to take our role and investments into consideration. Furthermore, such a policy would directly result in a reduction in either the quantity or quality (or more likely, both) of peer-reviewed journal articles produced by hundreds of organizations like ours.

This would not only be harmful to the research enterprise, it would also be harmful to the patients, medical professionals, scientists, and the general public who are the ultimate beneficiaries of the scholarly journals we produce.

We urge you not to disrupt our ability to support the advancement of research and patient care in gastroenterology and hepatology, and we look forward to working together to identify solutions that advance the goals of open science without undermining the communication of research findings and analyses through peer-reviewed journals.

Thank you again for the opportunity to submit these comments. Stay safe and best wishes.

Sincerely,

A handwritten signature in black ink, appearing to read "M. Bishr Omary". The signature is fluid and cursive, with a long horizontal stroke at the end.

M. Bishr Omary, PhD, MD, AGAF
President, AGA

¹These policies were developed pursuant to OSTP's requirement that agencies "shall use a twelve-month post-publication embargo period as a guideline for making research papers publicly available . . ." See OSTP Memorandum on "Increasing Access to the Results of Federally Funded Scientific Research" (Feb. 22, 2013).

² America COMPETES Reauthorization Act of 2010, Section 103(b)(9), *available at*: <https://www.congress.gov/111/plaws/publ358/PLAW-111publ358.pdf>.



OFFICE OF THE PRESIDENT
California Digital Library

415 20th Street
Oakland, California 94612

May 5, 2020

Dr. Lisa Nichols
Assistant Director for Academic Engagement
Office of Science and Technology Policy
Submitted via email: OpenScience@ostp.eop.gov

RE: Docket ID [OSTP-2020-0004](#) Request for Information: Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research (RFI Response: Public Access)

Dear Dr. Nichols:

I write on behalf of the California Digital Library of the University of California (UC) with regard to the Request for Information (RFI): Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research, issued on February 19, 2020. CDL appreciates the deep interest the Office of Science and Technology Policy (OSTP) is taking in this important issue and the concerted effort made to bring in stakeholder voices, including that of the libraries.

The California Digital Library (CDL) is a unit within the UC Office of the President and provides transformative digital library services, grounded in campus partnerships and extended through external collaborations that amplify the impact of the libraries, scholarship, and resources of the University of California. CDL seeks to be a catalyst for deeply collaborative solutions providing a rich, intuitive and seamless environment for publishing, sharing and preserving our scholars' increasingly diverse outputs, as well as for acquiring and accessing information critical to the University's scholarly enterprise. Increasing public access—open access—to scholarly works is a core concern and goal of the CDL, so I am pleased to provide the following response to this OSTP RFI.

What current limitations exist to the effective communication of research outputs (publications, data, and code) and how might communications evolve to accelerate public access while advancing the quality of scientific research? What are the barriers to and opportunities for change?

Effective communication of research outputs is profoundly limited by a patchwork distribution system wherein some research is openly available at publisher sites; some research is restricted at publisher sites, but is available via open versions in repositories or on personal websites; and most research is entirely paywalled, restricting access to only those who license the content. The progress of scientific

discoveries, clinical trials, and industry is necessarily slowed by such variable and restrictive access to relevant and timely research findings. Although efforts are being made to help researchers navigate this patchwork system, including the development of tools that search for open versions of restricted publications, accessing research can still be difficult and time consuming, especially for researchers who are not affiliated with large research institutions that have subscriptions to thousands of journals. As we have seen most recently in the context of COVID-19 research, these barriers to information must be broken down to enable the global community to move with alacrity on matters of urgency that require shared knowledge and information.

In light of the artificial delays created by the current research distribution system and the pressures to move quickly in areas such as public health, climate change, etc., we are seeing a rise in the number and usage of pirate sites. These sites serve two distinct needs that the commercial marketplace does not satisfy: providing access to content for those who lack journal subscriptions and offering a frictionless access model through aggregated search and retrieval across all publications for even those who already have legal pathways to access these materials. Rampant use of illegal websites strongly signals the need for systemic change in the way research is disseminated: paywalls and silos slow access to information. If we hope to advance as a global society facing significant complexities, we must reimagine the systems we use to distribute the knowledge we acquire. If the marketplace evolved to address the needs and solve the problems of its consumers, these illegal sites would no longer attract a significant audience.

The primary barrier to the timely distribution of knowledge is the legacy subscription system, which enables publishers of scholarly content to claim copyright in published research and aggressively defend their copyright in order to maximize their profit margins. These publishing companies are financially incentivized to restrict access to the materials they publish, a model that is at cross-purposes with the values and needs of the broader research community. Providing public access to scholarship at the point of publication would address these needs and support timely progress toward both scientific discoveries and commercial inventions.

This is not an argument for the dissolution of publishers as we know them: rather, publishers can continue to thrive under business models built around this immediate public access rather than paywalled content. As of 2017, [less than 15%](#) of publications were immediately available upon publication (either published open access or available in an open access repository with no embargo). Recognizing the growing demand for public access to research, new business models are being developed as part of [open access agreements](#) between publishers and libraries, including four recent agreements established between the University of California (UC) and the [Association for Computing Machinery \(ACM\)](#), [Cambridge University Press](#), [JMIR Publications](#) and the [Public Library of Science \(PLOS\)](#). These agreements are creating an environment in which all parties - the academy, commercial player, societies - are incentivized to make research openly available upon publication, thus leveraging their assets for the good of science and society, and doing so in a sustainable way.

Academic institutions are also stepping up to provide open access publishing services themselves in support of scholarly communication. These “library publishing programs” help punctuate institutional efforts to develop new agreements with publishers by providing alternatives for faculty who seek to transition their journals to open access or launch new open access publications. Rather than simply outsourcing the distribution of their research to commercial interests, universities and colleges are increasingly insisting on their own publishing role -- providing the kind of infrastructure and support that enable their faculty to establish open access publications that ensure timely and expansive sharing

of the research in their fields. These institutional publishing programs are also well positioned to help scholarly societies who are looking to transition to open access; offering both consulting services and publishing platforms, these institutions provide a safe environment to explore new business and sustainability models. For more information about efforts to support society transitions to open access, see [Transitioning Society Publications to OA](#), the [Society Publishers Coalition](#) and [Subscribe to Open](#), as well as UC's own [Office of Scholarly Communication toolkit](#) for transitioning journals to open access.

What more can Federal agencies do to make tax-payer funded research results, including peer-reviewed author manuscripts, data, and code funded by the Federal Government, freely and publicly accessible in a way that minimizes delay, maximizes access, and enhances usability? How can the Federal Government engage with other sectors to achieve these goals?

This RFI and the Federal Government's ongoing engagement with higher education institutions, researchers, publishers, and the public is an important step for ensuring that federally funded research results are made readily available to all parties who would benefit from access to this research.

The next step must be stronger requirements for zero-embargo policies, which would ensure the posting of the author accepted manuscript in an open repository immediately upon publication in a journal and, consequently, would incentivize further innovation in open access business models. Similarly, data and code should be openly distributed through appropriate venues, and current policies regarding data and code produced through federally funded research should be strengthened by requiring updated assertions of reciprocal connections between publications and publicly available data sets, software, and any other tools.

OSTP has the opportunity to accelerate the much-needed transition to open access to meet the needs of the global community with leadership and policy guidance. To ensure steady progress toward public access to scientific knowledge, the California Digital Library (CDL) strongly urges OSTP to establish a zero-embargo for all author accepted manuscripts resulting from federally funded research, regardless of place of publication, and to coordinate the adoption of this policy across all federal agencies and departments. Such a policy would both ensure that federally funded research would be made available immediately upon publication, with no restrictions to access, and reinforce library efforts to establish open access publishing agreements with commercial publishers; without the opportunity to restrict access to new publications and control their distribution for profit, these publishers would be strongly motivated to work with libraries on open access agreements that could sustain their business while transitioning to an open access publishing model.

Because access to related datasets and code is crucial for improving scientific rigor and [maximizing impact](#) (by enabling reproducibility and new research), CDL also urges OSTP to spearhead the use of [FAIR Principles](#) as a basis for standardized data sharing requirements, which will also ease the compliance burden on researchers. In addition to providing funding for essential components such as data management, research data support staff, and data repository costs, OSTP has an opportunity to encourage the use of consistent federal guidance regarding 1) data preparation and management (e.g. machine-actionable Data Management Plans and use of persistent identifiers) and 2) characteristics of acceptable data repositories, both of which would have significant impact in spurring the reuse of data sets. Finally, while CDL champions access to and openness of research data, we also recognize the importance of guidelines and policies protecting privacy and security, as in the case of personally

identifiable or other sensitive data. These issues too could be more thoroughly attended to at the federal level, through OSTP coordination.

Finally, increased support and guidance for grant recipients would help create a culture shift toward open dissemination. Requiring a strategy within grant applications for open dissemination of research results, and encouraging researchers to allocate funds for the open publication of research, would incentivize more authors to actively choose open publication venues.

How would American science leadership and American competitiveness benefit from immediate access to these resources? What are potential challenges and effective approaches for overcoming them? Analyses that weigh the trade-offs of different approaches and models, especially those that provide data, will be particularly helpful.

Openly available research outputs--including [research publications](#), data, and code--are downloaded and cited significantly more frequently than their paywalled counterparts. Ensuring that American research results are immediately available to the rest of the world is the most effective way of fortifying American scientific leadership and can also lead to more productive global partnerships in research ventures; disseminating research results openly helps keep global conversations aligned with American research priorities. Similarly, American innovation can flourish when scientists and industry have immediate access to new findings and breakthroughs worldwide - and are not stalled by paywalled barriers to access. Our competitiveness across a broad array of disciplines and economic spheres of activity grows relative to the speed at which public and private researchers have access to the latest scientific results.

CDL believes that there are many forms of potentially transformative open access: “green” zero-embargoed open access (depositing research outputs in open repositories regardless of publication model), “gold” open access (publishing in open access with a publisher), and “diamond” open access (publishing in open access without publication fees) are all effective in delivering scientific findings to the scholars who need them -- but no single model is likely to single-handedly effect the change we seek in the near term. The green approach faces challenges of compliance and the complexities of helping researchers identify and deposit their “author’s accepted manuscript”; the gold approach requires that we reach sustainable agreements with publishers in establishing what is effectively a major overhaul of their long-established business models; and the diamond approach requires institutions to scale up their publishing efforts substantially to provide expansive publishing services. But all three efforts, together, are likely to have a synergistic effect and get us to a tipping point. We recognize, and have ourselves deployed, myriad strategies for advancing open access, understanding that there is no single model that is optimal for all sectors. We must work collaboratively to attain the goal of public access by approaching the challenge from a number of angles - a multi-varied approach that we actively support, including endorsing and organizing community conversations around the UC Libraries 2018 [Pathways to Open Access](#) report.

Any additional information that might be considered for Federal policies related to public access to peer-reviewed author manuscripts, data, and code resulting from federally supported research.

A zero-embargo policy for federally funded researchers is a measured yet impactful step towards ensuring broader public access to research, with all of its attendant benefits. This policy will incentivize publishers to innovate new business models that are rooted in open-ness, rather than sustaining business models that are to the detriment of science and society by gating access through a paywall.

Publishers, in a recent OSTP meeting, expressed a desire for “thoughtful experimentation with a zero embargo policy,” suggesting that OSTP should move slowly and carefully toward establishing any such policy. Many academic institutions worldwide, however, have long-established open access policies (at the University of California, adopted by the faculty in 2013) that declare the desire and intention of making scholarly research openly available regardless of publisher policy. These policies, as well as the NIH PubMed Central policy, effectively constitute that experimentation. Hundreds of thousands of research articles have been made open access in the past decade without compromising the standing of the publisher as the source of the “publication of record.” Now is not the time to move tentatively; now is the time to move boldly toward a new normal that insists on the free exchange of knowledge and information in the service of advancing science, technology, and society.

Thank you for considering these comments and for encouraging a robust discussion of this important issue.

Sincerely,

A handwritten signature in blue ink, appearing to read "Günter Waibel".

Günter Waibel
Associate Vice Provost & Executive Director
California Digital Library, UC Office of the President



The Society for the Psychological Study of Social Issues

Executive Committee

C/O: Sarah Mancoll, Policy Director

The Society for the Psychological Study of Social Issues (SPSSI)

700 Seventh Street, SE

Washington, DC 20003

Email: smancoll@spsai.org

Wednesday, May 6, 2020

Dr. Lisa Nichols, Assistant Director for Academic Engagement

Office of Science and Technology Policy

Email: publicaccess@ostp.eop.gov

Subject: RFI Response: Public Access

Dear Dr. Nichols,

On behalf of the Society for the Psychological Study of Social Issues (SPSSI), we thank the Office of Science and Technology Policy for soliciting public comment on the issue of public access. Founded in 1936, SPSSI is an organization of scholars, educators, and students who are deeply invested in using psychological science to benefit society. As a scientific society, we host an annual research conference, co-sponsor several smaller research conferences throughout the year, support numerous research grant and award programs, sponsor predoctoral and postdoctoral science policy fellows, and host skill-building webinars and in-person trainings. We also publish a book series and three peer-reviewed journals: *The Journal of Social Issues*; *Analyses of Social Issues and Public Policy*; and *Social Issues and Policy Review*.

Below, please find our comments, which address specific questions outlined in the Request for Information.

Question 1: What current limitations exist to the effective communication of research outputs (publications, data, and code) and how might communications evolve to accelerate public access while advancing the quality of scientific research? What are the barriers to and opportunities for change?

- **Diversifying dissemination strategies.** One limitation is that research outputs are typically reported in scientific publications whose historic role is to inform other scientists. As a society of psychologists and allied social scientists who study social issues, we understand how important it is that new knowledge not only inform the field but also inform broader human wellbeing. This may be accomplished in many ways: Through practice-oriented research briefs, through short videos, through scientist attendance and interaction within practice spaces, such as practice-oriented conferences, etc.

- **Supporting more community-engaged research.** One especially important area to nurture is community-engaged research, whereby scientists work in partnership with communities to better understand how research can address community problems. By engaging more with non-scientist stakeholders, scientists will help the public not only actively participate in the county’s scientific enterprise but also become better consumers and users of scientific knowledge.

Question 2: What more can Federal agencies do to make tax-payer funded research results, including peer-reviewed author manuscripts, data, and code funded by the Federal Government, freely and publicly accessible in a way that minimizes delay, maximizes access, and enhances usability? How can the Federal Government engage with other sectors to achieve these goals?

- **Supporting the evolution of scientific society models and processes.** Scientific societies have played a critical role over the last 100+ years in nurturing fields of scientific inquiry through publications, conferences, and professional development opportunities. In SPSSI’s case, we have been at this work for more than 80 years. Central to SPSSI’s mission as a scientific society is our desire that knowledge not be confined to books (or journal articles, as the case may be). Federal agencies can better engage with scientific societies like SPSSI by helping them evolve their models and processes so that these societies can continue to serve the next generation of scientists and scientific institutions while also serving the public interest. For example, many scientific societies fund or subsidize their programming—e.g., conferences, grants, fellowships—through journal subscriptions. What new models and processes might societies embrace so that they can continue to provide a rich array of programming if journal subscription revenue decreases?

Question 3: How would American science leadership and American competitiveness benefit from immediate access to these resources? What are potential challenges and effective approaches for overcoming them? Analyses that weigh the trade-offs of different approaches and models, especially those that provide data, will be particularly helpful.

- **Appreciating the value, and added value, of diverse public and private stakeholders.** One challenge is that the scientific enterprise consists of many interrelated public and private stakeholders. In our field, research is funded by federal agencies and also by private foundations, foreign public research agencies, state and local public agencies, private universities, public universities, and other actors. A single peer-reviewed paper is often not the result of a single source of funding, but rather, the culmination of a body of work generated by one or more scientists who have been supported by multiple public and private actors.
- **Supporting global science leadership.** On an equally important note, many scientists who are our members, and who contribute to our society and field, are not American. Supporting American science leadership also means supporting global science leadership, as American scientists deeply benefit from the contributions on non-American scientists, and vice versa. For example, many of the social phenomena that our members study—poverty, intergroup conflict, discrimination, civic engagement—deeply benefit from scientific inquiry that extends beyond U.S. borders. Moreover, many of the challenges facing the U.S. are

challenges that have no borders, or for which borders are highly permeable (e.g., the spread of vector-borne diseases, the effects of climate change). Scientific progress is not a zero sum game, and in many fields—including especially psychology and the allied social sciences—treating science as a zero sum game can have detrimental effects for both the people who carry out this work and the people who stand to benefit from their work.

- **Making research outputs more freely and publicly available does not in itself come at zero cost.** The organizations that peer-review and publish research outputs have built systems, created infrastructures, and trained professionals to carry out this work. The process of reviewing and publishing peer-reviewed research outputs does come at some cost, and that cost must be accounted for at some point in the process. With newer open access journal models, the costs are typically gathered up front, when an author or group of authors submits a paper for review and/or publication. This model can make the cost of submitting a paper for review and/or publication prohibitive, privileging scientists with larger research grants, scientists in the global North, scientists who are based out of research-intensive rather than teaching-intensive universities, scientists in certain kinds of fields (e.g., those who are biomedically focused), and scientists who are more senior in the field. Such an outcome makes *certain kinds of research* more freely and publicly available, but at a cost to the broader diversity of the field.

Question 4: Any additional information that might be considered for Federal policies related to public access to peer-reviewed author manuscripts, data, and code resulting from federally supported research.

- **Balancing the need for data transparency and access with the need for data privacy and protection.** As SPSSI noted in its 2016 comment regarding proposed revisions to the Common Rule ([link](#)), we need to be careful when it comes to research and research outputs that relate to vulnerable populations (e.g., people who have experienced domestic abuse or workplace discrimination). Our members study people and groups that could be vulnerable to exploitation or harm if research outputs—for example—allowed for the disaggregation of sensitive data by the public. Federal policies related to public access to peer-reviewed author manuscripts, data, and code must take into account the need for data privacy and protection, especially where research involves human subjects and where HIPAA, FERPA, etc. may not apply.
- **Safeguarding the data of historically marginalized or disempowered communities.** In the United States, we continue to grapple with the legacy of research that was conducted at the expense of people from historically marginalized or disempowered communities (e.g., African Americans, Native Americans). Communities rightly want to collaborate with scientists who will work in partnership with them and not carry out their research *at the expense of* the people they study. In psychology, participatory action research and other research methods have been developed to address some of these concerns. As federal agencies move forward in their efforts to make data more freely and publicly available, they should consider the ethical and legal implications of ensuring such access while also protecting the rights of the people who contributed that data.

- **Developing guidelines for the storage and use of qualitative data.** In the social sciences, our understanding of human behavior and society benefits from quantitative methods, qualitative methods, and increasingly, mixed methods. Qualitative data and mixed methods data provide unique challenges and opportunities, especially as data storage and use has historically focused on quantitative data and data from particular subsets of the research enterprise (e.g., biomedical research). Here too attention must be paid to data privacy and protection.
- **Continuing to support scientific societies.** Scientific societies generate many benefits—to people, to education, to policy, to equality, and to social justice—that far outweigh the drawbacks of the journal subscription model. Any policy that overturns these organizations must ameliorate the identifiable harm by providing for their future. Because the current model is effective, and the costs are not as severe as some would have it, the policy of the United States government should not be cavalier toward the organizations that maintain education, information, and training of the next generation of scholars.

Thank you for considering our comment. We hope that the Office of Science and Technology Policy will use SPSSI as a resource as it continues to explore the issue of public access.

Sincerely,
Executive Committee, Society for the Psychological Study of Social Issues

Stephanie Fryberg, Ph.D.
President

Keon West, Ph.D.
President-Elect

Elizabeth Cole, Ph.D.
Immediate Past President

Richard Wiener, Ph.D.
Secretary/Treasurer

Adrienne Carter-Sowell, Ph.D.
Council-Elected Representative to the Executive Committee

May 6, 2020

Response to Request for Information on Public Access to Peer-Reviewed Scholarly Publications,
data and Code Resulting from Federally Funded Research

Office of Science and Technology Policy (OSTP)
FR Document 2020-06622
Lisa Nichols, Assistant Director for Academic Engagement
Office of Science and Technology Policy
Executive Office of the President
Eisenhower Executive Office Building
1650 Pennsylvania Avenue
Washington, DC 20504

Dear Assistant Director Nichols:

As Vice Chancellor for Research and Innovation at the University of Illinois at Urbana-Champaign, I thank you for the opportunity to respond to OSTP's Request for Information regarding approaches for ensuring broad public access to the peer-reviewed scholarly publications, data, and code that result from federally funded scientific research.

The University of Illinois at Urbana-Champaign has a unique breadth of research expertise, with world-renowned strengths in engineering, chemistry, biology, agriculture, business, the humanities, arts, and the social sciences, with many top-ranked programs across each of these broad disciplines. Each year, we conduct over \$650 million in R&D. Both our technology incubator, EnterpriseWorks, and our University of Illinois Research Park, located in the fastest growing county in the State of Illinois, provide a proven path from scientific discovery to economic development, and contribute to the development of the future U.S. workforce.

We are pleased to see that OSTP is working together with the NSTC Subcommittee on Open Science to increase access to the results of federally funded scientific research. To ensure our response is reflective of the breadth of research at Illinois, we sought input widely across our campus. The comments below distill the rich and thoughtful input we received from all sectors.

First and foremost, we can testify to our university's longstanding, deep commitment to public access. For example, one researcher underscored how essential it is for our campus to aspire to make all materials open and accessible "regardless of federal funding" and cited COVID-19 as an example of a pressing need. Our University Open Access Policy was adopted in 2015 in support of disseminating our research and scholarship as widely as possible. Additionally, our Research Data Service has been in place since 2014, curating and openly publishing researcher datasets in accordance with the FAIR principles. Finally, our Office of Technology Management has supported open source software licensing for many years.

Thus, we are pleased to see the commitment to public access being reinforced by OSTP. We appreciate that OSTP is eager to address remaining barriers and ensure that open access policies can be actualized.

[*Barriers to Communication of Research Outputs and Opportunities to Accelerate Public Access.*](#)

Publications

Expense: Open access (OA) of peer-reviewed publications is an effective method for transparency of research outputs. However, due to publisher pay-walls, not all research results are readily available. While OA could address this issue, high fees for OA publishing make it prohibitive for

many researchers, raising concerns that OA skews publication and attention to well-funded research programs. Investigators in some fields already pay exorbitant Article Processing Charge (APC) costs—most often thousands of dollars/article—and this on top of high subscription fees—which exceed \$10M/yr—in order to obtain journal access. The dual cost streams created by such exploitative pricing are unsustainable.

Quality: The role of professional publishers in enhancing the quality of publicly available information is essential, and worthy of investment, despite financial challenges. Peer review is critical along with revision, formatting, fact checking, citation, verification, proofreading, design, layout, and typesetting, among other aspects of publishing. These activities ensure reliable, high-quality, and authoritative information, but do not come without costs.

Impact on Society Publishers: We heard serious concerns about the impact of immediate public access on professional societies, who bear significant responsibility for both quality and dissemination of articles, in the absence of a substantial shift in the way publishing is funded. A shift is beginning to materialize through “transformative agreements” (an opportunity; see below), but these efforts are fledgling. In the meantime, some activities subsidize others. Many researchers who are active in and dependent on their non-profit professional societies believe immediate access could negatively impact the ability of professional societies to publish critical and authoritative disciplinary journals. These journals not only fulfill important roles within the discipline as respected scholarly communication mechanisms, but also generate revenue that supports professions more broadly, for example by enabling their ability to catalyze new initiatives, provide workforce development, and host conferences and other professional development activities (most of which barely cover their costs).

Data

Definition and Guidelines Needed: Unlike publications, which are a product with clear stages of maturation and a clear purpose, outside of a few established data types and disciplines, data in general suffers from multiple layers of ambiguity- Which data? In what format? Through what mechanism? Towards what goal? The result is that while researchers are often open to the idea of sharing data--there is still rampant confusion about what data sharing means in practice or even what’s meant by data itself. Additionally, for data that has some risk associated, for example potential for personal identification or misuse due to licensing constraints, we err on the side of caution given the ramifications of inappropriate disclosure. Accelerating access without clear guidelines grounded in need and disciplinary objectives will not improve the situation.

Expense: There are many circumstances where data are of known utility, but the expense of developing and maintaining scalable, user-friendly, and technologically-advanced data resources is a challenge. In fact, requiring data management plans without firm commitments for the funding to support the infrastructure is misleading and counterproductive, implying that the problem has been solved when the resources for on-going support are scarce at best. For domains in which data have proven utility and high long-term value, there is a huge opportunity to sustain those resources that have already proven themselves essential but struggle to survive. Instead, the current emphasis assumes uniform need across all disciplines and data types, which dilutes efforts and shunts funding towards prospective, but unproven, needs.

Code/Software

Many domains rely on code and software as core components of the research process, and many researchers actively share and maintain code. However, challenges similar to those found with data are present - towards what end is code shared? If the goal is sharing software so people can see it, this could be done today via policy. However, if the goal is to share software so people can use it, then resources are needed to sustain software maintenance for long-term use. One-time funding through grants enables creation of software products, but functional software builds and depends on all underlying layers, and long-term maintenance is needed.

Interdisciplinarity and Public Good

Federal funding could enable those in humanities, arts, and humanistic social sciences to examine how disciplines currently incorporate, navigate, and/or challenge existing open science practices. This inquiry may shape future open science practices and policies by bringing to light overlooked principles, such as prioritization of activities that could serve vulnerable populations or include citizen scientists. Not only can multiple publics be educated through open access but also funding models and open science practices can be established that are supportive of the projects, data, and code developed by citizen scientists. In light of the coronavirus epidemic, this could include research surrounding internet accessibility, the digital divide, and net neutrality.

Recommended Actions by Federal Agencies

Publications

The federal government should take proactive steps to address the financial barriers to access federally funded research results presented by the OA model. This could include subsidizing the costs of OA publications as well as regulating or negotiating with publishers to reduce--or at least modulate--the costs of OA. Mandating all federally funded research be published as OA, coupled with supplemental funding mechanisms to meet the costs of OA, was suggested. There was support for federal support of the peer review process itself, in order to maintain the quality of peer review and incentivize participation by researchers. Some scientists suggested the creation of a federal repository of articles (and data) generated by federally funded research. Lastly, copyright limitations on federally funded research publications could be curtailed to improve scientific literacy and accessibility.

“Transformative agreements” are gaining ground as a means to sustain the publishing ecosystem, via a “shift away from payment to read and toward payment to publish.”¹ For example, the University of Illinois at Urbana-Champaign very recently finalized such an agreement with both the Institute of Electrical and Electronics Engineers (IEEE) and the Microbiology Society. Our agreements now provide read access to all material, open or closed, but with negotiated pricing such that we anticipate all Illinois articles will be published for immediate public access with greatly reduced APC charges that are pre-paid or, in some cases, substituting read subscription prices for APC charges. Currently, such agreements are relatively new, labor intensive to initiate, and require more upfront funding, but they show promise for a concerted and meaningful shift in the way in which scholarly communication is financed. As we encourage OSTP and the federal agencies to increase OA support, we are especially hopeful that such support will include facilitating similar opportunities in order to truly transform the ecosystem in a way that balances costs equitably and intelligently.

Publication speed is vitally important to the communication of research results. Specifically, given bottlenecks in the peer review process where publication can take a year or more, we encourage federal agencies to support initiatives that address publication speed and also encourage availability of preprints as a rapid way to make preliminary research available.

Data and Code

Public access to data and code--at the scale currently suggested--is a different problem than public access to publications. Federal agencies should support efforts to convene disciplines to review/define the modes and products of openness that truly advance their field. Input we received noted that open source lab procedures may be as equally important as open source code. “Open source should not just apply to the rules that our computers follow when helping in running experiments, but also the rules our researchers follow while running experiments.”

¹ Hincliffe, L. J. (2019) Transformative Agreements: A Primer. <https://scholarlykitchen.sspnet.org/2019/04/23/transformative-agreements/>

Second, the creation of repositories has been recognized as a potential vehicle for meeting federal transparency and availability goals. Complexities of federally funded data and code complicate wide-open sharing. Reasonable time should be allowed after the end of a project for researchers to fully ensure data quality prior to public availability (e.g. creation of documentation, etc.). Additionally, the extreme competitiveness of funding leads many researchers to feel the need to utilize data for publications and other outputs prior to making it freely available. Efforts by funding agencies to mitigate these concerns would go far.

Third, for areas in which software access and preservation is well-articulated, funding agencies can provide (1) incentives to support community contributions (2) funds for direct support. With publicly funded software, the developers should propose a support plan as part of their proposal. Agencies should commit to reasonable maintenance funding, not tied to novel research. Finally, agencies should discourage the imposition of overly restrictive intellectual property terms on publications, code and data.

Benefits of Immediate Access to Federally Funded Research Results

We believe that advances in science are improved through the sharing of data and results, and benefits are not limited to within the U.S. Competitive advantages come through developing a culture of openness that supports the fundamental commitment to knowledge and the ability to make meaningful impacts. Over time, these principles have inspired the most influential scientists and scientific breakthroughs. While undoubtedly such a stance leads to better public policy in the U.S., as well as research supporting the work and mission of federal agencies, American competitiveness will also be strengthened by maintaining our nation as a destination for the most creative, ambitious, and open minds.

Additional Information for Consideration

In the course of our input gathering, we encountered questions about language and definitions. What constitutes “data” or even “scientific research”? Are “code” and “software” the same? With ever-widening interdisciplinarity, these boundaries have become blurred. While definitions are difficult, they provide important parameters that allow the goals and objectives of future policies to be understood, internalized, and acted upon.

Along these lines, licensing came up frequently with some debate as to whether all research should be licensed to allow text and data mining by default or whether this is unnecessary given fair use case law. Any subsequent policies would do well to clarify this issue. As implied, access to publications in formats other than PDF is also desirable to better enable text mining and other computational analyses across the literature.

Pilot periods and evaluations will be critical in supporting new policy initiatives. Reflecting on this, we wondered about the outcomes of the efforts and funding invested subsequent to the OSTP Public Access Memo of 2013. Evaluating the impacts of the 2013 Memo would provide momentum to move forward in promising directions and pivot in others.

Finally, we hope that policies and requirements relating to open access can be harmonized across agencies, in order to minimize administrative burden and avoid diversion of investigator effort.

In closing, we thank you again for the opportunity to provide comments as OSTP addresses these important issues. We look forward to participating in continued dialogue to support OSTP’s efforts to facilitate access to the products of federally funded research in order to address society’s most pressing challenges and foster economic growth.

Sincerely,



Susan A. Martinis, Ph.D.
Vice Chancellor for Research and Innovation
Stephen G. Sligar Professor of Molecular and Cellular Biology
Professor of Biochemistry



Dr. Lisa Nichols

Assistant Director for Academic Engagement
Office of Science and Technology Policy
United States of America

Subject

Response to Request for Information: Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research

To whom it may concern:

As coordinator of the global Open Access 2020 Initiative (OA2020), I am honoured to enthusiastically respond to the Request for Information from the Office of Science and Technology Policy (OSTP) concerning open access to federally funded peer-review research.

The Open Access 2020 Initiative (OA2020) is a global alliance of academic and research organizations committed to accelerating the transition of the current subscription system of scholarly publishing to new open access models, to ensure that research articles are published immediately open access and that the costs associated with their dissemination are transparent, equitable and economically sustainable. To date, our foundational document, the Expression of interest in the Large scale implementation of Open Access to scholarly Journals has been signed by more than 140 research organizations representing over 4600 institutions from all regions of the world (<https://oa2020.org/mission/>).

Even though Open Access is now a shared vision of the world's academic communities, research councils, and funding bodies, nearly 85% of the world's scholarly outputs are still locked behind paywalls and made openly available after embargo periods, inhibiting the full impact of research and

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<https://oa2020.org>



putting enormous strain on institutional budgets. The new publishing initiatives and other efforts of the past twenty years have made some headway, but progress is slow. The challenges facing science and society are pressing, and we cannot wait any longer for the desired benefits of an open information environment.

Immediate, open access to research will foster innovation. The paywall system is a relic of the print age, which hinders the full potential of digital environments and is out of sync with the demands of 21st century research, which should be based on ability to freely interrogate and share the worlds scientific outputs. We need innovative publishing services that will improve, not impede, the research process.

With increasing momentum, as seen through global efforts of research performing organizations, such as our own OA2020 Initiative, and the efforts of research funding organizations, such as the Plan S Principles promoted by cOAlition S, these stakeholders continue to adopt and adapt these policies as needed and have overall experienced that those imposing paywalls are often serving their own profit-driven interests that do not mirror the mission of the research community. Thus, this is an opportune time for the federal agencies of the United States to take the natural next step to further improve open access to research.

As the pursuit of research is to increase global knowledge, disseminating work immediately “open access” with no embargo means that scholars and scientists can share their findings with peers, including those in less resourced institutions, as well as with practitioners in the field and the general public. Open Access accelerates the pace of discovery and the translation of research into benefits for the public by sharing results with other researchers in a timely manner who can build on it and practitioners who can apply the new knowledge.

We therefore heartily support proposals that federal agencies eliminate the twelve-month post-publication embargo period, ensuring immediate access to research outputs.



Thank you for your time, consideration, and attention on this important topic. I would be happy to address any questions or information gaps.

With best wishes,

Colleen Campbell
Open Access 2020 Initiative
Max Planck Digital Library
Amalienstr. 33
80799 Munich
Germany



May 6, 2020

BY ELECTRONIC SUBMISSION

Kelvin K. Droegemeier, PhD
Director
Office of Science and Technology Policy
Eisenhower Executive Office Building
1650 Pennsylvania Avenue, NW
Washington, DC 20504

Response to OSTP Request for Information – FR Doc. 2020-06622 – “Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research”

Dear Dr. Droegemeier:

On behalf of the American Society of Nephrology (ASN), thank you for the opportunity to provide comments regarding the “Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting from Federally Funded Research.” ASN’s more than 21,000 physicians, scientists, nurses, and other kidney health professionals, are working on behalf of 37,000,000 Americans with kidney diseases – as well as the 850,000,000 people worldwide with kidney diseases – to advance patient care while searching for better treatments and cures.

ASN urges the White House Office of Science and Technology Policy (OSTP) to not adopt a policy mandating the free distribution of peer-reviewed manuscripts earlier than one year after publication. As the largest producer of education and information in the kidney arena in the world, ASN is well-positioned to articulate this position and provide suggestions for how OSTP can move forward to address its concerns.

As an independent society publisher, ASN produces three journals for a global nephrology readership: *Clinical Journal of the American Society of Nephrology* (CJASN), the most widely read journal in the specialty, *Journal of the American Society of Nephrology* (JASN) the most highly cited nephrology publication, and the newly released *Kidney360*, ASN’s online only, open access journal enjoying its first months in publication. ASN also holds Kidney Week, an annual meeting in the United States that brings together more than 14,000 participants from across the world.

Ultimately, ASN strives to support the progress of science by producing and broadly disseminating the highest quality peer-reviewed journals possible. Publishers and societies have worked to strengthen scholarly communication and promote open science. ASN has led several initiatives to increase access to scientific literature in our



field, including providing free access to all ASN members and trainees, including nephrology fellows. ASN also provides open access to significant or timely studies to the general public when an immediate public benefit is apparent, such as providing free access to all studies related to COVID-19 in all three journals.

As noted, ASN launched the open access journal, *Kidney360*, which aims to “facilitate timely and broad dissemination of kidney science by offering rigorous and expeditious peer review and rapid open access publication.”¹ It is critical that these efforts take place within a framework that respects both intellectual property rights and our ability to invest in high-quality publications while not hindering researchers from communicating their discoveries.

As you are aware, federal agencies currently require that peer-reviewed manuscripts be made freely available online—within one year of publication—if they discuss research funded at least in part by a government grant.² This policy represents a significant compromise that balances both our shared goals of providing broad access with the need for our organization to recoup the substantial investments we make in the peer-review, editing, composition, publication, distribution, and long-term stewardship of these articles.

This one-year compromise contrasts with the length of a full copyright term of life-of-the-author plus 70 years. Importantly, this compromise reflects Congress’ guidance (in the authorizing legislation for the current policy) that the Presidential Administration must “take into consideration the role that scientific publishers play in the peer-review process in ensuring the integrity of the record of scientific research, including the investments and added value that they make.”³

Reducing or eliminating the current one-year embargo would significantly jeopardize ASN’s ability to invest in producing the high-quality peer-reviewed journals that our readers in the field of nephrology rely on. In so doing, such a policy would violate Congress’ clear guidance to take our role and investments into consideration. Furthermore, such a policy would directly result in a reduction in either the quantity or

¹ Allon, M. Mission and Scope. *Kidney360.Org*. Accessed 4/30/2020.

<https://kidney360.asnjournals.org/content/about-us>

²These policies were developed pursuant to OSTP’s requirement that agencies “shall use a twelve-month post-publication embargo period as a guideline for making research papers publicly available . . .” See OSTP Memorandum on “Increasing Access to the Results of Federally Funded Scientific Research” (Feb. 22, 2013).

³ America COMPETES Reauthorization Act of 2010, Section 103(b)(9), *available at*: <https://www.congress.gov/111/plaws/publ358/PLAW-111publ358.pdf>.



quality (or more likely, both) of peer-reviewed journal articles produced by hundreds of organizations like ASN.

This approach would harm research, discovery, and innovation as well as be detrimental to the more than 37 million Americans living with kidney diseases. These citizens are the ultimate beneficiaries of the scholarly journals and content ASN produces through CJASN, JASN, and *Kidney360*.

ASN urges you not to disrupt our ability to support the advancement of research, patient care, and education in nephrology, and we look forward to working together to identify solutions that advance the goals of open science without undermining the communication of research findings and analyses through peer-reviewed journals.

Again, thank you again for the opportunity to submit these comments. To discuss this letter or ASN's suggestions for moving forward collaboratively, please contact Bob Henkel, ASN Senior Director of Publishing, bhenkel@asn-online.org, 202-557-8360.

Sincerely,

A handwritten signature in black ink, appearing to read "Tod Ibrahim".

Tod Ibrahim
Executive Vice President

RFI response: public access

Responder: Springer Nature

We're very proud of the role that Springer Nature, the [world's most comprehensive Open Access publisher](#), has played – and continues to play – in making research more open. So we wholeheartedly agree with the goal of the OSTP and the NSTC SOS to make the knowledge, information and data generated by federally funded research more readily accessible to students, clinicians, businesses, entrepreneurs, researchers, scientists, technologists, and the general public. As noted in our [recent blogpost](#), the global nature of research means that the way to accomplish this has to be carefully thought out, and ultimately structured in a sustainable way. Primary research papers **should** be freely available at publication. The world needs the quality-assured, value-added Version of Record (VoR) of these papers (Gold OA), maintained by editors and publishers, to be open. Our [recent announcement](#) to commit the vast majority of our non-OA journal portfolio to transform to open access shows we are focused on making that happen as quickly as possible. However, Green OA – in the form of AAMs, which are inferior to the VoR, confuse the scientific record, and undermine the sustainability of publishing – threatens to derail that progress. A zero-embargo mandate for research articles without explicitly addressing funding would lead us down the blind-alley of Green OA, away from Gold OA: the doorway to open science. These points and others are explored below in our specific responses to the topics on which the OSTP has requested perspectives.

What current limitations exist to the effective communication of research outputs (publications, data, and code) and how might communications evolve to accelerate public access while advancing the quality of scientific research? What are the barriers to and opportunities for change?

Scholarly communication is currently undergoing a fundamental transition towards a more open ecosystem that brings with it a myriad of benefits. Publishers in general and Springer Nature in particular, are actively engaged in the transition process. We have eleven national transformative agreements in place, including the world's largest agreement in terms of article volume with Projekt DEAL in Germany. In 2019 we published more than 100,000 Gold OA articles – 1 in every 3 we accept. Over the past twenty years we have published far more Gold OA than any other publisher: we know how it works and how to scale it.

We appreciate that there is still a long way to go and many issues to resolve. The key to resolving these issues efficiently and effectively is engaged collaboration among the relevant actors - funders, policy makers, institutions, societies, publishers and, of course, researchers - with the shared goal of a smooth transition to a sustainable open future. Publications, data, code and detailed protocols all have the potential to be made publicly accessible at point of publication and, indeed, much earlier in many cases. When done in a way that maintains the quality and integrity of all of these outputs, the rigor and reproducibility of research itself will be massively enhanced. One study estimated the costs of irreproducible research to the US at [\\$28 billion each year for biomedical research alone](#), so the long-term savings through increased efficiency would be a net benefit to the USA and the global research enterprise.

The barriers to change at the moment are primarily structural and cultural. Transitioning from current business models that support research publishing, largely based on library subscriptions, to alternatives that support open publication is no easy task. The current prevailing Gold OA model is based on APCs paid by researchers and generally sourced from research funds. Therefore to enable a full transition of federally-funded research publications to Gold OA the executive branch has 3 options: redistribute existing federal research funding, work with others to help transition money from subscriptions or ask for more money from congress. All these options (and combinations of them) are complex. Cultural change in the way that research is conducted to facilitate and normalize open science is the other key requirement. Aligning rewards and incentives, providing support and training and judicious policy changes coordinated among, and implemented by, funders, institutions and publishers represent the major opportunities for sustainable and impactful change in this area.

What more can Federal agencies do to make tax-payer funded research results, including peer-reviewed author manuscripts, data, and code funded by the Federal Government, freely and publicly accessible in a way that minimizes delay, maximizes access, and enhances usability?

Provide funding for Gold Open Access

Ultimately, what is critical to maximize the value of federally-funded research papers for students, clinicians, businesses, researchers and the general public is access to the Version of Record (VoR). All research bodies need to fund Gold OA so that immediate access can be had to robust, replicable, peer-reviewed research at the point of publication. Gold OA opens the door to open science with all its efficiency and accelerated research benefits ([our research](#) shows Gold OA articles are downloaded four times more often than non-Gold OA articles and receive 60% more citations). It does this through providing a definitive, curated, research record under the custodianship of editors and publishers whose focus is the integrity of that communication and which can be effectively integrated with open code, open protocols, open data and any future open science innovation.

Funders and governments want Open Science to unleash a more efficient and faster research process. While Green OA may look like an easier path, it would discourage the full transition to open science, is reliant on subscriptions and, ultimately, **won't achieve this goal**. It gives access to a version of the research but it is not the efficient, verified, usable, citable finished product with all the additional benefits, information, data and value built in.

We would be pleased to participate in a funded Gold OA pilot, working with OSTP and funding agencies to select specific areas or programs to focus on. For example, OSTP might prioritize specific areas or funding programs in AI, oceans or energy research. Multiple publishers could then work with the relevant agencies and institutions to deliver funded Gold OA pilots in those areas and provide hugely valuable data on the impact of such an approach both in delivering value to students, clinicians, businesses, researchers and the general public, as well as the financial implications for the institutions, agencies and the federal government. The results from that pilot would be invaluable in developing a coordinated strategy for transitioning the full federal primary research corpus to Gold OA as rapidly as possible.

A zero embargo mandate fulfilled through preprints of the author submitted manuscript

The present pandemic has starkly illustrated both [the value of increased sharing through preprints](#) but also [the pitfalls](#) in blurring the lines between these and the peer-reviewed and curated VoR. Well before this pandemic was declared, we supported the proposal from the NAS for a preprint-based approach to provide comprehensive access at as early a stage as possible to each and every federally funded research paper. Such an approach we believe would facilitate a more manageable transition to full Gold OA for primary research, and would also promote and normalize early sharing of research results through preprints in a structured, controlled and integrated way. Ultimately this will supercharge the sharing of draft research results to the benefit of students, clinicians, businesses, researchers and the general public as a **complement** to the definitive curated VoR made available via Gold OA.

To be clear: We believe a federal preprint zero embargo mandate based on the author submitted version would provide the federal taxpayer access to primary research papers at a point before publishers have started to add value to the paper and incurred costs in doing so. We estimate more than **55% of our costs** are incurred prior to acceptance. We are committed to preprints as a positive contribution to Open Science and have established the innovative “In Review” preprint service on the Research Square platform, which has rapidly established itself as one of the leaders in this space. Moreover we (and other publishers) proactively acted to make preprints of COVID-19 related papers available as early as possible, and engaged with OSTP, NIH, WHO and others in supporting other linked-initiatives. **Now is the time for the OSTP to harness the same approach more generally.**

Of course, there are reasonable worries around a blanket preprint mandate like this in different areas of research, as their role during the pandemic [has brought in to stark relief](#). Moreover there are many details to be worked through for the implementation of a mandate. So it would make sense to work on pilots with a coalition of willing publishers and funding agencies. These pilots could build on the pandemic-linked initiatives and extend in to broader areas of research that are less immediately relevant but potentially of enormous longer-term impact (for example pre-clinical medical research). We would be pleased to be a part of such a pilot and technically we are already well-positioned to begin quickly once we agree some of the details with the relevant stakeholders, including OSTP and the relevant funding agencies.

A coordinated approach to allow research data to be curated and shared openly

Data is without a doubt where most progress needs to be made and where funding agencies and publishers have the ability to make the most impact working together. Changing researcher attitudes and behaviour is vital to this and as two of the key actors in the research ecosystem we think we can work together to make an impact relatively quickly. There are numerous areas we can work with OSTP and funding agencies: persistent digital identifiers, mandates and policies, data management planning and stewardship, training, accreditation and aligning incentives are some of the most important.

We have extensively studied the barriers to data sharing, including surveying over 19,000 researchers summarised in our [2018 Practical Challenges for Researchers in Data Sharing](#) and [2019 Five Essential Factors for Data Sharing](#) white papers reports and we have developed

practical assistance to help address those barriers. Aligning such practical support and training with strong policy and funding, such as that laid out in the draft NIH Policy for Data Management and Sharing, could be highly effective. Unfortunately doing nothing remains the easiest approach for researchers until credit mechanisms are sufficient, and they are supported by good infrastructure, practical help, funding and education. Overcoming such cultural and structural barriers are key to moving to openness of research outputs including code and research data.

We know that citation credits are key incentives for researchers. Policies that encourage the use of persistent identifiers for datasets by researchers and repositories would be helpful. We also recommend supporting inclusion of dataset citations in article references to raise research data to a first class research output, as set out by Force11 [Joint Declaration of Data Citation Principles](#). Springer Nature is working to implement these recommendations on our journals, and collaborating with OpenAire to improve dataset linking in our published articles. A recent study we supported by the Turing Institute [found openly available data was associated with a 25% increase in article citations](#), on average, strong evidence that published research with open data provides a better return on investment for funders. Working together, we need more evidence like this of the benefits to promote open research data benefits to researchers and the innovation economy.

How can the Federal Government engage with other sectors to achieve these goals?

We recommend setting up a working group between the publishers (led by an industry body like STM), funding agencies and institutions (led by bodies such as APLU and AAU) to look at all these issues and prioritize quick wins. There are numerous possible pilots that could be immediately very impactful perhaps focussing on specific programs or subject areas (eg cancer, geoscience etc). We have many ideas in these areas but the most important thing will be to put the right people from all sectors in a room together to work through the details of what can make the biggest impact as quickly as possible.

How would American science leadership and American competitiveness benefit from immediate access to these resources?

A coordinated and rapid roll-out of innovative initiatives in the research data space in collaboration with the publishing industry would undoubtedly position America as global leader in this area. America is well placed to take advantage of this opportunity to improve its competitiveness in a myriad of areas: AI, advanced manufacturing and biotechnology are just three. We would welcome the opportunity to work with federal agencies and other stakeholders to develop ways to do this as efficiently as possible without undermining IP rights.

Interoperable research data would greatly enhance the capability for AI-mining, but it is of limited use if the data is not also easy to find, access and reuse. We recommend the Federal

Government and its agencies foster support for education, funding in research grants, and access to curation and stewardship of data by experts to maximise the potential for innovation.

What are potential challenges and effective approaches for overcoming them?

As highlighted above the major challenges are structural and cultural. There is [enough money in the research system to fully fund Gold OA](#) but it is not in the right place at the moment and we need to work together to organize a controlled transition. All publishing (subscription + OA) represents less than [1% of research funding](#) world-wide. Open Science could significantly benefit the efficiency and output of the other 99% by reducing time spent in accessing research outputs needed for the next stage of discovery and innovation, and reducing waste from irreproducible research (see above). Robust financial modelling is required to understand the options for the US research ecosystem. We know that for research intensive US institutions [their current library budgets are likely to be inadequate](#) to cover the transition. However credible estimates of costs for making such a transition for the USA as a whole, or the subset of research that is federally-funded, are currently lacking. We recommend that the DPC, OMB and CEA should complete such modelling leveraging real-world data from a large collaborative pilot to fully understand the impact of such a transition before any mandate is considered.

We are committed to working with the OSTP to achieving 100% open access for the version of record of federally funded primary research papers. The data from the pilots advocated above would allow a robust assessment of the minimum time to achieve a smooth transition. Vitaly, to achieve this transition we need to involve the key stakeholders whose budgets currently underpin the scholarly communications ecosystem – institutions (Provosts not just librarians) – funding agencies and publishers. We need to work together towards a realistic non-disruptive transition that won't demand additional appropriations from congress or unpalatable cuts in expenditure on research itself to fund this.



May 5, 2020

BY ELECTRONIC SUBMISSION

Dr. Kelvin K. Droegemeier
Director, Office of Science and Technology Policy
Eisenhower Executive Office Building
1650 Pennsylvania Avenue, NW
Washington, DC 20504

Response to OSTP Request for Information – FR Doc. 2020-06622 – “Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research”

Dear Dr. Droegemeier,

The **American Association of Gynecological Laparoscopists (AAGL)** is grateful for the opportunity to respond to this request for information. In particular, we write to caution OSTP against adopting a policy mandating the free distribution of peer-reviewed manuscripts earlier than one year after publication.

The AAGL was founded in 1971 with over 7,000 members today. As the global leader in Minimally Invasive Gynecologic Surgery, our mission is to elevate the quality and safety of health care for women through excellence in clinical practice, education, research, innovation, and advocacy.

The AAGL is committed to:

- **Clinical Practice**—We enable our members to optimize patient care through the development of practice guidelines and skill acquisition.
- **Education**—We provide dynamic evidence-based learning by educating members throughout their career.
- **Research**—We support the ethical conduct and dissemination of scientific investigation to advance the field of women’s health and gynecologic surgery.
- **Innovation**—We advance the field of gynecologic care by encouraging new ideas, surgical innovation, and collaboration with our partners.
- **Advocacy**—We develop transformational leaders that collaborate and set standards for patient care in order to serve their local, national, and international communities.

Vision Statement

Our vision is to elevate the global standard for gynecologic care and to ensure that all women have access to minimally invasive surgical options.

Ultimately, we strive to support the progress of science by producing and broadly disseminating the highest quality peer-reviewed journals possible. Publishers and societies have worked to

strengthen scholarly communication and promote open science. However, it is critical that these efforts take place within a framework that respects intellectual property rights and our ability to invest in high-quality publications, and that does not hinder researchers from communicating their discoveries.

Our organization is currently deeply engaged in efforts to respond to the COVID-19 pandemic. We have presented more than seven (7) weekly COVID-19 related Webinars for our members. We are concerned that OSTP's significant new regulatory proposal is a distraction from our ongoing efforts to respond to the current crisis and would undermine our stability and undercut our ability to respond to future health crises.

As you are aware, federal agencies currently require that peer-reviewed manuscripts be made freely available online—within one year of publication—if they discuss research funded at least in part by a government grant.¹ This policy represents a significant compromise that balances our shared goals of providing broad access with the need for our organization to recoup the substantial investments we make in the peer-review, editing, publication, distribution, and long-term stewardship of these articles. This one-year compromise contrasts with the length of a full copyright term of life-of-the-author plus 70 years. Importantly, this compromise reflects Congress' guidance (in the authorizing legislation for the current policy) that the Administration must “take into consideration the role that scientific publishers play in the peer review process in ensuring the integrity of the record of scientific research, including the investments and added value that they make.”²

Reducing or eliminating the current one-year embargo would significantly jeopardize our organization's ability to invest in producing the high-quality peer-reviewed journals (JMIG) that our readers in the Minimally Invasive Gynecologic Surgery community rely on. In so doing, such a policy would contravene Congress' clear guidance to take our role and investments into consideration. Furthermore, such a policy would directly result in a reduction in either the quantity or quality (or more likely, both) of peer-reviewed journal articles produced by hundreds of organizations like ours.

This would not only be harmful to the research enterprise, it would also be harmful to our medical professional members, patients, scientists, engineers, and the general public who are the ultimate beneficiaries of the scholarly journals we produce.

We urge you not to disrupt our ability to support the advancement of research and patient care in the Minimally Invasive Gynecologic Surgery field, and we look forward to working together to identify solutions that advance the goals of open science without undermining the communication of research findings and analyses through peer-reviewed journals.

Thank you again for the opportunity to submit these comments.

¹These policies were developed pursuant to OSTP's requirement that agencies “shall use a twelve-month post-publication embargo period as a guideline for making research papers publicly available . . .” See OSTP Memorandum on “Increasing Access to the Results of Federally Funded Scientific Research” (Feb. 22, 2013).

² America COMPETES Reauthorization Act of 2010, Section 103(b)(9), *available at*: <https://www.congress.gov/111/plaws/publ358/PLAW-111publ358.pdf>.

Sincerely,

A handwritten signature in black ink, appearing to read "Linda Michels". The signature is fluid and cursive, with a prominent initial "L" and a long, sweeping underline.

Linda Michels
AAGL Executive Director

Thank you for the opportunity to provide insight and data into the RFI on advancing scientific research.

The Association of Behavioral and Cognitive Therapies, incorporated in 1966, publishes two scientific journals, *Behavior Therapy* and *Cognitive and Behavioral Practice*, in partnership with Elsevier. Those journals typically generate \$500,000 or more in revenues for the Association and more for Elsevier and its many partners. That revenue is an integral piece of ABCT's financial health, and the articles are essential reading for researchers and clinical practitioners in the mental health field.

- What current limitations exist to the effective communication of research outputs (publications, data, and code) and how might communications evolve to accelerate public access while advancing the quality of scientific research? What are the barriers to and opportunities for change?

Most research is publicly disseminated through peer-reviewed journals published by corporate entities and non-profit societies, often in partnership. These publishers and societies have spent decades refining the editorial and peer-review processes and the state-of-the-art electronic distribution platforms that, together, not only distribute the findings funded by government grants, but help ensure that the information distributed is scientifically accurate, relevant, methodologically sound, and important.

The current process is already effective, with extensive hotlinks to cited literature. Moreover, the peer-review process, honed by multi-decades old editorial systems is geared to present the most relevant and important findings, with reviewers examining the methodology and conclusions.

- What more can Federal agencies do to make taxpayer funded research results, including peer-reviewed author manuscripts, data, and code funded by the Federal Government, freely and publicly accessible in a way that minimizes delay, maximizes access, and enhances usability? How can the Federal Government engage with other sectors to achieve these goals?

All federally funded research results that are published are publicly accessible in a number of ways: the publishers and societies make all accepted material accessible to subscribers quickly; within a year of publication, health-related manuscripts are also sent to NIH for uploading into their database. In addition, many authors and/or their institutions will upload their manuscripts into personal or institutional web sites where they are freely accessible to all. In the initial upload, only peer-review and editorial management is required. In our journal, *Behavior Therapy*, for instance, the time to an initial decision to accept, revise, or reject is typically within 30 days (our average for over 300 manuscripts per year); once accepted the manuscript is loaded on the publisher's website in the form of uncorrected proofs, typically in 10 days or less; and is then edited to society's style within another 10 days (although the earlier, uncorrected version is accessible the moment it's loaded and assigned a DOI number).

There is little need to make things faster. Articles are posted nearly instantaneously now through multiple media, although not through the libraries.

In terms of usability, publishers typically add considerable benefit to the articles by creating hotlinks to articles the authors cite, providing editorial services that bring articles into conformity with acceptable styles and usages, and providing the peer-review process that assures accuracy, relevance, and importance.

- How would American science leadership and American competitiveness benefit from immediate access to these resources? What are potential challenges and effective approaches for overcoming them? Analyses that weigh the trade-offs of different approaches and models, especially those that provide data, will be particularly helpful.

American science leadership already has immediate access to these resources, assuming that they are tied into either institutional or personal subscriptions for the journals they value. And, as noted above, even those that choose not to participate in the traditional library system that funds the publishers who fund the peer-review process that ultimately makes the science available in consumable formats, have access to most papers, as most authors or their institutions post their published work on their own web sites. It's more cumbersome having to go to individual websites, but that's part of the service that publishers provide.

You are undoubtedly familiar with the study commissioned by the University of California, Davis, in which they examined the probable financial results of changing the existing library subscription model to an author-supplied open access funding model in which content would be immediately available.

The report noted that “for the most research-intensive North American research institutions,” (that is, the very ones whose authors contribute to literature and who feed most lavishly upon federal grants) “the total cost to publish in a fully article processing charge-funded journal market will exceed current library journal budgets.” That is, the total cash outlay required to sustain what publishers are already doing would cost more than what those publishers are now charging libraries. That same study suggested that “the cost difference could be covered by grant funds,” meaning that they recommend using either a larger percentage of the same federal grant funds for publishing, leaving less for scientific research, or requiring a larger outlay of an already shrinking pool in order to fund the same amount of science. Their final finding posited that funds might be found through discretionary funds, including “research grants, personal research accounts, endowed chair funds, and departmental funds,” but expected that the financial pressures “would, in some cases, require new funding from the institution.” That is, if the system is to continue, more funds would need to be found from somewhere. Or, put another way, the current system is financially more viable than open access models.

It is also possible to do away completely with the system that societies and publishers have worked so diligently to create and just allow authors to post their material to the web. That bypasses the peer-review process, the heart of a system to permit only the most influential and accurate work to reach the public and bypasses the distribution process that makes accessing the work and the references they cite seamless. Doing that not only makes the work more difficult to access but makes the work less trustworthy. Furthermore, it would wreck the industry, both private and non-profit, that produces and distributes the science. The 2018 edition of the “Copyright Report” indicates that that industry represents \$1.3 Trillion in GDP and employs 5.7 million workers with an average compensation of \$98,336, well above the national average. Finally, that product, according to the report, generates \$191 billion in foreign sales.

- Any additional information that might be considered for Federal policies related to public access to peer-reviewed author manuscripts, data, and code resulting from federally supported research.

This policy change transfers financial responsibility from libraries elsewhere, whether individuals who might then use the very grant money that supported the research to now publicize that research; or the institutions who

employ these researchers, thereby shifting costs from the institutions' libraries to their various departments. In both cases, this upends the very successful partnership among publishers, societies, research institutions, and researchers. Whether that very successful and utilitarian process survives is not guaranteed.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Martin M. Antony". The signature is written in a cursive, flowing style with some loops and a long tail on the final letter.

Martin M. Antony, PhD

President, Association for Behavioral and Cognitive Therapies



The NEW ENGLAND JOURNAL of MEDICINE

ERIC J. RUBIN, M.D., Ph.D.
EDITOR-IN-CHIEF

May 5, 2020

Dr. Kelvin Droegemeier
Director, Office of Science and Technology Policy
Eisenhower Executive Office Building
1650 Pennsylvania Avenue, NW
Washington, DC 20504

RE: NEJM Response to OSTP RFI Concerning “Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research,” FR Doc. 2020-06622

Dear Dr. Droegemeier:

The New England Journal of Medicine (NEJM) is the most widely read, cited, and influential general medical journal and website in the world and the oldest continuously published medical periodical.

Widely recognized as the gold standard for current research and best practices in medicine, NEJM publishes peer-reviewed research and interactive clinical content for physicians, educators, and the global medical community. The mission of NEJM is to bring health care professionals the most reliable biomedical research and clinical information to inform their practice and improve outcomes for patients.

NEJM is a publication of NEJM Group, a division of the Massachusetts Medical Society.

Thank you for the opportunity to respond.

ANSWERS TO QUESTIONS 1-4 OF REQUEST FOR INFORMATION

1) What current limitations exist to the effective communication of research outputs (publications, data, and code) and how might communications evolve to accelerate public access while advancing the quality of scientific research? What are the barriers to and opportunities for change?

Now more than ever, given the exponential growth in the volume of new forms of scientific communication, it is imperative for health care professionals to have access to the highest-quality and most trusted medical information.

This is why NEJM articles are carefully selected, extensively peer reviewed, and edited by medical experts and are often substantially revised and rewritten to ensure that conclusions are supported by data. Each manuscript we select benefits from hundreds of hours of work by expert medical authorities, statistical experts, manuscript

editors, world-renowned illustrators, proofreaders, and production staff, who strive to ensure that every paper meets exacting standards before it becomes a published NEJM article. This deliberate and highly labor-intensive process is essential for content that will directly impact patient care and treatment outcomes.

NEJM is a leader in public access. Since 2001, all original research published by NEJM, regardless of funding source, has been made freely available at NEJM.org six months after publication. We initiated this policy years before public access was required by any federal agency.

We also believe that matters of public health importance should be shared quickly and accurately. We immediately make free on publication all research articles of urgent interest to public health, a practice we have maintained for decades. Most recently, in response to the Covid-19 pandemic, we have created a dedicated page on our website with collected Covid-19 articles. All of these articles are freely available. We also allow this content to be aggregated for broad use within PubMed central and other public repositories, such as the WHO Covid-19 database.

We cannot, however, make all NEJM articles free on publication. An embargo period is the foundation of our subscription model. Without it, we could not do the things that make us the gold-standard medical journal. Our reader-pays subscription model allows us to continuously invest in subject-matter experts, professional publishing talent, and editorial and production systems to ensure that NEJM meets the needs of physicians and health care professionals.

Our strong editorial infrastructure has allowed us to handle a surge in Covid-19 submissions – currently more than 200 manuscripts a day – without sacrificing the quality of the more than 100 Covid-19 articles that have ultimately been accepted and published. Because of our painstaking process, the articles we publish are universally recognized as the most reliable source of information during a time when confusing and incomplete information is rampant.

Our embargo is essential to our business model. Without it, we would not be able to make high-quality research articles and expert commentary free in times of public health crisis. We also would not be able to compete globally as a leading medical publisher.

We believe that mandating a single approach to publishing — particularly one that favors high-volume, online publication of medical research with less rigorous review — will not result in better care for patients.

2) What more can Federal agencies do to make taxpayer funded research results, including peer-reviewed author manuscripts, data, and code funded by the Federal Government, freely and publicly accessible in a way that minimizes delay, maximizes access, and enhances usability? How can the Federal Government engage with other sectors to achieve these goals?

The Federal Government has led the world in supporting medical research that has enhanced the well-being and improved the lives of millions of people. We propose that Federal agencies take the following additional steps to minimize delay, maximize access, and enhance usability of taxpayer funded research:

- 1) Advance Principles for Scientific Data Management.

In 2016, stakeholders from academia, industry, funding agencies, and scholarly publishers designed and endorsed the FAIR Data Principles to serve as a guideline for those who wanted to enhance the

reusability of their data.¹ Also in that year, NEJM co-authored a proposal from the International Committee of Medical Journal Editors on sharing clinical trial data.²

We propose the National Institutes of Health work with stakeholders, including publishers, to create an indexing database, similar to MEDLINE, for data sets and objects. Such a database would improve discoverability, drive metadata standards, and facilitate data access.

2) Improve access to published trials on ClinicalTrials.gov

It has been reported that more than 12 years after the passage of the Food and Drug Administration Amendments Act (FDAAA) in 2007, one third of applicable clinical trial results are missing from ClinicalTrials.gov. The FDA and NIH are authorized to impose financial penalties for noncompliance but have not.³

Publishers can work with authors and funders to improve trial results reporting. NEJM has already taken the lead to improve clinical trial data sharing for the articles we publish and is working with other journals through the International Committee of Medical Journal Editors. This work, both past and future, requires time and resources.

NEJM has been a leader in advancing clinical trial data sharing in a way that accounts for the current data management challenges that researchers face. We offer to use this expertise to work with others on a government-sponsored project that allows greater access to data to benefit the greater research ecosystem.

3) How would American science leadership and American competitiveness benefit from immediate access to these resources? What are potential challenges and effective approaches for overcoming them? Analyses that weigh the trade-offs of different approaches and models, especially those that provide data, will be particularly helpful.

We agree that access to information is essential, and we have taken steps for nearly 20 years to facilitate it. Along with immediately making articles with public health impact free and making research material available with free registration six months after publication, NEJM also makes unrestricted immediate online access free to low-income countries through the Research4Life's HINARI program.

A challenge that comes with immediate access is ensuring a correct understanding of study results. We propose that publishers work to establish a harmonized, plain-language summary of research results – clinical trials, in particular – to ensure accurate understanding by generalist readers. Such a summary would also facilitate

¹ Wilkinson, M. D. et al. (2016). The FAIR Guiding Principles for scientific data management and stewardship. *Scientific Data*, 3, 160018, available at <https://www.nature.com/articles/sdata201618>.

² Taichman DB, Backus J, Baethge C, et al. Sharing clinical trial data — a proposal from the International Committee of Medical Journal Editors. *N Engl J Med* 2016;374:384-38, available at <https://www.nejm.org/doi/full/10.1056/NEJMe1515172>.

³ Morten, C., Lurie, P.G., & Seife, C., (2020, April 13) Lost Opportunities from FDA, NIH inaction when sponsors fail to report clinical trial results. *STAT*, available at <https://www.statnews.com/2020/04/13/lost-opportunities-clinical-trial-results-unreported-lost-opportunities/>.

reporting by the media. This initiative, however, will require investment that is only possible through diverse publishing models.

We acknowledge that there are various business models for publishing research. However, we remain committed to our current subscription-based publishing model. When a publication is paid for by its readers, the editors work to ensure that conclusions are not overstated or misleading, that results are put into the proper context for treating patients, and that a dispassionate peer-review process has informed editorial selection.

For these reasons, we believe that a reader-pays subscription model with an appropriate embargo period can exist alongside a deep commitment to public access.

4) Any additional information that might be considered for Federal policies related to public access to peer-reviewed author manuscripts, data, and code resulting from federally supported research.

There are two places where we think access to study information could be improved: access to data sharing plans and to clinical trial protocols.

- **Data sharing.** There is an obligation to patients who volunteer to participate in clinical trials to ensure that their data are widely and responsibly used. As a condition to publication, NEJM and other medical journals require investigators to submit a data-sharing statement and register a data-sharing plan when registering a trial.

Quality data stewardship, guided by policy standards and best practices, would facilitate data sharing, both for federally funded research and during disease outbreaks such as Covid-19.

- **Clinical trial protocols.** Clinical trial protocols describe the objectives, design, methodology, statistical considerations, and other aspects of the organization of clinical trials. These documents provide the background and rationale for conducting a study. In 2011, NEJM began to publish study protocols with all randomized, controlled trials. We are one of the few general medical journals that publish protocols with all randomized trials; we do this so that all readers have access to the same information the editors have.

We believe the routine reporting of clinical trial protocols would be a significant improvement. The inconsistent posting of trial protocols, as well as the posting of multiple versions of trial protocols with a study's many publications, interferes with transparent reporting. It would be ideal to require posting of trial protocols on ClinicalTrials.gov when the trial is first registered.

Respectfully submitted,



Eric J. Rubin, M.D., Ph.D.
Editor-in-Chief
The New England Journal of Medicine

The Pennsylvania State University Response to Request for Information: Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research

May 5, 2020

The Pennsylvania State University (Penn State) thanks the Office of Science & Technology Policy (OSTP) for requesting stakeholder responses on this topic – which is now more timely and relevant than ever. Penn State is a top-25 U.S. research university with \$968 million in annual research expenditures and \$593 million in federal research funding. As an extremely active research university with Land Grant, Sea Grant, Sun Grant, and Space Grant status, Penn State shares OSTP's commitment to expanding public access to and benefit from federally funded research. We are grateful for the opportunity to submit our responses to the questions in Document 85 FR 9488, *Request for Information (RFI): Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting from Federally Funded Research*.

Investments in research drive innovation and our understanding of science; lack of access to research outputs hampers the speed of scientific advancement and reduces the value of critical investments.

Governmental investments in scientific research can create positive American economic impact orders of magnitude greater than the original investment. In order to maximize the benefits of the funding and investment of the United States government, funders should require full and immediate open access to all research outputs resulting from federally funded research work, including peer-reviewed author manuscripts, data, code, protocols, and research workflows. Peer-reviewed author manuscripts resulting from federally funded research should be distributed via funder repositories in open and machine-readable formats that support text and data mining and computational analysis, with licenses that allow for appropriate reuse. Supporting materials needed to replicate results, such as data, should always be immediately and openly available upon research publication. Other data should be available under FAIR (Findable, Accessible, Interoperable, Reusable) principles. While we encourage and applaud public access to research data, we also recognize the importance of certain research that can only be conducted with confidential data, such as patient records, that should not be made public. These research outputs should be preserved for the long term in an appropriate repository: for peer-reviewed author manuscripts, in a digital repository maintained by the funding agency, and for other research outputs, in an appropriate institutional or disciplinary repository.

Additionally, while it is important to make data and peer-reviewed author manuscripts publicly accessible immediately upon publication, this alone is not enough to replicate and validate the quality of research. Just as the data is essential, so too is any code used to clean or manipulate

the data, as well as the research steps and processes. We recommend that OSTP require public access to code, protocols and workflows as outputs of research.

On March 14, 2020, Penn State, like many institutions of higher education, moved to remote research and teaching methods. During this unprecedented period, many publishers and database vendors have temporarily opened up their digital platforms for wider, open access. Moves by publishers to open all COVID-19 related research demonstrate that immediate barrier-free availability of research outputs hastens scientific work. The scientific collaboration and speed that has resulted from the mass adoption and use of pre-print repositories to share research prior to peer review is astonishing, and we strongly support supplemental policies to encourage the use of pre-print repositories to increase the reach and speed of research. However, they are no substitute for immediate public access to peer-reviewed author manuscripts and the other fruits of funded research.

The pandemic both brings the benefits of open science into sharp relief and poses a heavier burden on research institutions than ever before. Robust science requires robust and frictionless access to peer-reviewed research, and without action towards embargo-free immediate access to research publications, research outputs and the value of American investments in research will suffer. Even before the pandemic, even the most well-resourced universities could not afford to subscribe to every journal and database needed by their researchers. Publishers charge more every year for access to the same content, far outstripping the rate of inflation and the Consumer Price Index (CPI). Universities cannot afford to continually increase subscription budgets. The end result is a reduction of scientists' access to peer-reviewed research, which further slows the benefits of scientific endeavor. This will pose heavy burdens on researchers as they search and on libraries and librarians as they work to provide access to materials they cannot afford. Immediate public access to all components required for research replicability allows research institutions to continue critical research and teaching in the face of substantial budget cuts and reduced access to paywalled journal articles.

Public access to peer-reviewed author manuscripts and other research outputs should remain in already familiar funder-operated, institutional, and disciplinary repositories. Federal agency public access repositories, such as PubMed Central, do an excellent job of providing public access to peer-reviewed author manuscripts. For other research outputs, research institutions already operate institutional repositories with mechanisms designed to make sharing data and code as easy as possible for researchers. Continuing to use and build upon existing infrastructure maintained by federal agencies, research institutions and their libraries, disciplinary repositories, and others that provide free tools that enable researchers to widely share their work is the most cost-effective way to obtain immediate public access to research outputs.

For the public interest in maintaining access to science, important for both non-commercial research and businesses alike, immediate open access without an embargo period should be the default for all federally funded research. This is an opportunity for the United States to truly

lead the vision for the future of scholarly publications and access to research, as well as to take full advantage of its investments in research. Thank you for your time and consideration of this topic.

Respectfully,

Brandy Karl and Cynthia Vitale

on behalf of The Pennsylvania State University

From: Benjamin Haibe-Kains <benjamin.haibe.kains@utoronto.ca>
Sent: Tuesday, May 5, 2020 4:34 PM
To: MBX OSTP Public Access <MBX.OSTP.PublicAccess@ostp.eop.gov>
Subject: [EXTERNAL] RFI Response: Public Access

I strongly support your efforts to make knowledge, information, and data generated by federally-funded research immediately, universally, and freely accessible upon publication. You should require that upon publication of work funded in part by federal sources, the publication itself, associated data, and associated software code must be deposited in a public repository and available immediately, with no embargo period or payment.

Benjamin Haibe-Kains, PhD
Senior Scientist
[Princess Margaret Cancer Centre](#)
[University Health Network](#)
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[University of Toronto](#)
[Department of Medical Biophysics](#)

[>http://www.pmgenomics.ca/bhklab/](http://www.pmgenomics.ca/bhklab/)<

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May 5, 2020

Dr. Kelvin K. Droegemeier
Director
White House Office of Science and Technology Policy
Eisenhower Executive Office Building
1650 Pennsylvania Avenue, NW
Washington, DC 20504
publicaccess@ostp.eop.gov

Re: RFI Response: Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting from Federally Funded Research

Dear Dr. Droegemeier:

Thank you for soliciting stakeholder response to the important issue of Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting from Federally Funded Research. As a former University Vice-Chancellor for Research, and one who worked with those who worked in WHOSTP, I am intimately familiar with the importance of science policy.

By way of introduction, I am the Merel H. Harmel Professor of Anesthesiology and Vice-Chair for Innovation, and the Director of Research Entrepreneurship, Duke University School of Medicine. I am also the Editor-in-Chief of Anesthesiology, the top ranked anesthesia journal in the world. I am a basic, translational, and clinical pharmacologist, and a practicing physician, have been Federally Funded for decades, and published nearly 300 peer reviewed articles. I am one of approximately 14 elected anesthesiologists in the National Academy of Medicine, on of this country's most prestigious scientific institutions.

For centuries, and certainly since the modern era of Federally funded research sparked by Vannever Bush after WWII, the American research enterprise has generated and disseminated knowledge that has immensely improved health, way of life, standards of living, the US economy, and is the envy of other nations. Scholarly publications are the mechanism by which research results are made available to the public, and more specifically the scholarly peer-review process is the mechanism by which results are evaluated, vetted, and manuscripts revised to ensure that the results and conclusions which are disseminated are valid and trustworthy.

The peer review process is expensive. It is estimated that the cost of maintaining that process, and the publication of scholarly articles, is \$3000-5000 per article. Publication is not free, and there is no such thing as free publication. One mechanism by which journals create resource to cover the cost of peer review and article publication is through subscriptions and advertising. Thus, investigators, universities and research institutes do not have to cover these costs, allowing their resource to go directly to research expense and new discovery. Often, not only does this revenue pay for publication costs, but it also allows for reinvestment in the scientific enterprise, such as the creation of new journals for communicating scientific results. Journals published by scholarly societies may also use journal proceeds to reinvest to support costs for future research, such as seed funds for early career investigators who may not yet be competitive for federal funding.

It is critical to note that any actions which may substantially alter the scholarly publishing model will have known serious adverse consequences and costs, and will likely also have unintended consequences. One major consequence is that investigators, and more specifically their federal grants, will now have to cover publication costs. This can easily be \$25,000-100,000 per investigator per year, or hundreds of millions of dollars annually. This means that federal grants will have to now cover this new publication expense, either at increased new cost to the government, or by reallocation of grant funds to publication and away from research itself. Another major consequence is that we will deprive scientific societies of one of their major reasons for existence— the promotion and advancement of science and medical knowledge. A third major consequence may be the economic damage to the US scholarly publishing industry, the potential loss of hundreds or thousands of jobs, and damage to the US economy – particularly at a time when it has precipitously shrunk and must rebuild. It would appear unwise to unravel one of the currently healthy segments of our economy.

The RFI seeks information on research outputs, characterized as publications, data, and code. I believe it important to distinguish between publications, which are the true research outputs, and data and code, which are raw data much akin to “methods and sources” in other spheres. Raw data may contain proprietary or protected information, which should not or cannot be made public. Equally important is that the data and code that result from research are often used to generate several publications. Making data and code publically available can compromise or quash future research publications or future research efforts by the researchers who generate the data. Most clinical trials result in several publications. If data and code are required to be made immediately available, they are subject to theft by the many data trolls which lurk in foreign countries and the US.

The RFI seeks information on

- *What current limitations exist to the effective communication of research outputs and how might communications evolve to accelerate public access while advancing the quality of scientific research? What are the barriers to and opportunities for change?*
- *What more can Federal agencies do to make tax-payer funded research results, including peer-reviewed author manuscripts, data, and code funded by the Federal Government, freely and publicly accessible in a way that minimizes delay, maximizes access, and enhances usability?*

- *How would American science leadership and American competitiveness benefit from immediate access to these resources? What are potential challenges and effective approaches for overcoming them?*

With all due respect, it may be meritorious to re-evaluate the very premise that the system is in need of radical reform. The coronavirus and COVID-19 crisis is an example. As of today, PubMed lists 9215 articles, and 200-300 are being added daily, and the vast majority are being published within days to a few weeks after submission, and are being made immediately and freely available. This is indeed being made accessible in ways that minimize delay, maximize access, and enhance usability.

In addition, while minimizing delay, maximizing access, and enhancing usability are all goals shared by me, most scientists, and the journal which I edit, the WHOSTP proposal threatens the very mechanism by which this occurs. That is, peer review. Any federal statutes which compromise the resources needed to support peer review would be counter to achieving effective, trustworthy communication. The peer review process helps maximize the veracity of data and conclusions. Absent peer review, information may be correct, or incorrect, unvalidated, misleading, or even disinformation. Unvetted information can create false expectations, and is subject to potential misinterpretation or misuse, and media, political or social media hype. This may actually, inadvertently, or unwillingly be obstructing the progress of knowledge in this current crisis, and in the future. An unsuspecting public cannot differentiate between peer-reviewed, published, trusted evidence, and that which is not.

Take for example the coronavirus pandemic. The volume of articles is unprecedented, as above. The World Health Organization has described a “massive ‘infodemic’ - an over-abundance of information – some accurate and some not – that makes it hard to find trustworthy sources and reliable guidance“ (www.who.int/docs/default-source/coronaviruse/situation-reports/20200202-sitrep-13-ncov-v3.pdf). This is presently sowing uncertainty, and can threaten the public trust in the scientific enterprise - the very thing about which WHOSTP expresses concern (www.nytimes.com/2020/04/14/science/coronavirus-disinformation.html; www.nytimes.com/2020/04/21/magazine/coronavirus-scientific-journals-research.html).

American science leadership and American competitiveness would, in contrast to greater restriction on scholarly publishing and information dissemination, instead benefit from less administrative burden. It has been estimated that the average academic spends 42% of their research effort on administrative issues. This is a waste of precious time and talent. For example, the Research Plan of an NIH grant application is 12 pages long. The Instructions to prepare the grant (General Instructions for NIH and Other PHS Agencies, SF424) are 310 pages long!! The human research protections process which governs clinical research has grown bloated, inefficient, costly to the taxpayers, an impediment to progress, and one which protects institutions not the research participants. It is badly in need of major reform. Removing research barriers such as these will enable more research, speed the communication of tax-payer funded research results, and minimize delays in progress.

In closing, WHOSTP is in a position to advance taxpayer funded research. Dismantling the highly successful scholarly publishing model and the peer review system is not the optimal or advantageous mechanism for doing so. Thank you or your consideration.

Very truly yours,

/evan kharasch/

Evan D. Kharasch, MD PhD



ACADEMIC
PEDIATRIC
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AMERICAN
PEDIATRIC
SOCIETY

ASSOCIATION OF MEDICAL
SCHOOL PEDIATRIC
DEPARTMENT CHAIRS

SOCIETY FOR
PEDIATRIC
RESEARCH

February 7, 2020

Dr. Kelvin Droegemeier
Office of Science and Technology Policy
Executive Office of the President
Eisenhower Executive Office Building
1650 Pennsylvania Avenue, NW
Washington, DC 20504

Dear Dr. Droegemeier:

On behalf of the Pediatric Policy Council (PPC), a public policy collaborative of four pediatric academic organizations, we write to express serious concern with a proposed policy requiring immediate open access to any article reporting on federally funded research. Our organizations collectively represent thousands of pediatric researchers investigating a broad range of child health conditions and unlocking cures that improve the lives of children across the country. This proposed action threatens our ability to advance child health scholarship and innovation.

Pediatric research is a critical investment in the health of all Americans. Great strides have been made to improve child health and well-being, reduce childhood injury and death, and treat conditions that were previously incurable or fatal. Furthermore, pediatric research plays an important role in improving treatment, better preventing illness, and increasing health throughout adulthood by answering crucial questions about the childhood antecedents of the costly diseases of adulthood. Underpinning the ability of child health researchers to conduct this work is an intricate scholarly ecosystem that enhances the quality of scientific outcomes and facilitates the dissemination of lifesaving research. Academic journals are a core element of this enterprise.

The Administration's proposal to require immediate free distribution of journal articles financed and published by academic medical societies, including our own, would be devastating to the ability of these journals to continue their mission of producing quality scholarship. Academic medical societies perform a vital role in advancing the state of the art in a medical discipline. By acting as a convener, academic medical societies provide a forum for discourse that harnesses the collective knowledge of the field and creates space for iterative ideation that ultimately moves practice forward. Academic journals run by these organizations are a significant part of such efforts. Distributed regularly to the full membership of an organization, scholarly journals provide an important channel through which to distribute new scholarly thought and discovery to the audience best positioned to act on it. Furthermore, such journals finance and manage rigorous peer review processes that improve the quality of the science.

Peer-reviewed journal articles are licensed to users around the world, allowing medical societies and other publishers to recoup the significant costs of conducting the rigorous process of bringing articles to publication. The journals already implement and continue to strongly support the current policy, by which articles based on federally funded work are made open access after a year. Allowing immediate open access to all journal articles that use federally funded research will effectively require academic medical societies to give away scholarly works for free, preventing them from raising the necessary funds to continue to conduct this process.

Given the crucial role these journals play in scientific advancement, this policy represents a major threat to continued progress by reducing a needed revenue stream for these journals.

Scholarly journals play a critical role in advancing the state of the art in pediatrics and ultimately in improving care for children around the world. Policies that undermine the ability of journals to maintain their critical role in the scholarly process threaten our progress towards better health for all children. We urge you to reconsider this proposed policy, and we look forward to engaging in further discussions on ways to advance pediatric research.

Sincerely,



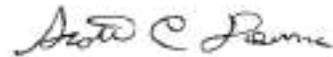
Paul Chung, MD, MS
President, Academic Pediatric Association



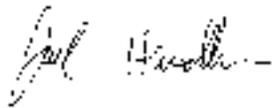
Robin Steinhorn, MD
President, American Pediatric Society



Sherin Devaskar, MD
President, Association of Medical School Pediatric
Department Chairs



Scott Denne, MD
Chair, Pediatric Policy Council



Joel Hirschhorn, MD, PhD
President, Society for Pediatric Research

Aligning Science Across Parkinson's (ASAP) Response to Federal Register Request for Information 85 FR 9488:Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting from Federally Funded Research.

Submitted on behalf of Aligning Science Across Parkinson's by Ekemini Riley, Managing Director of ASAP, Kristen Ratan, Founder of Stratos, and Sarah Greene, Founder of Rapid Science.

May 5, 2020

We are writing today on behalf of Aligning Science Across Parkinson's, a new funder that is fostering collaboration and resources to better understand the underlying causes of Parkinson's disease. With scale, transparency, open access publishing, and open data sharing, the initiative aims to accelerate the pace of discovery, and inform the path to a cure.

We thank the Office of Science and Technology Policy for your efforts to promote the importance of ensuring broad public access to the results of federally funded research.

A New Research Framework: Incentivizing, Facilitating, and Evaluating Collaborative and Open Science

Achieving Convergence

Collaboration and open science have been hailed as necessary steps to produce innovative outcomes more quickly and with greater impact, through convergence of expertise among interdisciplinary research teams. Recent moves toward preprint posting and open access of published articles offer incremental progress, but these vehicles of broadened readership do not solve the overarching problems in scholarly research. Beginning with a reward system largely based on publication metrics, an open approach to research is stymied by hyper competitiveness and fear of being scooped, which in turn lead to delays in publishing, duplication of efforts, slow and often biased peer review, and the scourge of non-reproducibility.

Here we propose actionable steps to incentivize and facilitate open and collaborative science. The model presented involves new processes and tools that we believe are

feasible for the next generation of researchers and will catalyze scientific advancements yet to be imagined.

The New Open Science: A Case Study of a Programmatic Approach

An example of a structured and regulated approach to addressing the current crisis is the [Aligning Science Across Parkinson's \(ASAP\)](#), an initiative that is funding a network of global research teams beginning in Fall 2020 and intended to extend through 2029. The goal is to bring about rapid, innovative advances in basic science by establishing a highly collaborative, interdisciplinary network that shares work early and openly, initially within the network itself and then publicly. The effort is being led by Scientific Director Randy Schekman and Managing Director Ekemini Riley, with support from the Michael J. Fox Foundation. ASAP is launching later this year with support and consultation from two nonprofit organizations, Rapid Science and Stratos, the founders of which have authored this paper.

The three pillars of policy, practice, and infrastructure are being addressed to achieve ASAP's goals, as follows.

POLICY

As a member of the funder group cOAlition S, ASAP's policy is informed by the open science directives of Plan S. This includes, starting January 2021, the following:

- All research articles must be posted as preprints prior to submission to journals and peer review.
- Publications resulting from ASAP funding must be open access and immediately posted in PubMed Central and European PubMed Central.
- Articles must be published under the Creative Commons Attribution license (CC-BY 4.0) or equivalent, which permits reuse of the material without restriction.

Because of the startup nature of the ASAP initiative, the policy diverges from Plan S in 2021, in that (1) publishing in hybrid journals will be allowed, with ASAP covering APC charges, as long as above restrictions are applied; and (2) the journal is permitted to retain copyright ownership. However, beginning in 2022, publication will be permitted only in fully open access journals, and authors or their institutions must retain copyright ownership.

Research teams are required to post a preprint at or before the time that a journal article is submitted for publication. They are also required to share research outputs such as datasets, code, protocols, and resources at or before the time of the mandatory preprint submission. These items must be housed in an appropriate open repository with a persistent identifier and link attached to each output.

These policies informed the grant application process in an unprecedented manner. For instance, requirements were included for teams of 3-5 investigators that reflect “collaboration readiness” derived from the literature of the Science of Team Science discipline (e.g., at least two distinct institutions, an early-stage researcher, two former collaborators). In addition, applicants were judged partially on their previous collaborative work and open access publications, and were asked to write brief paragraphs recommending collaborative and open science practices, based on their past experiences.

PRACTICE

ASAP is in the planning stage of determining practices and workflows that will incentivize, facilitate, reward, and evaluate collaborative and open science. Workshops were held in 2019 with multiple stakeholder participants, including researchers, funders, policymakers, and open science technologists. Insights and recommendations that resulted from these strategic sessions are under review by ASAP, with a focus currently on supporting roles that are critical to the upcoming onboarding process:

- For each team, ASAP is funding and requiring a full-time Project Manager who will be embedded within each team of approximately five researchers. The PM will track and assist research progress and reporting, organize and moderate meetings, train and support online interactions, and ensure that goals for sharing research outputs are met.
- The role and specific tasks of Collaboration Facilitator are under review. This is envisioned as a PhD-level subject specialist hired to connect network members when research interests align, track and communicate the latest published evidence, foster trust and a shared vision among teams, manage co-authorships and other credit attributions, and assist in incentivizing and rewarding collaborative and open behaviors. While the PMs will focus on intra-team interaction and progress, the Facilitator’s objective is to stimulate inter-team (and multidisciplinary) connections.

INFRASTRUCTURE

ASAP is building a web portal, the ASAP Hub, that will house the tools and resources that grantees will need to perform their work and fulfill policy requirements. The goals of the ASAP Hub are to:

- provide grantees information about ASAP's funding program,
- promote collaboration within and across research teams,
- manage and track the full range of research outputs,
- and eventually, as research progresses, track the interactions of researchers in order to reward increasing collaboration and open science.

Rather than build new features aimed at communication, a secure enterprise version of the Google suite of tools will be licensed for this purpose. Other third party resources will be licensed or connected by APIs, such as data and protocol repositories, and analytics tools.

To comply with policy requirements for early and open sharing, the ASAP Hub will include a custom-built, open source Research Output Management Plan (ROMP), which is an extension of the Data Management Plan (DMP) that many funders now require that includes all outputs such as code, protocols, and resources along with research datasets. By dynamically tracking the full set of research outputs, the ROMP is a living, machine-readable representation of the work that begins at the research planning stage and carries through the research lifecycle. Teams will be required to update their ROMPs quarterly, though over time, automation will be introduced to lower manual labor. Members and teams will be able to control permissions within their ROMPs, determining which components are private, when they can be shared with parts or all of the network (or individual collaborators). When outputs are made public, the ROMP will store persistent identifiers, links, and usage metrics. Project managers will keep ROMPs up to date and, at the time of preprint and articles submission, ensure compliance with ASAP's open policies.

At the point of preprint submission, researchers will use the ROMP and associated tool chain to produce the structured, machine-readable output availability statement that will become part of the preprint metadata, making preprints a highly useful early publication for validating and even reproducing the work. The ROMP tool chain will log when and where preprints and journal articles are submitted, accepted, and ultimately published.

Envisioning the Future: Turning Ideas into Reality

The ASAP approach (or elements/variations therein) can provide a blueprint for other funders and stakeholders such as academic institutions, government entities, and more. Stratos and Rapid Science are bringing together individuals who are interested in discussions of, and participation in, the forging of the three pillars of policy, practice, and infrastructure.

We are grateful to OSTP for your extensive efforts to convene stakeholders in the consultation process while considering a policy, and stand ready to collaborate however we can.

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Managing Director

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American Water Works
Association

Dedicated to the World's Most Important Resource™

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Denver, CO 80235-3098
T 303.794.7711
www.awwa.org

May 5, 2020

Lisa Nichols
Assistant Director for Academic Engagement
Office of Science and Technology Policy
Eisenhower Executive Office Building
1650 Pennsylvania Avenue
Washington, DC 20504

Electronic Transmittal: via publicaccess@ostp.eop.gov

Subject: RFI Response: Public Access

Dear Ms. Nichols:

The American Water Works Association (AWWA) appreciates the opportunity provided by this request for information (RFI) to caution the Office of Science and Technology Policy (OSTP) against changing current policy to mandate the free distribution of peer-reviewed manuscripts earlier than one year after publication in a journal.

OSTP's proposed change is at odds with its stated goal of improving the effective communication of research outputs and advancing the quality of scientific research supported by the federal government. While intended to increase access to research that was funded by the US government, such a policy change is based on a series of incorrect assumptions:

1. That the peer-reviewed article *is* the research output
2. That U.S.-based publishers can withstand such a change and remain viable
3. That U.S. publishers aren't already supporting open access to federally funded research

If implemented, such a policy change would place undue financial pressure on publishers, and in particular, small society publishers like AWWA. As a 501c(3) technical and educational nonprofit organization founded in 1881, AWWA provides an essential service to the scientific and technical water community in the United States and abroad. AWWA, and other societies like it, are where innovation is integrated into

business practice in the United States and ultimately internationally. If OSTP's goal is to foster greater impact from federally funded research, then it should identify ways it can support societies like AWWA.

The following are AWWA's observations with respect to the four specific questions posed in the RFI.

What current limitations exist to the effective communication of research outputs ... ?

Rapid dissemination of research is occurring today without a change in federal policy that interferes with existing peer-review and knowledge-sharing models.

“Public access” and “open access” are very different models and have associated copyright implications. Public access requires government-funded investigators to submit an electronic version of their final peer-reviewed manuscripts to PubMed Central “no later than 12 months after the official date of publication,” but still allows the publisher to maintain copyright ownership of the final version of record.¹ Comparatively, open access is facilitated through a licensing agreement, such as one via Creative Commons, whereby the author maintains copyright but licenses the content to be published or read (with specific limitations, depending on the license), and includes that the final version of record be made freely available immediately upon publication.²

Before publication in a journal, authors have several options for self-publication of their original article. The advent and proliferation of preprint servers, for example, has resulted in there being very little barrier to authors communicating their own research outputs. The danger is that the preprint becomes the article of record without any formal peer review, so preprints inherently need to be used with caution.³

The peer-review and editing processes add value to research outputs and help ensure rigor, accuracy, and readability.^{4,5} The barrier for publishers to convert to fully open access publishing is financial. The costs inherent in publishing are numerous and include peer-review systems, editing, digital platforms, printing, indexing, and mailing—all of which publishers pay for in the pursuit of disseminating high-quality, discoverable content. Costs associated with publishing are recouped by charging fees to read the

¹ NIH. [Frequently asked questions about the NIH public access policy.](#)

² [Creative Commons. About the licenses.](#)

³ [Preprints under peer review.](#) *Nat Commun.* 2017; 8:553.

⁴ Kelly J, Sadeghieh T, Adeli K. Peer review in scientific publications: benefits, critiques, & a survival guide. *EJIFCC.* 2014; 25(3):227-243.

⁵ Anderson K. [Focusing on value – 102 things journal publishers do \(2018 update\).](#) *The Scholarly Kitchen.* Feb. 6, 2018.

finished content via subscriptions or pay-per-view access, or, more recently, by charging article processing charges (APCs) in lieu of access charges—pay to publish versus pay to read. Mandating immediate and free access to papers that result from government-funded research puts nonprofit, technical associations like AWWA at a financial disadvantage because the time to recoup publishing costs during the embargo period is eliminated. Publishers should be able to select the business model that works best to support the audience and authors, whether it's fully gold open access, a hybrid approach, or something else.

The opportunity to change is inherent in the current environment. For example, numerous publishers and institutions in the United States and around the world have penned transformative agreements to transition scholarly journals to become fully open access.⁶ These agreements transition the publication costs to institutions, which pay for read and publish rights. By and large, scholarly publishers—AWWA included—are interested in disseminating content as broadly as possible; the barrier is in how to pay for the publishing process.

What more can Federal agencies do to make tax-payer funded research results, ... freely and publicly accessible ...?

Include publication fees in federal research grants.

While the research may be taxpayer-funded, the publication process and dissemination of those results via peer-reviewed journals are not. One way to support open access publication—thereby making peer-reviewed articles that result from government-funded research freely and publicly accessible immediately upon publication—would be to include publication fees in federal research grants, thereby earmarking money for APCs and supporting publication costs. Requiring open access publication but not providing financial support for it would effectively force publishers into a “pay to play” market, where journals transition to being fully gold open access but charge all accepted authors to pay APCs. In the case of AWWA, this will more than likely result in decreased submissions (and therefore decreased revenue), and the revenue from current subscriptions would be eliminated because libraries wouldn't pay for content that is free to read online. This change would hamper AWWA's ability to disseminate the most current and important research in the water sector. The 12-month embargo that is currently in effect for green open access publication of government-funded research is an important buffer for publishers like AWWA to be able to recoup the money spent on publishing processes.

⁶ ESAC. [Agreement registry](#).

How would American science leadership and American competitiveness benefit from immediate access to these resources? ...

Technical societies like AWWA are vital to disseminating high-quality research.

More important than immediate access to research resources is prompt access to fully vetted, credible resources. The peer-review and editing processes employed by societies like AWWA contribute to the scientific output of the United States. The peer-review process is prized within the federal government when it seeks out information to support important decisions.⁷ For OSTP to impose policies directly at odds with OMB guidelines for federal decision-making not only impedes innovation in commerce, it interferes with the Administration's own efforts to assure that federal decisions are based on sound information.

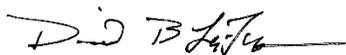
Any additional information that might be considered for Federal policies related to public access to peer-reviewed ... federally supported research.

Federal policy change is not necessary to promote innovation in publishing.

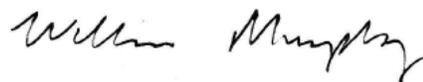
AWWA does not oppose open research initiatives. In fact, AWWA is working to enable open access publication and promote open data. That being said, government mandates forcing a business model change would put a significant strain on our organization, potentially resulting in our publication—and many others—ceasing to exist. This will only hurt U.S. business and scientific output in the long run.

If you have any questions regarding this correspondence or if AWWA can be of assistance in some other way, please contact us or Kimberly Retzlaff, Sr. Manager – Editorial, at (303) 347-6265 or kretzlaff@awwa.org.

Sincerely,



David B. LaFrance
Chief Executive Officer



William Murphy
Director – Publications

cc: Kelvin K. Droegemeier, Director OSTP

⁷ OMB, [Final Information Quality Bulletin for Peer Review](#), 70 FR 2664

Who is AWWA

American Water Works Association (AWWA) is a scientific and educational society dedicated to furthering water knowledge, professional collaboration, and informed public policy. AWWA's 50,000-plus total membership represents the full spectrum of the water community: public water and wastewater systems, environmental advocates, scientists, academicians, and others who hold a genuine interest in water, our most important resource. AWWA's publishing program includes ANSI-Accredited Standards that set the minimum requirements for clean and safe water, Manuals of Best Practice, three award-winning periodicals, and technical/educational handbooks.



May 6, 2020

Comments of the Wikimedia Foundation

Re: Request for Information: Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research

The Wikimedia Foundation thanks the Office of Science and Technology Policy (“OSTP”) for the opportunity to offer our perspective on increased access to the results of federally funded scientific research. The Wikimedia Foundation is the non-profit that hosts and supports a number of free, online, collectively-produced resources, including Wikipedia, Wikimedia Commons, and Wikidata. The Wikimedia projects are some of the largest repositories of freely licensed and publicly accessible information on everything from science and technology to arts and culture, and as their host we understand the importance of broad access to accurate and verifiable information.

Wikipedia is a trusted source for information, and is often the first place students, researchers, and even doctors turn to to find sources and begin research. Wikimedia Commons is a collection of images, videos, and audio files that are licensed for sharing and re-use. It serves as a resource for journalists seeking to illustrate a story, artists who remix and build upon other works, and illustrations for Wikipedia articles. Finally, Wikidata, the most recent addition to the Wikimedia projects, seeks to catalog all information contained on Wikipedia as data points that can be searched, compared, and analyzed at scale. Already, over 84 million items have been added to Wikidata and are accessible to anyone who wants to query the database. As Wikidata expands, it can be valuable to journalists, scientists, and researchers interested in how human knowledge collectively develops online.

Because so many people rely on Wikimedia’s projects, it is imperative that the information on them is accurate, particularly around scientific and medical information. Better access to trusted sources like federally-funded research could help improve the quality of coverage of these topics on Wikipedia and its sibling projects, and ensure that novices and professionals alike are finding, citing, and sharing the information in these important sources. Below, we will outline the current barriers to accessing federally funded research, and some ideas for how to best ensure widespread access to this type of research, data, and code.

1. *What current limitations exist to the effective communication of research outputs (publications, data, and code) and how might communications evolve to accelerate public access while advancing the quality of scientific research? What are the barriers to and opportunities for change?*

We commend the commitment made by OSTP to increase access to federally funded scientific research, and agree with the goals of increased public access and dissemination outlined in the 2013 Memorandum. Unfortunately, despite those earlier efforts, much federally funded research remains difficult to find, use, and afford for many in the Wikipedia community and beyond. Specifically, the barriers include: (1) embargo periods that delay timely access to and communication of information; (2) high cost barriers to individual researchers and citizen scientists; and (3) data that is incomplete or in inaccessible formats.

Wikipedia is created, edited, and maintained by thousands of volunteers around the world. Reliable sources are an important part of the Wikipedia ecosystem; every fact added to Wikipedia must be cited to a verifiable source¹ and editors spend valuable volunteer time finding, checking, and referencing sources for articles. For articles about medical subjects, the volunteer community has even more stringent requirements on articles and proper sourcing.² Many of the volunteers who work on medical articles are health care professionals themselves who are committed to providing accurate medical information for a wide audience.

That work is particularly important during times of public health crises, like we are seeing in the response to the COVID-19 pandemic. In March 2020, the article on the “2019-20 coronavirus pandemic” received 15.6 million views, with the articles on “coronavirus disease 2019” and “pandemic” received 6.2 and 2.9 million respectively.³ Behind these articles are a set of a few thousand dedicated editors who are working around the clock to ensure that these articles are up to date and accurately reflecting the current scientific research and information on the pandemic. In rapidly evolving situations like the 2020 pandemic, access to information and data coming out of federally-funded studies must be facilitated so that it is fast, easy, and free.

In fact, the current crisis highlights some of the main barriers that exist to using federally funded research that we believe should be changed in order to best allow everyone access to this important information. First, federally funded research is often subject to long embargo periods, of up to a year, before it is released to the public, meaning that public information on important scientific and medical topics can become outdated by the time it is accessible to most laypeople. Combined with other barriers to access, it can be years before these sources are discovered by a wider audience, and even more before the information they contain can be shared further (and often in more accessible language) on free information projects like Wikipedia. This places a temporal barrier between the production and discovery of knowledge and its dissemination to readers who could benefit from it. As scientific research accelerates with improvements to data analytics and artificial intelligence, this gap will become more and more concerning.

¹ See Wikipedia: Reliable sources, https://en.wikipedia.org/wiki/Wikipedia:Reliable_sources.

² Wikipedia: Identifying reliable sources (medicine) [https://en.wikipedia.org/wiki/Wikipedia:Identifying_reliable_sources_\(medicine\)](https://en.wikipedia.org/wiki/Wikipedia:Identifying_reliable_sources_(medicine)).

³ Pageviews Analysis: Comparison of Pageviews across Multiple Pages, https://tools.wmflabs.org/pageviews/?project=en.wikipedia.org&platform=all-access&agent=user&redirects=0&start=2020-03-01&end=2020-03-25&pages=Pandemic|COVID-19_testing|Misinformation_related_to_the_2019%E2%80%9320_coronavirus_pandemic|2019%E2%80%9320_coronavirus_pandemic|Coronavirus_disease_2019.

Second, even if federally funded research were released in a timely manner without any waiting periods or embargoes, it is often only accessible via expensive journal subscriptions or pay-per-view access.⁴ Taxpayers who pay for articles thus end up paying twice in order to make use of the research they have already funded. Academic journal articles are not just used by other researchers in academia or industry; they serve a critical purpose in informing the public, through interpretation and communication by science journalists, and also by volunteer writers like Wikipedians. The volunteers who create and maintain Wikipedia give much of their personal time to do so, and should not be required to spend money just to gain access to the sources needed to improve the encyclopedia. As taxpaying Americans, many Wikipedia readers have paid for the production of these sources with their tax dollars.⁵

The impact of paywalls on citizen science communication goes far beyond household pocketbook concerns. While universities and research institutions both public and private bear the largest share of this cost burden, individuals can face prices for individual access that are disproportionate to their budgets, fail to generate appreciable revenue for publishers, and, most importantly, stymie access and use of the knowledge contained within them.

The costs of pay-per-view access to an article prevent all but the most specialized individuals from accessing their information. Yet much of the important work based on scientific research is done by non-specialists, such as Wikipedia volunteers who may not originate an article on a detailed scientific subject, but might use the article to check facts or assertions in a variety of Wikipedia entries, building up the web of citation and reliability, and relaying that to a broader audience. Giving Wikipedia's volunteer writers, editors, and fact-checkers access to reliable research is so essential that Wikipedia volunteers have created a program called the Wikipedia Library, which makes a collection of open-source and select paywalled content available to certain Wikipedia editors.⁶ By working individually with over 80,000 unique journals and 59 databases, the Wikipedia Library allows active contributors to Wikipedia access to reliable sources through a "library card" system. Built over the course of five years, the Wikipedia Library is a monumental achievement of cooperation and access, but one which would be greatly improved by ensuring that federally-funded research does not end up behind paywalls.

Finally, while making federally-funded research quickly and freely available is a good start to ensuring these resources are used to their full potential, one additional barrier to the usefulness of this research is the availability and useability of the underlying data. Barriers to usefulness can come in the form of incomplete data sets, obscure data set formats, and technical restrictions on use. In addition to Wikipedia, the Wikimedia Foundation hosts a number of other free-knowledge projects, including Wikidata, a central storage location for structured data about all other Wikimedia projects. With over 80 million items, Wikidata is a model for how large-scale open data can be done, providing a web of information that can power a wide array of separate, diverse projects. By making the data generated by federal investment into research as complete, open, and interoperable as possible, a larger share of academia, industry, and citizens can all benefit from their analysis and application of the information.

⁴ Government Accountability Office, Federal Research Additional Actions Needed to Improve Public Access to Research Results ("GAO Report"). GAO-20-81. November 2019. <https://www.gao.gov/assets/710/702847.pdf>

⁵ Over 3 billion pageviews on English-language Wikipedia come from the United States each month. Wikimedia Statistics, Page Views By Country, <https://stats.wikimedia.org/#/en.wikipedia.org/reading/page-views-by-country/normal|map|2020-02-01~2020-02-01|~total|monthly>.

⁶ The Wikipedia Library, https://en.wikipedia.org/wiki/Wikipedia:The_Wikipedia_Library.

By focusing on making federally funded research available quickly, free of charge, and in accessible formats, OSTP can help remove the primary barriers between the public and the results of this research, leading to faster collaboration between researchers, broader outreach for citizen science, and a better-informed public that is better equipped to sort accurate scientific information from misinformation and hyperbole.

2. What more can Federal agencies do to make tax-payer funded research results, including peer-reviewed author manuscripts, data, and code funded by the Federal Government, freely and publicly accessible in a way that minimizes delay, maximizes access, and enhances usability? How can the Federal Government engage with other sectors to achieve these goals?

The Wikimedia Foundation urges OSTP to ensure peer-reviewed author manuscripts remain free and publicly accessible. In order to maintain free access, OSTP should work to ensure that: (1) embargo periods on articles are eliminated; (2) final peer-reviewed articles are available with reduced or minimal costs for access; (3) final articles are available in open or commonly-available, machine-readable formats; and (4) that OSTP, as per the GAO's recommendation, provide or designate the coordination and leadership necessary to promote compliance with the Administration's policy goals of openness and increased access.⁷

As noted above in our response to Question 1, embargo periods create barriers to researchers, science communicators, and the public accessing vital information in a timely manner. Preprints, and peer-reviewed manuscripts, should be made available as soon as they are available, in order to eliminate those barriers. Even finalized articles may benefit from reduced or eliminated embargo periods. Given that existing embargo periods are typically shorter than the twelve months recommended in the OSTP memorandum,⁸ OSTP should recommend that agencies' plans eliminate the embargo period, or at a minimum make it much shorter. While embargoes may benefit commercial journal publishers, they delay the immediate application of research and the dissemination of the most current information to the public. As a matter of course, and especially during times of crisis such as the current pandemic, federal research should consider public access and outreach a paramount priority.

The Wikimedia Foundation and the online editing community as a whole would also benefit from policies that reduced or removed the high cost of accessing articles. For instance, Wikipedia serves as an initial reference point for many individual questions about developing research. The accuracy of the articles that members of the public find on the Internet in turn rely upon the quality of the sources that Wikipedia contributors and editors can access — not only to provide a plainer-language version of the relevant information, but to be able to check the interpretation of previous contributors, to ensure that accuracy was not lost in the translation from a scientific article to encyclopedia entry. Ensuring that Wikipedia's unpaid volunteer editors can freely access the most current information without spending money out-of-pocket increases the accuracy and reach of the knowledge gained through federally-funded research, far beyond the academy.

The outcome of federally-funded research is not merely articles and literature, however. It also includes the data produced by the research, which allows for further analysis, testing, and refinement of an article's claims in the public sphere. Making this data available in a readable, interoperable format is therefore vital. Not only should articles and drafts be available in open or widely-used formats; the data

⁷ GAO Report at 48.

⁸ See, e.g., EBSCO Connect, *What are Publication Embargoes?*, https://connect.ebsco.com/s/article/What-are-Publication-Embargoes?language=en_US.

sets generated by the research should, to the greatest extent possible, be made accessible in open, machine-readable formats.

OSTP serves a key role in being able to coordinate the relevant agencies' efforts in making the above changes, and in filling the other existing gaps between the stated goals of increased returns on federal research investment and the reality for access today. We ask that the Office continue and further its interagency efforts, while including the ongoing needs and perspectives of civil society stakeholders such as academic researchers, libraries, and citizen scientists and science communicators in its processes.

Conclusion

The Wikimedia Foundation urges OSTP to further its goals of increasing public access to the knowledge gained from federally-funded research. In fulfilling and extending its coordination and leadership role, it should also focus efforts on ensuring: (1) limited embargo periods, (2) reduced costs of access, and (3) that articles and data are published in an interoperable format. The Wikimedia Foundation's goal is to enable everyone to share freely in the sum of all knowledge. OSTP's open research policy goals are to maximize the impact of federal research. By lowering the barriers of embargoes, access costs, and inaccessible data, OSTP's recommendations can give Wikimedia projects access to the information necessary to spread the reach of that federally-funded knowledge further.

From: Bruce Hamilton <bah@health.ucsd.edu>
Sent: Tuesday, May 5, 2020 6:55 PM
To: MBX OSTP Public Access <MBX.OSTP.PublicAccess@ostp.eop.gov>
Subject: [EXTERNAL] RFI Response: Public Access

I write to express strong support for making public-funded science available to the public without delay or restriction once the work is completed and peer-reviewed.

The current subscription-based model is outdated and inefficient. Subscription charges were sensible in the print era, when significant costs accrued with printing and distribution. Specialists subscribed (typically at public expense) and the public accessed the same publications through libraries that subscribed. But this is no longer how words and images are distributed. Production costs are predominantly fixed and not scaled with distribution. Publication in professional scientific journals relies on unpaid labor from authors, editorial boards, and peer reviewers.

In addition to being outdated by electronic publication, the subscription model imposes real costs that reduce the value returned to the public. While university researchers typically have access to professional journals through bundled institutional subscriptions, access to the published record is too often limited by budget choices—even to authors of the article. For biomedical research in particular, subscription models and paywalls keep research out of the reach of entrepreneurs, physicians, and patients. Translating basic discoveries into therapies would faster if every start-up had full access to the latest results. Physicians could better advise their patients if they didn't have to wait 6-12 months for new results to enter the public domains. Patients and their families could make more informed decisions on experimental treatments if they could see the results.

Every group currently disadvantaged by the subscription model—entrepreneurs, physicians, and especially patients—are taxpayers who funded the research. Blocking or delaying their access is a drain on resources and on precious time that many patients simply do not have. As a matter of fairness, as a matter of equity, as a matter of letting Americans benefit from the research they fund, I implore you: tear down these paywalls.

Sincerely,

Bruce A. Hamilton, Ph.D.
Professor of Cellular & Molecular Medicine,
Professor of Medical Genetics,
Associate Director, Institute for Genomic Medicine
UC San Diego School of Medicine
9500 Gilman Drive
La Jolla, CA 92093-0644

><https://profiles.ucsd.edu/bruce.hamilton><
><http://hamiltonlab.ucsd.edu/><
><http://medgenetics.ucsd.edu/faculty/Pages/bruce-hamilton.aspx><
><http://igm.ucsd.edu/faculty/profiles/hamilton.shtml><



UNIVERSITY LIBRARIAN

May 5, 2020

Dr. Lisa Nichols
Assistant Director for Academic Engagement
Office of Science and Technology Policy
Submitted via email: OpenScience@ostp.eop.gov

RE: Docket ID [OSTP-2020-0004](#) Request for Information: Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research (RFI Response: Public Access)

Dear Dr. Nichols:

I write on behalf of the University of California Santa Barbara with regard to the Request for Information (RFI): Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research, issued on February 19, 2020.

UCSB endorses the UC system response authored by Lourdes G. DeMattos, Acting Executive Director, Research Policy Analysis & Coordination, University of California.

UCSB unequivocally supports a zero-embargo policy for peer-reviewed author accepted manuscripts resulting from federally funded scientific research. Since the coronavirus emergency, UCSB faculty have been actively working – as have many researchers across the world – on developing solutions. It is now abundantly clear that immediate sharing of research is a matter of life and death, and, indirectly, mitigation of economic harm to society.

UCSB Library took the lead in administering a UC-wide poll to gauge sentiment about the UC's position in negotiating for open access for UC research and, as a result, not currently having immediate access to Elsevier journal articles. A strong majority of our faculty supported the underlying principles and negotiation's goals. We received numerous comments along these lines:

"The UC did the right thing and should continue to resist the trend by Elsevier et al. to consolidate control of research content and charge more money." (UCSB Faculty)

"I'm all in favor of open access and I'm glad to see UC take steps towards Open Science. The US should follow suit to the steps taken in Europe." (UCSB Graduate Student)

"Open Access articles are the future and I am happy to be at an institution that is taking the necessary first steps to make science more accessible." (UC Berkeley Graduate Student)

"Open science please!!!! Keep up the good work!" (UCSF, Postdoc)



UNIVERSITY LIBRARIAN

The UCSB Library is also taking the lead, with colleagues in the UK, on developing a prototype open platform (wikiTOCs) that will promote open access versions of articles in the context of journals' tables of contents. WikiTOCs will enable researchers and the general public across the globe, and especially those who are not familiar with existing disciplinary databases and preprint servers, to discover and read current research. A zero embargo policy will greatly enhance the utility of this community-focused platform.

Thank you for your consideration of these comments on behalf of the University of California, Santa Barbara.

Sincerely,

A handwritten signature in blue ink, appearing to read "Kristin Antelman".

Kristin Antelman
University Librarian

May 5, 2020

Dr. Kelvin K. Droegemeier
Director, Office of Science and Technology Policy
Eisenhower Executive Office Building
1650 Pennsylvania Avenue, NW
Washington, DC 20504
publicaccess@ostp.eop.gov

RE: Response to OSTP RFI (FR Doc. 2020-0662) “Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting from Federally Funded Research”

Dear Dr. Droegemeier,

The Congress of Neurological Surgeons (CNS) appreciates the opportunity to respond to the Request for Information: Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting from Federally Funded Research. On behalf of our 9,700+ members representing the global community of neurosurgeons, CNS respectfully requests the administration maintain the current 12-month embargo on publications arising from federally funded research.

Founded in 1951, CNS is one of the world’s largest scientific and educational associations of neurological surgeons. Neurological surgery is the medical specialty concerned with the prevention, diagnosis, treatment and rehabilitation of disorders that affect the nervous system, including the spinal column, spinal cord, brain and peripheral nerves. CNS’ mission is “to enhance health and improve lives through the advancement of neurosurgical education and scientific exchange.” NEUROSURGERY® Publications, our portfolio of three peer-reviewed scholarly journals, is integral to the continued advancements in neurosurgical research and improving patient outcomes.

Related to the RFI on public access to peer-reviewed publications, data, and code arising from federally funded research, CNS understands the White House Office of Science and Technology Policy (OSTP) is contemplating the adoption of a zero-month embargo policy for such publications, thereby providing free global access to research derived from federal grant funding. CNS is opposed to eliminating the current 12-month embargo. Such a policy change will materially impact the organization’s ability to continue advancing neurosurgical research, which is supported in large part by the NEUROSURGERY® Publications portfolio.

The NEUROSURGERY® Publications include *Neurosurgery*, *Operative Neurosurgery*, and the recently launched open access journal, *Neurosurgery Open*. CNS fully supports the open science initiative demonstrated through the organization’s recent launch of *Neurosurgery Open*. *Neurosurgery Open* provides a pathway to publication of neurosurgical research supported by funders who mandate publication in a fully, open access journal. Additionally, while publishing under a more traditional business model, *Neurosurgery* and *Operative Neurosurgery* offer a hybrid open access option and permit embargoed, green open access, in compliance with the [2013 memorandum](#) from the OSTP.

CNS welcomes discussion and collaboration with funders and the broad community of researchers to further advance open science and access to data and publications. However, disruption of the current business model will have a detrimental impact on CNS as revenue from our subscription-based, advertising supported journals comprise more than 25% of CNS’ annual revenues.

OSTP’s proposed policy change could have severe impacts on CNS’ ability to invest in its publishing program. The journals are vital to the dissemination of peer-reviewed articles while supporting the U.S. medical research community through education and other essential society activities. Such investments

include the recent launch of *Neurosurgery Open* as well as the ongoing costs to support peer review and editorial operations as well as distribution of the journals to all CNS members.

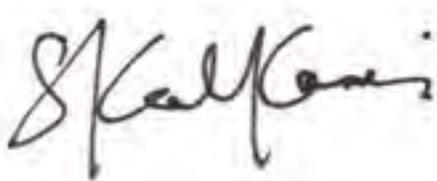
In areas of science where open access has become the de facto business model, an Executive Order eliminating the embargo on federally funded research may have a minimal impact. In medicine, the publishing models are more complex and dependent on multiple revenue streams. Article Processing Fees (APCs) for open access publication are not typically allotted in research grants received by the medical -- and more specifically surgical -- community. Mandating immediate open access would mean changes in business model for many journals and the resulting appropriation of grant monies to pay APCs means less funds to conduct research.

CNS is committed to the advancement of neurosurgical education, research and patient care. Like many other scientific and medical societies, CNS supports the goals of open science and the broad distribution of research funded by the federal government. However, a requirement for immediate, free access to research will unnecessarily disrupt the existing model supporting scientific and medical innovation by CNS and other not-for-profit organizations. CNS is concerned that an Executive Order eliminating the embargo on published research could ultimately undermine the U.S. government's goals to advance American innovation and competitiveness while slowing the communication of research results.

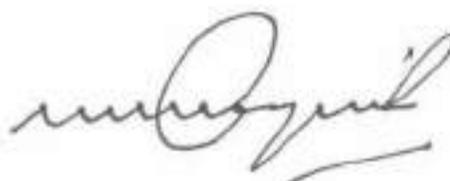
Given the recent COVID-19 pandemic, CNS, along with medical societies more broadly, is being forced to consider the profound disruption the pandemic will have on our existing business model, a significant portion of which, relies on in-person educational events and conferences. These events are and will continue to be impacted by a combination of health policy guidelines and travel restrictions imposed on our members at the institutional level. While the ultimate financial impact of the pandemic is still unclear, we can say for certain that an Executive Order that will materially change the scholarly publication paradigm, will create an additional financial impact that will make it more difficult for CNS to serve its members during this difficult time and into the future.

On behalf of our members, we thank you for the opportunity to voice CNS' position. We look forward to continued discussions between OSTP and societies and publishers in the STM sector about achieving the administration's goals toward open science. We are confident this can be accomplished while maintaining the current 12-month embargo on publications derived from federally funded research.

Sincerely,



Steven N. Kalkanis, MD
President, Congress of Neurological Surgeons



Nelson M. Oyesiku, MD, PhD, FACS
Editor-in-Chief, NEUROSURGERY® Publications



THE LIBRARY

BERKELEY, CALIFORNIA 94720-6000

May 6, 2020

Dr. Lisa Nichols
Assistant Director for Academic Engagement
Office of Science and Technology Policy

RE: Request for Information: Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research¹

Dear Dr. Nichols:

I'm Jeffrey MacKie-Mason, University Librarian and Chief Digital Scholarship Officer at University of California (UC), Berkeley. On behalf of UC Berkeley Library, I submit these comments supporting additional measures to improve and expand public access to federally funded research.²

What current limitations exist to the effective communication of research outputs and how might communications evolve to accelerate public access...?

OSTP's current policy permits up to a 12-month embargo and allows authors to disseminate one of two potential versions of their federally-funded work: The peer-reviewed pre-publication manuscript (typically referred to as an "author accepted manuscript" or "AAM") and the final published version inclusive of publisher typesetting and pagination (typically referred to as the "version of record" or "VOR"). If OSTP maintains this practice of seeking dissemination of either the AAM or VOR but removes the 12-month embargo period, the Federal Government could eliminate unnecessary delay in the communication of research.

Granting immediate and unencumbered access to peer-reviewed research, data, and code will equip scientists to better address critical societal needs in real time. The scientific community's ability to respond to the coronavirus pandemic is but one example. Government advisors (including OSTP) from a dozen countries have already called for open sharing of scientific papers and data related to COVID-19.³ If researchers must wait until an embargo lapses to read and use research to which their institutions do not subscribe, their work will be slowed, further delaying crucial and timely research and treatment. While well-meaning, it is not enough for commercial publishers to simply lower their paywalls on particular journals or research paper

¹ Federal Register. (2020, February 19). *Request for information: Public access to peer-reviewed scholarly publications, data and code resulting from federally funded research*. <https://www.federalregister.gov/documents/2020/02/19/2020-03189/request-for-information-public-access-to-peer-reviewed-scholarly-publications-data-and-code>

² Office of Science and Technology Policy. (2013, February 22). *Memorandum for the heads of executive departments and agencies: Increasing access to the results of federally funded scientific research*. https://obamawhitehouse.archives.gov/sites/default/files/microsites/ostp/ostp_public_access_memo_2013.pdf

³ Finley, K. (2020, March 13). Global officials call for free access to Covid-19 research. *Wired*. <https://www.wired.com/story/global-officials-call-free-access-covid-19-research/>

topics during a pandemic or other crisis.⁴ Larivière, et al. argue that the “embeddedness” of scientific literature demonstrates the limitations of simply opening one particular subject area of research. They show that “less than one third of the cited articles from which the “coronavirus articles” drew information and inspiration were other “coronavirus articles” ... [and] even if all articles on the topic of coronaviruses were made available, this would still be insufficient to address the crisis, given the inherently interdisciplinary nature of biomedical research.”⁵

In addition, research methods such as text and data mining (TDM) are being used to analyze large swaths of the scientific record, enabling connections across disparate fields of inquiry that were impossible to glean otherwise. Indeed, the White House has issued a call to action to develop TDM techniques to speed scientific discovery on COVID-19.⁶ Right now, researchers face significant legal hurdles in conducting TDM when content is sequestered behind publishing paywalls.⁷ Providing immediate open access to all federally funded peer-reviewed scientific research would drastically improve the effectiveness of this type of computational text analysis.

It need not take a pandemic to reveal the benefits of rapidly distributing this critical information. As just another example, immediate dissemination of published research on leading causes of death in the U.S. (such as coronary artery disease, cancers, and strokes) could potentially help save millions of American lives every year.⁸ OSTP can make a significant contribution to the scientific and medical research community by implementing a zero-embargo open access policy for **all** scientific publications, data, and code arising from federally funded research.

What more can Federal agencies do to make tax-payer funded research results, including peer-reviewed author manuscripts, data, and code funded by the Federal Government, freely and publicly accessible in a way that minimizes delay, maximizes access, and enhances usability?

Despite decades of scholarly community efforts to improve public access to research, about 85% of journal articles being published each year remain trapped behind paywalls.⁹ At the same time, subscription prices of commercial scholarly journals continue to increase, while university library collections budgets shrink—further constricting public access to knowledge. The Federal agencies that support research are well-positioned to address these problems by eliminating embargoes for the distribution of peer-reviewed research made possible by their funding.

A Federal zero-embargo mandate can yield impact where institutional policies have had less success. Like many universities, UC has adopted a zero-embargo deposit policy for UC’s

⁴ Elsevier. (2020, March 13). *Elsevier gives full access to its content on its COVID-19 information center for PubMed Central and other public health databases to accelerate fight against coronavirus*. <https://www.elsevier.com/about/press-releases/corporate/elsevier-gives-full-access-to-its-content-on-its-covid-19-information-center-for-pubmed-central-and-other-public-health-databases-to-accelerate-fight-against-coronavirus>

⁵ Larivière, V., Shu, F., & Sugimoto, C. (2020, March 5). The Coronavirus (COVID-19) outbreak highlights serious deficiencies in scholarly communication. *London School of Economics blog*. <https://blogs.lse.ac.uk/impactofsocialsciences/2020/03/05/the-coronavirus-covid-19-outbreak-highlights-serious-deficiencies-in-scholarly-communication/>

⁶ The White House. (2020, March 16). *Call to action to the tech community on new machine readable COVID-19 dataset*. <https://www.whitehouse.gov/briefings-statements/call-action-tech-community-new-machine-readable-covid-19-dataset/>

⁷ Samberg, R. G., & Hennesy, C. (2019). Law and literacy in non-consumptive text mining: Guiding researchers through the landscape of computational text analysis. *Copyright Conversations: Rights Literacy in a Digital World* (pp. 289–315). ACRL. <https://escholarship.org/uc/item/55j0h74g>

⁸ Centers for Disease Control and Prevention. (2017, May 3). *Deaths and mortality*. <https://www.cdc.gov/nchs/fastats/deaths.htm>

⁹ Piwowar, H., Priem J., Larivière, V., Alperin, J. P., Matthias, L., Norlander, B., Farley, A., West, J., & Haustein, S. (2018). The state of OA: A large-scale analysis of the prevalence and impact of open access articles. *PeerJ*. <https://doi.org/10.7717/peerj.4375/>

repository—a policy that, in concept, could greatly benefit the advancement of science since UC researchers publish nearly 10% of all scholarly literature in the United States.¹⁰ Yet, institutional open access policies have low compliance rates (in Europe, for instance, just 15%).¹¹

Federal agencies could also augment the dollar value of research grants by approximately 1%–2% to build in sufficient funding for open access publishing costs (or, with a bit more overhead, provide supplements, to allow for differential rates of publication from grants — or make direct payments to publishers). The UC has undertaken this approach to subsidize open access publishing by its researchers through what are known as transformative agreements.¹² Transformative arrangements shift the publishing business model from one based on subscription access to one in which publishers are remunerated for open access publishing services. Remuneration is in the form of “article processing charges” (APCs) that range anywhere from several hundred dollars to upwards of \$5000. Authors who wish to publish open access through an APC model bear the responsibility of funding these charges. With transformative agreements, universities have negotiated to pay a portion of the APCs—subsidies that are typically offset against universities’ total payment to the publishers under their subscription agreements. By UC estimates, the total cost of publishing all US federally funded research using an APC model underwritten in full would amount to only 1.6% of the existing Federal research budget. Even were the Federal government to increase grant budgets by 1% to subsidize (but not fully cover) APCs, this would have tremendous value for public access to knowledge while representing only a fraction of the total U.S. research budget.

How would American science leadership and...competitiveness benefit from immediate access to these resources? What are potential challenges and effective approaches for overcoming them?

UC Berkeley Professor of Cell and Developmental Biology and 2013 Nobel Prize winner Randy Schekman is renowned for his contributions to American science leadership. As he has explained, “most of the research...conducted in this country is paid for by public funds [...] The value of open access has been that the people who are not in institutions like the University of California can have access to literature.”¹³

Some publishers, however, have suggested that immediate access to federally funded research threatens their subscription-based publishing models. In December 2019, 135 publishers submitted a letter to the President expressing opposition to a potential change in the OSTP embargo policy.¹⁴ That letter contained abundant misconceptions, detailed in UC’s response.¹⁵ Principal among the errors was that, “In the coming years, this cost shift [purportedly resulting

¹⁰ University of California. (2018). *Research. Accountability Report 2018*. <https://accountability.universityofcalifornia.edu/2018/chapters/chapter-9.html>

¹¹ European Commission (2015, March). Open access policy alignment strategies for European Union research. <https://eprints.soton.ac.uk/375854/1/PASTEUR4OA3.pdf>

¹² University of California Office of Scholarly Communication. (n.d.). *An introductory guide to the UC model transformative agreement*. <https://osc.universityofcalifornia.edu/uc-publisher-relationships/resources-for-negotiating-with-publishers/negotiating-with-scholarly-journal-publishers-a-toolkit/an-introductory-guide-to-the-uc-model-transformative-agreement/>

¹³ UC Berkeley Library. (2018, October 12). *In support of open access* [Video]. YouTube. <https://www.youtube.com/watch?v=XOhMnnSRX2g>

¹⁴ Association of American Publishers. (2019, December 18). *Coalition of 135+ scientific research and publishing organizations sends letter to administration*. <https://publishers.org/news/coalition-of-135-scientific-research-and-publishing-organizations-sends-letter-to-administration/>

¹⁵ Anderson, I., & MacKie-Mason, J. (2020, January 8). *UC response to publisher letter opposing immediate open access to federally funded research*. University of California Office of Scholarly Communication. <https://osc.universityofcalifornia.edu/2020/01/ostp-publisher-letter-response/>

from a zero-embargo policy] would place billions of dollars of new and additional burden on taxpayers.” Most current subscription payments to publishers already come from taxpayer funds that universities receive to cover their research infrastructure. Changing the publishing models so that these institutions pay publishers for their services rather than for access to subscription content does not increase taxpayer expenditure; it just repurposes those taxpayer dollars to pay for publishing in a way that allows the public to freely read the results, too.

Publishers’ concerns about the economic impacts of a zero-embargo policy are misplaced in another respect: OSTP’s current policy requires the deposit of either the AAM or VOR. AAMs have not been copy-edited, typeset, paginated, or galley-corrected by the journal yet. Publishers can still impose (if they choose to) an embargo for the deposit of the VOR, or even continue to charge for the VOR via subscription. Indeed, some society publishers (like Royal Society, a leading scientific publisher) have enabled deposits of pre-publication AAMs without observing declines in subscription sales,¹⁶ even in the absence of any embargo period.

We are particularly sympathetic to a tension articulated by mission-driven publishers like non-profits and learned societies. These groups may use some revenue from journal subscription sales to fund other important services for society members and the scientific community, such as conferences, instructional programming, scholarships, and awards. Were subscription sales to decline further as a result of immediate free access to certain versions of peer-reviewed journal articles, societies fear they might have less income to support these other operations. A flaw in this argument is that the loss of subscription revenue does not mean that it will not be replaced with publishing services revenue; indeed, this is precisely the model for transformative agreements advanced by the UC (and by the over 145 signatories to the OA2020 Expression of Interest¹⁷). While reconfiguring a society’s business model is not insignificant, non-profit publishers have an increasing degree of support to transform their business models in ways that sustain these other public service functions.

Academic libraries are increasingly partnering with mission-driven publishers as funders of publishing, rather than procurers of paywalled content. For instance, The Association for Computing Machinery (ACM) recently concluded a months-long collaborative process with multiple academic institutions (including the University of California) yielding a tiered open access publishing payment model based on institutional article output.¹⁸ Institutions are paying ACM to publish open access, rather than paying ACM to obtain “read” access. The University of California has also signed a transformative open access publishing agreement with Cambridge University Press (which mostly publishes learned society journals) to help Cambridge transition to sustainable open access publishing.¹⁹ More such agreements are on the way, and the University of California is far from alone in these efforts: Such transformative agreements have proliferated, as evident in the ESAC Registry.²⁰

¹⁶ Folan, B. (2019, August 1). How should scholarly societies transition to open access? Webinar key takeaways and answers to attendee questions. OASPA. <https://oaspa.org/how-should-scholarly-societies-transition-to-open-access-webinar-key-takeaways-and-answers-to-attendee-questions/>

¹⁷ Open Access 2020. (n.d.). *Expression of interest in the large-scale implementation of open access to scholarly journals*. <https://oa2020.org/mission/>

¹⁸ UC Office of Scholarly Communication. (2020, January 23). *ACM signs new open access agreements with four leading universities*. <https://osc.universityofcalifornia.edu/2020/01/acm-open/>

¹⁹ UC Office of Scholarly Communication. (2019, April 10). *Cambridge University Press and the University of California agree to open access publishing deal*. <https://osc.universityofcalifornia.edu/2019/04/cambridge-uc/>

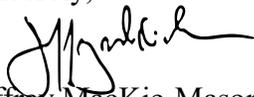
²⁰ Efficiency and Standards for Article Charges. (n.d.). *Agreement registry*. <https://esac-initiative.org/about/transformative-agreements/agreement-registry/>

Academic institutions and other scientific publishing stakeholders also collaborate to support societies in developing and implementing open access business models. For instance, UC Berkeley Library has co-founded and now helps steer Transitioning Society Publications to Open Access (TSPOA), an organization that provides consultations, support, and other resources for society publishing partners to help them develop an open access publishing model that is appropriate, effective and sustainable.²¹ TSPOA also partners with similar support organizations like Society Publishers' Coalition to provide education around emerging open access business models for learned societies.²² Within UC more broadly, we have developed guides²³ and checklists²⁴ to help societies and journals transition to open access, and have hosted roundtables²⁵ to support journal editorial boards. These proliferating services support societies in understanding which open access transition models might be best to experiment with or adopt—and potentially alleviate their trepidation about the long tail of a revised OSTP policy.

A scholarly publisher cannot transform its business model to open access overnight, nor can other publishing stakeholders build capacity to provide learned societies with support services in equally short order. The Federal Government could support this process, however, through ongoing multi-stakeholder engagement, and by sustaining momentum for a transition to open access by removing an embargo period for the deposit of federally funded research. While no single approach to achieving open access is necessarily more effective than others, a zero-embargo policy is a critical component of the broader collective support being offered to make research results openly accessible.

Thank you for your consideration of these comments, which we would be pleased to discuss further.

Sincerely,



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Professor, School of Information, and Professor of Economics
University of California, Berkeley

²¹ Transitioning Society Publications to Open Access. (n.d.). <https://tspoa.org/>

²² Transitioning Society Publications to Open Access. (n.d.). *Webinars charting paths forward for open access publishing by learned societies*. <https://tspoa.org/resources/webinars/>

²³ UC Office of Scholarly Communication Services. (2019, February). *Guide to transitioning journals to open access publishing*. <https://osc.universityofcalifornia.edu/wp-content/uploads/2019/02/UC-OSC-Guide-to-Transitioning-Journals-to-OA.pdf>

²⁴ UC Office of Scholarly Communication Services. (2019, February). *Checklist for consultations about transitioning journals to OA*. <https://osc.universityofcalifornia.edu/wp-content/uploads/2019/02/UC-OSC-Checklist-for-Journal-Flipping-Conversations.pdf>

²⁵ University of California Office of Scholarly Communication Services. (n.d.). *Hosting a roundtable*. <https://osc.universityofcalifornia.edu/uc-publisher-relationships/resources-for-negotiating-with-publishers/transitioning-journals-to-oa/hosting-a-roundtable/>

Emory University Libraries' Response to [Request for Information: Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research](#)

This document constitutes a response to the request for information from the United States Office of Science and Technology Policy (OSTP) concerning increased public access to federally funded scholarly research results in the form of publications, data, and code. This response is from Emory University Libraries in Atlanta, Georgia. We thank the OSTP for showing concern about this question and for taking time to ask for feedback from stakeholder individuals and institutions. Authors of this response are the following information professionals employed by Emory University Libraries: Jody Bailey, Head of the Scholarly Communications Office; Jennifer Doty, Research Data Librarian; Melanie Kowalski, Copyright and Scholarly Communications Librarian; Jeremy Kupsco, Research Informationist; Kimberly Powell, Research Impact Informationist; and Kylie Shannon, Scholarly Repository Specialist Senior.

Question 1: What current limitations exist to the effective communication of research outputs (publications, data, and code) and how might communications evolve to accelerate public access while advancing the quality of scientific research? What are the barriers to and opportunities for change?

Current limitations to publications: The vast majority of the U.S. population cannot access the results of federally funded research in a timely manner. Currently, unless the results of federally funded research are published in an open access journal, the public may wait over a year to access these results, and with the speed of research in science, technology, and medical fields, research results that are a year old are already out of date. It is important to remember that billions of taxpayer dollars supported the creation of the research, and taxpayers already fund the closed-access publication of these articles through subscription fees paid by public universities. This problem leads to a system of inequity because all individuals and institutions that need this access simply do not have it unless they are able to pay for it (again) in the form of costly subscriptions or per-item charges. Those without access who play critical roles in the welfare of the American people include healthcare professionals; social workers; mental health professionals; local, state, and federal government workers, including those who create broad health policies affecting the entire U.S. population; professionals who work in fields that create and maintain crucial infrastructure; entrepreneurs and small-business owners; and many more.

Regarding access for healthcare professionals, the current licensing practices of publishers often lead to a patchwork of access to publications, databases, and data within the same institution. For example, Emory University has tiers of access between Emory University employees and Emory Healthcare employees because the cost of access to library resources for a rapidly growing healthcare system is prohibitive. This unequal access leads to situations where a faculty physician may have greater access to information needed for essential health outcomes than the community-affiliates, hospitalists, nurses, and pharmacists who are an integral part of the same treatment team. Implementing a policy that ensures immediate barrier-free access to federally funded work will directly improve patient care outcomes by resolving the inequalities that exist in information access and ensure healthcare providers across the country are all able to access critically important information.

Current limitations to data: Federal funding agencies in the U.S. have supported sharing of data through mandates and initiatives to build infrastructure to make data underlying publications more accessible. However, the adoption of widespread data sharing in all scientific disciplines is uneven at best. Data that are included as supplemental files to articles are often restricted by the same paywalls as the related articles. Data deposited with established repositories and data archives fare better with regard to public access, but unless data citations with persistent identifiers such as DOIs are included in the articles, it is difficult to ensure long-term connections between published research and related datasets. This practice also presumes a one-to-one relationship between a distinct publication and its associated data. In reality, researchers may add to existing data as they conduct further research, making dataset versioning essential. In many cases, multiple publications will also result from further analysis of the data. Steps taken by funders and journals to enhance access to related datasets by encouraging or requiring data deposits in recommended repositories, and data citations with persistent identifiers are important. There are further opportunities to expand policies to address the limitations of this approach and recognize research data as a scholarly output in its own right.

Current barriers to and opportunities for change: Many major and minor players in the publishing industry have already expressed opposition to this proposed change ([source](#)). It is critical to remember, however, that library budgets are at a breaking point. From 2008 to 2018, journal subscription costs rose 166% for libraries, outstripping the consumer price index increase of 54% at the same time that many libraries were experiencing budget reductions because of the economic recession ([source](#)). Thus publishers, funders, and libraries must work together to find solutions to this crisis. For example, scholarly society publishers often rely heavily on subscription revenues to support their activities, and at least one initiative involving libraries and publishers, [Transitioning Society Publications to Open Access](#), is currently working toward solutions. Other viable research dissemination methods are manuscript deposits in preprint servers and in disciplinary and institutional repositories (aka green open access), which are compatible with peer review and other quality control systems.

Question 2: What more can Federal agencies do to make tax-payer funded research results, including peer-reviewed author manuscripts, data, and code funded by the Federal Government, freely and publicly accessible in a way that minimizes delay, maximizes access, and enhances usability? How can the Federal Government engage with other sectors to achieve these goals?

The federal government should implement a national policy ensuring immediate, barrier-free access to the results of research funded by taxpayer dollars. This policy should include the following requirements:

- **Immediate Access** — There should be no embargo or access restriction period in which full public access to the results of federally funded research is prevented or limited. The results of research should be available to all taxpayers at the same time that they are made accessible to members of the research community through venues like article publication and data repositories.
- **Open Licensing** — The results of federally funded research need to be distributed to the public via open licenses to ensure that the work can be reused and built upon in full. We recommend the requirement of a Creative Commons Attribution or similar license or public domain designation.
- **Comprehensive Access** — This policy must apply equally to all formats of research results and tools needed to ensure reliability and validation, including article publications, data, code, software, etc.
- **Machine-readability** — The results of research must be made available to taxpayers in machine-readable formats to ensure that the research can be fully utilized in text and data mining as well as computational analysis.
- **Preservation** — The results of research should be preserved through a digital repository akin to PubMed Central.

This policy would allow for broader innovation and business development by ensuring fast and equal access to all researchers. It would also result in significant improvement in research efficiency by reducing the resource loss associated with locating information and ensuring access to that information.

Emory University Libraries have a history of providing services and support to help ensure researchers understand and are prepared to comply with federal funding rules and guidelines. For example, our Woodruff Health Sciences Center Library has staff dedicated to supporting compliance with the current NIH access policy. Additionally, the Libraries maintain institutional repositories for faculty scholarship and data that can be leveraged to accommodate any new access requirements. In the event of the implementation of a new, more comprehensive policy, we are well positioned and motivated to help researchers transition to a new compliance landscape. As our history proves, we will follow the federal government's lead with regard to research-output-sharing policies.

Question 3: How would American science leadership and American competitiveness benefit from immediate access to these resources? What are potential challenges and effective approaches for overcoming them? Analyses that weigh the trade-offs of different approaches and models, especially those that provide data, will be particularly helpful.

Immediate open access to research results is swiftly becoming the accepted norm in many parts of the world. For example, a group of major governmental funders (mainly from the European Union) have become signatories of Plan S “whereby research funders will mandate that access to research publications that are generated through research grants that they allocate, must be fully and immediately open and cannot be monetised in any way” ([source](#)). In February 2020, the Canadian government also announced a recommendation that “aims to achieve Open Access by default without an embargo period. It applies to new science articles published in academic scholarly journals as of January 2022, as well as new federal science publications released as of January 2023” ([source](#)). Open access to research results has long been the norm in Latin America and the Caribbean, where thousands of journals are published by scholar-led initiatives using the platinum publishing model in which authors do not pay to publish nor do users pay for access to the publications ([source](#)).

Since open access research results are accessible to anyone with internet access, this type of information dissemination leads to acceleration of scientific research, in turn boosting innovation and increasing competitiveness for these nations. Thus, European researchers in particular are poised to replace U.S. researchers as global R&D leaders in science, medicine, engineering, and technology fields. No matter the size, U.S. businesses would benefit from open access to federally funded STEM research. The current system in which readers must pay to access research impedes and obstructs startups that cannot afford the growing cost of journal subscriptions or piecemeal acquisitions of articles, especially since business innovations often require access to interdisciplinary research and thus subscribing to only one or two journals will not suffice. Immediate open access to research outputs would encourage private investment in information technology, which is a proven strong point in the U.S. economy, leading to a snowball effect of newly developed products and services, which in turn would lead to economic growth for the nation and its citizens. An example of the economic impact of open access in the United States can be found in the Human Genome Project. From 1990-2003, federal spending on this project was \$3.8 billion, but the return on this investment was 141:1 and “generated an economic impact of \$796 billion” ([source](#)).

In the U.S. higher education sector, particularly in libraries, open access has become critical. Even the most well-resourced libraries can no longer afford the costs of journal subscriptions that have risen at an exponential rate since the 1970s. For example, the Harvard University Faculty Advisory Council spotlighted this situation *eight years ago* in a letter to all Harvard faculty in which they wrote, “Prices for online content from two providers have increased by about 145% over the past six years, which far exceeds not only the consumer price index, but also the higher education and the library price indices” ([source](#)). These kinds of price increases are unsustainable in the best of times, but in the current global pandemic situation, which is likely to result in a deep economic

recession if not a global depression, higher education institutions will be forced to cut budgets on a massive scale, and even greater inequities in access to research results will ensue.

As mentioned above, potential challenges come from the publishing sector and current norms in research dissemination. However, change does not necessarily have to be radical. The federal government could create a repository to house all articles resulting from federally funded research and require authors and publishers to deposit all relevant manuscripts. This repository could be similar to, or an expansion of, PubMed Central, which reportedly costs ~\$4.6 million per year to administer and provides public access to more than 100,000 articles per year. This cost represents only a minute fraction of the NIH's annual \$41 billion operating budget. The federal government could also require publishers to submit peer-reviewed, accepted manuscripts to disciplinary or institutional repositories, as previously mentioned. Solutions such as these would be a win for all parties: the public would have access to all federally funded research, publishers could continue operations (and small society publishers would not be irreparably harmed), and libraries could allocate their collections budgets in more sustainable ways.

On behalf of Emory University Libraries, we again thank the Office of Science and Technology Policy for inviting the research community to comment on this proposed expansion of public access to federally funded research. Our librarians and administrative leadership would welcome any questions OSTP staff may have regarding our response.

Draft NIH Policy Data Management and Sharing RU Response

- **Purpose:** none
- **Definitions:** none
- **Scope:** none
- **Effective Date(s):** none
- **Requirements:** none
- **Data Management and Sharing Plans:** The NIH's draft guidance proposes that the submission of a Data Management Plan would be on a Just-In-Time basis. We believe that the inclusion of this step at an earlier stage in the process would allow concurrent planning with experimental design and facilitate better time management in the process of planning. Especially important is that the Plan be completed prior to budgeting rather than after, as the process is proposed in the draft guidance. Internally run at RU is the Rockefeller University Press (RUP), which publishes Journal of Cell Biology (JCB), Journal of Experimental Medicine (JEM), and Journal of General Physiology (JGP) and co-publishes Life Science Alliance (LSA). RUP has already begun adopting many of the proposed measures of the draft policy, particularly a push towards requirement for relevant data and supplemental information to be made publicly accessible simultaneously with publications. This is being done through the actions of requiring the source code for all custom computational methods, the inclusion of accession numbers in manuscripts, and inclusion of robust linking to data available in public datasets. This will be further supported internally at RU via the library's forthcoming launch of DMPTool services as well as DOI minting services. Further specification is requested in the forthcoming policy regarding where NIH funded data will be housed and what will be done to facilitate or support connecting researchers to repositories. We recommend that NIH create a meta index of data repositories to act as a reference guide, better directing researchers to where their data would be most appropriately housed. Also requested is more explicit language in the official policy regarding publication of plans, with clear parameters of what will or will not be published along with the recommendation that consideration be given to modifiability, minability, and public accessibility of data management plans, and allowing the opportunity to link published articles to data management plans, which RUP stands ready to implement.
- **Compliance and Enforcement:** We propose designation of an individual available at each institution who is trained in how to structure and maintain adherence to good data

management under the new policy in addition to the proposed guidance by NIH provided during the regular reporting intervals (e.g. RPPR). This role would be given within Rockefeller to an individual able to act as a liaison between the NIH program officer and the head of the lab.

- **Supplemental – Allowable Costs:** We propose that the allowed costs be more flexible. As proposed, they will cover some established repositories, but internal infrastructural support is not adequately included. As we push for better data management practices, the cost behind these supported procedures must gain transparency as well, and the early consideration of infrastructural support – as well as acknowledgement of the importance and necessity of said support – needs to be considered fundamental to the formation of data management plans in grant applications. These are costs that exist regardless of how they are considered in the allocation of funding from a grant, making the inclusion of and transparency of infrastructural support costs in tandem with data management planning essential. Also, it is requested for consideration that a minimum cost towards publishing be provided to ensure this need be met by researchers without sacrificing quality of work.
- **Supplemental – Elements of a NIH Data Management and Sharing Plan:** Data management plans will still be largely freeform under the proposed policy. It is our suggestion that additional guidance be provided so that applicants and institutions have a clear sense of what is required from them in constructing a plan and what is useful to consider for good data management. An explicit template of required elements would be a useful resource in addition to the suggested elements provided in the supplemental material of the draft policy. While there are many advantages to a freeform approach, a more structured approach would help guide applicants towards creating more useful, sustainable, and consistent Data Management Plans. At RU, we are in the process of preparing for launch our own developed templates and guidelines via DMPTool and are prepared to coordinate these developments with the official policy from NIH and any associated materials for data management that may be provided. It should be noted that such tools have been developed by numerous institutions and are becoming increasingly standard, signifying that the trend should be met at NIH and the current materials from existing sources (e.g. Alfred P. Sloan Grant Application Guidelines) could be useful for consideration in the formation of similar resources. If provided by NIH, such resources could be more widely accessible than institution-specific guidelines. In the event that a researcher is performing research under multiple grants, it should be recommended that whichever data management plan required for each grant be the default chosen and be accepted as the plan for the NIH

application as well, rather than potentially requiring multiple formats of a data management plan to comply with varying requirements.

- **Other Considerations:** We consider it an oversight in the proposed draft that there is a focus on data without consideration of methodology. We believe methodology should be treated as data, and as such be standardized accordingly with the purpose of improving reproducibility. For consideration we offer the practice of Rockefeller University Press and their publications that there is no imposed limit on the length of materials and methods sections, supporting the underlying goal of optimizing reproducibility, in accordance with NIH's Principles and Guidelines for Reporting Preclinical Research. RUP journals are signatories of NIH's Principles and Guidelines for Reporting Preclinical Research. We also recommend the publication of methods in a ubiquitous and easily reproduced format, such as with Docker containers.

Author: Susan King, Matt Covey

Date: May 5th, 2020

To: Lisa Nichols, Assistant Director for Academic Engagement, OSTP,
publicaccess@ostp.eop.gov

Response to Request for Information – “Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research”

Rockefeller University is grateful for the opportunity to respond to this request for information.

The Rockefeller University is one of the world’s leading biomedical research universities and is dedicated to conducting innovative, high-quality research to improve the understanding of life for the benefit of humanity. Rockefeller’s 75 laboratories conduct research in neuroscience, immunology, biochemistry, genomics and many other areas, and a community of over 2,000 faculty, students, postdocs, technicians, clinicians and administrative personnel work on the university’s 16-acre Manhattan campus. Rockefeller’s unique approach to science has led to some of the world’s most revolutionary and transformative contributions to biology and medicine. During Rockefeller’s 119-year history, 25 Rockefeller scientists have won Nobel Prizes, 23 have won Albert Lasker Medical Research Awards and 20 have garnered the National Medal of Science, the highest science award given by the United States.

Rockefeller University Press publishes three hybrid journals, *Journal of Cell Biology (JCB)*, *Journal of Experimental Medicine (JEM)* and *Journal of General Physiology (JGP)*. Rockefeller University Press is a department of Rockefeller University.

JCB, *JEM* and *JGP* are community journals. Each covers a distinct segment of the biological and/or biomedical sciences, and editorial decisions rest with the active working researchers who serve as editors in collaboration with professional editors.

Since 2001, all research articles in *JCB*, *JEM*, and *JGP* have been made publicly and freely available from the journals’ websites no later than six months after close of the issue in which they are published, including the entire archive of articles dating back to volume 1, issue 1.

Since 2008, RUP authors retain copyright and are free to distribute their accepted manuscript or the article in the form and format as published by RUP including deposit to institutional and/or funder repositories.

All published articles are deposited in PubMed Central in XML and PDF formats; all articles are available in the PMC Open Access Subset for text and data mining.

Since 2017, RUP authors can opt for immediate Gold Open Access with a CC-BY license. The percentage of immediate open access articles published in *JCB*, *JEM* and *JGP* has increased, but tracks below 20%.

		2017	2018	2019
<i>JCB</i>	Immediate OA	35	47	43
	6-month embargoed OA	240	186	191
	Total articles	275	233	234
	% immediate OA	13%	20%	18%

<i>JEM</i>	Immediate OA	31	21	29
	6-month embargoed OA	191	148	161
	Total articles	222	169	190
	% immediate OA	14%	12%	15%
<i>JGP</i>	Immediate OA	5	3	8
	6-month embargoed OA	47	94	63
	Total articles	52	97	71
	% immediate OA	10%	3%	11%
Overall	Immediate OA	71	71	80
	6-month embargoed OA	478	428	415
	Total articles	549	499	495
	% immediate OA	13%	14%	16%

In response to the COVID-19 pandemic, RUP has made COVID-19/SARS-CoV-2 content freely available. RUP is a signatory to the [Wellcome statement](#) and the [OSTP-Wellcome statement](#) that commits *JCB*, *JEM*, and *JGP* to:

- make peer-reviewed research articles relevant to the outbreak freely available
- immediately share relevant research findings with the WHO with author knowledge upon journal submission
- recommend authors post relevant research findings to preprint servers, and share final published data as rapidly and widely as possible
- make coronavirus-related publications and the available data supporting them immediately accessible in PubMed Central (PMC). (RUP deposits all articles in PubMed Central (PMC) and archives in LOCKSS/CLOCKSS and Portico on behalf of authors.)

RUP elected to temporarily remove the subscription paywall on embargoed content in *JCB*, *JEM* and *JGP* until May 31, 2020, to assist researchers and institutions adjusting to working remotely. RUP is also rushing implementation of Open Athens, an institutional federated access service, in addition to the remote access capabilities already offered (VPN access, Affiliated user access, Universal CASA, Shibboleth, and country-wide IP addresses and Hinari: Research for Health).

More information on the proactive measures taken by RUP in response to the COVID-19 pandemic is available here <https://rupress.org/pages/response-covid-19-crisis>
Our responses to the questions posed follow.....

1. *What current limitations exist to the effective communication of research outputs (publications, data and code) and how might communications evolve to accelerate public access while advancing the quality of scientific research? What are the barriers to and opportunities for change?*

The primary barrier to the public accessibility of publications reporting on the results of research funded by the Federal Government would seem to be the lack of specific funds dedicated to immediate open access publication fees, as evidenced at RUP journals by the low percentage of

US authors who have opted for immediate open access compared to the high percentage of UK authors who have opted for immediate open access.

United States

	2017	2018	2019
Immediate OA	17	16	16
6-month embargoed OA	251	248	274
Total articles	268	264	290
% immediate OA	6%	6%	6%

United Kingdom

	2017	2018	2019
Immediate OA	38	26	28
6-month embargoed OA	14	6	9
Total articles	52	32	37
% immediate OA	73%	81%	76%

While the Federal Government allows for publication fees to be covered by grants, researchers must choose between publication fees and e.g. reagents, and manuscripts may be submitted for publication after the grant has been completed. In the UK, some but not all authors have been able to avail themselves of the Charity Open Access Fund (COAF), established by the six members of the Association of Medical Research Charities and awarded to UK universities and research institutes to meet open access publishing costs for original research papers arising from research funded by one or more of the COAF partner charities.

<https://wellcome.ac.uk/funding/guidance/open-access-guidance/how-get-open-access-funding>.

Anecdotally we have heard that some UK institutions may not have received sufficient COAF funds to cover all the immediate open access fees on behalf of their faculty and students. RUP anticipates further growth in the % of UK authors opting for OA under our new transitional “read and publish” open access agreement for UK higher education, which sets no limit to the number of articles published immediate OA from participating institutions. <https://rupress.org/pages/rup-signs-jisc-transitional-oa-agreement>.

A secondary consideration is the cost of publication for journals such as *JCB*, *JEM* and *JGP*, where editors use novelty and breadth of appeal as criteria to evaluate manuscript submissions and select journal content; and the cost of performing plagiarism and image screening of all editorially accepted manuscripts. The cost of publication at *JCB*, *JEM* and *JGP* to RUP is in excess of the journals’ current immediate open access APC of \$5000. EMBO Press has reported likewise <https://www.embo.org/news/articles/2019/the-publishing-costs-at-embo>.

Additionally, at the institutional level, resources beyond those currently allocated to universities would be necessary transition to open access, especially for research intensive institutions including RU as per the University of California Libraries’ [Pay It Forward Report](#).

A last immediate and, we hope, short-lived consideration is the impact of the COVID-19 pandemic on the opportunity for further consultation across all stakeholders to collaborate to meeting our collective goal of sustainable public access. Representatives from RUP and RU were not invited to attend the series of round table discussions convened by OSTP this past spring. RUP is a member of the Society for Scholarly Publishing. RUP is neither a member of the Association of American Publishers nor the STM Publishing Association.

2. *What more can Federal agencies do to make tax-payer funded research results, including peer-reviewed author manuscripts, data, and code funded by the Federal Government, freely and publicly accessible in a way that minimize delay, maximizes access, and enhances usability? How can the Federal Government engage wit other sectors to achieve these goals?*

For the advancement of the quality and integrity of scientific research, it is imperative that the final version of record be made publicly accessible, with all of the rich metadata tagging identifying funders, ORCiDs, CREDIT, and soon institutional IDs; and robust DOI or accession number linking to references and data deposited in publicly accessible databases, to enhance usability. RUP's in-house team of production editors screen, edit and applies all metadata tagging. RUP is a member of [CHORUS](#).

While NIH's efforts to digitize accepted peer-reviewed manuscripts has greatly expanded the corpus of publicly available, richly tagged journal articles, this has been achieved with an added administrative burden on researchers and institutions in ensuring deposit to PubMed Central; a redundancy of effort with publishers; and, incurred cost for the government. RUP deposits all articles published in *JCB*, *JEM* and *JGP* in PubMed Central in XML and PDF formats to minimize cost and effort for PubMed Central. RUP works with our vendors to enable immediate deposit to PubMed Central of articles where the author has elected open access articles. All other articles published in *JCB*, *JEM* and *JGP* are deposited to PubMed Central for embargoed release no later than 6 months after publication in an issue. From an institutional perspective, publisher deposit to PubMed Central on behalf of authors may not always be in sync with the requirements on awardees to self-deposit.

For comments on data, please see RU's response to NIH's RFI on data management and sharing (attached).

3. *How would American science leadership and American competitiveness benefit from immediate access to these resources? What are potential challenges and effective approaches for overcoming access to these resources? What are potential challenges and effective approaches and models, especially those that provide date, will be particularly helpful.*

Institutional subscriptions have ensured that American science leadership at research intensive universities like RU have had for the most part immediate access to articles reporting on US tax-payer funded research through direct subscription or interlibrary loan; and also, immediate access to articles from authors outside the US, even when working remotely as many are during the COVID-19 crisis.

Now the US private sector employs nearly as many PhD's as schools do <https://www.sciencemag.org/careers/2019/03/first-us-private-sector-employs-nearly-many-phds-schools-do>. The majority of the articles we publish are authored by researchers at universities and not for profit research institutes (and the publication fees are supported by their funder/institution), as opposed to privately owned companies. Historically, RUP's experience is that privately owned companies choose not to subscribe to JCB, JEM and JGP, outside of large pharmaceutical and biotechnology companies. Small start-ups seem especially unlikely to subscribe. Immediate open access would assuredly benefit this sector, in the US and worldwide, representing a significant investment by academia and the federal government in the private sector through their support for immediate open access publication fees.

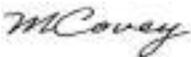
- 4. Any additional information that might be considered for Federal policies related to public access to peer-reviewed author manuscripts, data, and code resulting from federally supported research.*

In considering policies regarding public access to peer-reviewed scholarly publications, we respectfully ask that OSTP continue to uphold the freedom of scientists and physicians to choose the appropriate venue for the publication of their research findings and be mindful that any policy changes don't limit the diversity of publishers from commercial to society to university publishers like RUP who collectively support the research endeavor.

Thank you for the opportunity to submit these comments/



Susan King, PhD
Executive Director, Rockefeller University Press



Matt Covey, PhD
University Librarian, Rockefeller University



May 5, 2020

Dr. Kelvin K. Droegemeier
Director, Office of Science and Technology Policy
Eisenhower Executive Office Building
1650 Pennsylvania Avenue, NW
Washington, DC 20504

Response to OSTP Request for Information – FR Doc. 2020-06622 – “Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research”

Dear Dr. Droegemeier,

On behalf of the American Speech-Language-Hearing Association (ASHA), I write to express concerns about the Office of Science and Technology Policy (OSTP) potentially adopting a policy mandating the free distribution of peer-reviewed manuscripts earlier than one year after publication. These concerns are shared by many other professional associations and publishers.

ASHA is the national professional, scientific, and credentialing association for 211,000 members and affiliates who are audiologists; speech-language pathologists; speech, language, and hearing scientists; audiology and speech-language pathology support personnel; and students. ASHA began publishing a journal in 1936 and now publishes five journals that are preeminent sources of research informing the evidence base for the CSD professions. For the entirety of these journals' existence, they have been an essential benefit for our members and affiliates, and they have been able to have a presence in thousands of academic and other institutional libraries through subscriptions and subscription aggregations.

Our association supports the progress of science by producing and broadly disseminating the highest quality peer-reviewed journals possible. Indeed, it has been this sustained commitment for nearly 85 years that has helped fuel the growth of the entire category in which our research is primarily indexed. We have used our position to strengthen how research is conducted and reported, influence best practices in peer review, and maximize the discovery and knowledge translation of the important scientific discoveries that are the product of both funded and unfunded research.

In our view, it is professional societies like ASHA that are ideally situated to speed clinical implementation of treatments and techniques that our members and those in related disciplines are delivering every day in schools, rehabilitation hospitals, and many other settings. However, it is critical that these efforts take place within a framework that respects intellectual property rights and that does not hinder researchers from communicating their discoveries. Our investment in publishing research has been an asset drawn on in many areas of public health, from autism research to hearing aids, and now to delivery of services by our professionals both at hospitals and via telehealth amid the pandemic of Coronavirus Disease 2019.

As you are aware, federal agencies currently require that peer-reviewed manuscripts be made freely available online—within one year of publication—if they discuss research funded at least in part by a government grant.¹ That policy put in place in 2008 represents a significant compromise that balances our shared goals of providing broad access with the need for our organization to recoup the substantial investments we make in the peer-review, editing, publication, distribution, and long-term stewardship of this knowledge base. The one-year embargo compromise made then contrasts with the length of a full copyright term of life-of-the-author plus 70 years. Importantly, this compromise reflects Congress' guidance (in the authorizing legislation for the current policy) that the Administration must “take into consideration the role that scientific publishers play in the peer review process in ensuring the integrity of the record of scientific research, including the investments and added value that they make.”² Even with that in mind, we have since opted to make available the final, published version of federally funded research articles in PubMed Central after just a 6-month embargo so that we could better support the worldwide open science aims put forward by the Wellcome Trust and others.

Eliminating the current embargo period altogether would significantly jeopardize our organization's ability to invest in producing the high-quality peer-reviewed journals that our readers in the audiology, speech-language pathology, and related fields rely on. In so doing, such a policy would contravene Congress' clear guidance to take our role and investments into consideration. Furthermore, such a policy would directly result in a reduction in either the quantity or quality (or more likely, both) of peer-reviewed journal articles produced by hundreds of organizations like ours.

This would not only be harmful to the research enterprise, but also to the more than 40 million Americans with communication and related disorders who are the beneficiaries of the research published in the scholarly journals we produce. Collectively, disorders such as aphasia, language impairment, speech disorders, hearing loss, and dysphagia cost the United States an estimated \$154-186 billion annually.

¹These policies were developed pursuant to OSTP's requirement that agencies “shall use a twelve-month post-publication embargo period as a guideline for making research papers publicly available . . .” See OSTP Memorandum on “Increasing Access to the Results of Federally Funded Scientific Research” (Feb. 22, 2013).

² America COMPETES Reauthorization Act of 2010, Section 103(b)(9), *available at*: <https://www.congress.gov/111/plaws/publ358/PLAW-111publ358.pdf>.

We urge you not to disrupt our ability to support the advancement of research and patient care in communication sciences and disorders, and we look forward to working together to identify solutions that advance the goals of open science without undermining the communication of research findings and analyses through peer-reviewed journals.

We appreciate the opportunity to respond to this request for information, and we thank you in advance for your consideration of our comments. If you or your staff have any questions, please contact Jeffrey P. Regan, ASHA's director of government affairs and public policy, at jregan@asha.org

Sincerely,

A handwritten signature in cursive script that reads "Arlene A. Pietranton".

Arlene A. Pietranton, PhD, CAE
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Response to US RFI: [Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research](#)

Organization submitting response: [Research Software Alliance](#)

Authors: [Michelle Barker](#) (Director, ReSA)*, Daniel S. Katz (University of Illinois Urbana-Champaign), Neil P. Chue Hong (Director, Software Sustainability Institute - University of Edinburgh), Chris Mentzel (Stanford University), Karthik Ram (University of California, Berkeley), Catherine Jones (Science Technology Facilities Council), Andrew Treloar (Australian Research Data Commons) *Contact person

The Research Software Alliance (ReSA) welcomes this opportunity to inform approaches for ensuring broad public access to the peer-reviewed scholarly publications, data, and code that result from federally-funded scientific research.

This submission focuses on how improving the recognition and value of research software can increase the access to unclassified published research, digital scientific data, and code supported by the US Government. ReSA is the international organization representing the research software community. ReSA's vision is that research software be recognized and valued as a fundamental and vital component of research worldwide.

Research software is essential for research and is being more strongly recognized globally by researchers. The National Science Foundation (NSF) identifies software as “directly responsible for increased scientific productivity and significant enhancement of researchers’ capabilities” (NSF 2017). National and international policy changes are now needed to escalate this recognition and to increase the impact of the software and code in important research and policy areas.

Responses to the topics of interests identified in this Request for Information follow:

Topic 1: What current limitations exist to the effective communication of research outputs (publications, data, and code) and how might communications evolve to accelerate public access while advancing the quality of scientific research?

Effective communication of code (or more generally, software) as a critical research output remains limited. The recency of focus on this is demonstrated by the fact that the 2013 memorandum, *Increasing Access to the Results of Federally Funded Scientific Research*, and 2016 updates to this memorandum (Sheehan 2016) only mention data and publications; the reference to code has only come in the last few years. Yet the NSF made 18,592 awards totaling \$9.6 billion to projects that included software as a topic in their abstracts between 1995-2016 (Carver et al. 2018).

Increased access to software is a worthwhile aim in itself, but also requires a focus on software quality, software sustainability, training and human capital. Existing work already identifies recommendations that funding agencies and research institutions can

directly implement in areas such as this (Akhmerov et al. 2019; Clément-Fontaine et al. 2019). Other work makes recommendations directly to the research community on how to improve practice (Jiménez et al. 2017); National Information Standards Organization (NISO) has a [working group](#) developing standards for reproducibility badges. There are a number of areas where there are opportunities for change:

1. Software should be recognized as a primary output of research, not as secondary to a publication or data. This requires significant cultural change, supported by enabling policy and processes.
2. Software and code need to be funded and supported, alongside the people who create them. Employment practices need to evolve to ensure that people in the research sector with software expertise are appropriately rewarded and have long-term career paths.
3. Mechanisms are needed to evaluate software and code to promote publication, sustainability, and reuse, and the skillsets of those who develop it.
4. Software citation needs to become a standard practice, to ensure that publications give credit to all contributors and that the software can be accessed and reviewed as part of the review of the primary product. Achievement of this will require a significant change to journal/publisher policies and author culture.

ReSA coordinates work across these areas internationally, bringing together existing research software organizations to collaborate on larger strategic goals. This includes driving the development and adoption of community-agreed principles to increase findability and accessibility of research software through application of the FAIR (Findable, Accessible, Interoperable Reusable) principles (Research Data Alliance 2020b) and provision of advice on software practices to COVID-19 researchers through the [Software Subgroup](#) contributing to the *Research Data Alliance COVID-19 Guidelines and Recommendations* (Research Data Alliance 2020a).

The unprecedented impact of COVID-19 brings the need for increased access to, and communication of, all research outputs starkly to the fore. It is clear that the speed of response to COVID-19 depends on the breadth and speed at which research about COVID-19 develops and is shared. A key factor supporting this research is access to research data, software and code, to accelerate results whilst ensuring transparency and reproducibility of research results. And while there are good examples of where research outputs were already openly accessible at the start of this pandemic, there are too many examples where they were not - potentially causing life-threatening delays.

A May 2020 *Science* article calls for open sharing of COVID-19 modelling code so that the results can be replicated and evaluated (Barton et al. 2020). While the research community has been increasing access to key software and code, the Imperial College epidemic simulation model that is being utilized by government decision-makers

was not publicly available until 28 April 2020 (Carmack n.d.), with Microsoft working with the Imperial College team to enable this (Adam 2020).

Topic 2: What more can Federal agencies do to make tax-payer funded research results, including peer-reviewed author manuscripts, data, and code funded by the Federal Government, freely and publicly accessible in a way that minimizes delay, maximizes access, and enhances usability?

There are three types of national initiatives that can promote enhanced access to federally funded research outputs:

- National policies and strategies promoting open access to research outputs
- Network and collaborative initiatives aiming to facilitate open access
- Support for research infrastructure, including repositories and portals.

In the US, the majority of these initiatives focus on enhanced access to manuscripts and data. The recognition of the role of research software in research, the recognition of it as a reusable product, and the funding for it, specifically including for the ongoing maintenance of software initially developed with federal funding, have all failed to keep pace with the scale of use of software in research. A significant increase in focus on software and code is needed to accelerate improvements in this area, to increase return on investment on significant government funding.

To enhance accessibility, Federal Government should focus on the following:

1. Requiring publicly-funded software to be made as available as possible.
2. Supporting the public funding of both the development and maintenance of research software
3. Implementing measures to ensure that research institutions recognize the essential need for both software development and software maintenance and support the people who do this:
4. Including both software development and maintenance as measures of research output
5. Supporting the development of core software expertise through support of inclusive software skills and training programs, including facilitation of communities of practice:

The Federal Government should collaborate with a range of other stakeholders with a focus on increasing access to software and code, including international initiatives such as [Software Heritage](#) and the [Software Preservation Network](#) in the preservation of software source code; [The Carpentries](#) in the advanced training of researchers;

disciplinary initiatives, research institutions and collaborative initiatives. Relevant US organizations that work in related areas include the developing [US Research Software Sustainability Institute](#), which focuses on improving sustainability of research software; the [US Research Software Engineer Association](#), which brings together the US community of people writing and contributing to research software; and the [Academic Data Science Alliance](#), an independent national resource network that enables academic data science leaders, practitioners, and educators to connect and exchange ideas, and to advance the uptake of data science best practices in higher education.

Topic 3: How would American science leadership and American competitiveness benefit from immediate access to these resources?

The US has the opportunity to lead internationally in enabling accessibility of the knowledge, information and data generated by federally funded research, by increasing access to software and code. This will support research integrity, productivity, and efficiency.

Access to research software is crucial to maintaining research integrity, to maintain American science leadership's reputation for transparency and reproducibility. It is too often the case that research publications do not appropriately cite software and code, making reproducing this research challenging, if not impossible (Smith et al. 2016).

American competitiveness in the science field can also be enhanced by increased access to software and code, to attain productivity and efficiency benefits that will become possible when extensive re-use of software becomes the norm. Development of software repositories and archives actively supports reproducibility and re-use. NSF investments in repositories include the NSF SI2/CSSI Software Institutes, which includes work by the Science Gateway Community Institute (SGCI), the Molecular Sciences Software Institute (MoSSI), and the Institute for Research and Innovation in Software for High Energy Physics (IRIS-HEP) to increase reuse of gateways software infrastructure (Wilkins-Diehr et al. 2018), molecular sciences software (Krylov et al. 2018), and high energy physics software (The HEP Software Foundation et al. 2019), respectively. In light of this emphasis on reuse, it is essential that any new software proposed in future investment proposals be required to explain within the context of existing software why new work is required.

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5 May 2020

The Australasian Open Access Strategy Group ([AOASG](http://www.aoasg.org.au)) is writing to respond to the Request for Information from the Office of Science and Technology Policy (OSTP) concerning open access to U.S. federally funded peer-reviewed research.

Immediate open access to research is a global priority and the importance of ensuring such access has only been heightened in recent months as the world faces the current global health emergency.

The benefits of open access to research have now been documented repeatedly. Research that is open can be read and used more quickly and easily by other researchers. Open research can also be scrutinised more carefully by other researchers, leading to higher quality and more reproducible research. Finally, open research can be read by the general public, who are both financial contributors to and ultimate beneficiaries of research.

For more than 20 years funders, libraries, individual academics, research institutions and policy groups have proposed a range of initiatives for open access to research. Some of these initiatives are international and cross disciplinary such as [Plan S](#); others are specific to one country or to a specific research specialisation. Though each of these initiatives have a common goal, their long-term success or not is very much dependent on whether they can garner high-level, long-term support. Furthermore, the adoption of many of these initiatives has been held back since traditional subscription-based publishers have been largely unwilling to be proactive in investing time and resources in reworking their processes to support universal open access. It is clear that without strong national mandates and leadership from countries such as the U.S., the change to open research will only happen in a piecemeal and gradual way.

In Australia and New Zealand, several groups are active advocates for national approaches to open access. The main research funders in Australia, the Australian Research Council ([ARC](#)) and the National Health and Medical Research Council ([NHMRC](#)), have had open access policies since 2012/13; however, these policies only require access after 12 months. There are no nationwide policies in New Zealand.

We believe that were the U.S. to adopt a policy of immediate (no embargo) open access to federally funded research, this would be a key driver in the development of similar policies globally. We would therefore very much welcome the leadership of the U.S. government in adopting such a policy.

Thank you for your consideration of this important topic. We would be happy to address any questions.

Yours sincerely,

Dr Virginia Barbour
Director, Australasian Open Access Strategy Group

Martin Borchert
Chair, Australasian Open Access Strategy Group

Contact

email: eo@aoasg.org.au

web: <http://aoasg.org.au/>

FAO: Dr. Lisa Nichols, Assistant Director for Academic Engagement, OSTP

Sent by email to: publicaccess@ostp.eop.gov

Re: OSTP RFI on enhancing access to the outputs of Federally funded research

Dear Dr. Nichols,

Taylor & Francis is an international academic publisher, which provides more than 2,700 journals to researchers and scholars, and publishes over 5,000 new books each year, and we have a backlist of more than 120,000 book titles. During 2019, 65,000 US authors chose to publish over 30,000 research articles in our journals. We employ over 400 colleagues across the United States, including in Boca Raton, New York and Philadelphia. We publish 800 journals in the US, partnering with more than 150 American learned societies and associations.

We are entirely supportive of a public access policy for Federally funded research. We believe that Open Access has huge potential to provide the broadest possible access to research, and support OSTP's public access aim of advancing the quality of research especially in fields where immediacy is vital, for example in the natural sciences and medicine. We are supportive of a policy that increases the proportion of research outputs that are immediately available for any interested party to access, while ensuring that **adequate funding is in place to support their creation, dissemination and curation on an Open basis.** A quarter of US-authored articles that Taylor & Francis has published over the past three years are already openly available, and we will increase this proportion in a sustainable way and **support researchers to share more of their research faster, optimizing the dissemination and impact of quality research.**

We need a stable and predictable research funding model especially during this time of huge impact on the economic ecosystem (as referenced in the recent Congressional Research Service Report). We therefore urge OSTP to proceed in a thoughtful, staged and collaborative manner to build on the United States' research excellence, and to support the critically valuable service that publishers provide in partnership with learned societies and researchers to **substantiate and validate research knowledge.**

We have provided brief responses to your questions below. **Taylor & Francis is keen to engage with OSTP as policies are developed around these aims.** We will be sending a follow up letter to this RFI response, highlighting our experience in working with our partner [F1000Research](#) and offering an opportunity to share our practical insight **to ensure a successful public access policy for Federally funded research.**

Yours sincerely,



Caroline Sutton, Director of Open Research, Taylor & Francis Journals

Qu1. What current limitations exist to the effective communication of research outputs (publications, data, and code) and how might communications evolve to accelerate public access while advancing the quality of scientific research? What are the barriers to and opportunities for change?

In our view the key challenges around scholarly communication relate to: access to quality research outputs; the availability and distribution of funding for immediate access; rewards and incentives for researchers; and a focus on one aspect of the research cycle (publication) rather than the whole research cycle (or big picture). We outline each issue below and suggest ways that OSTP might address them.

Access to Quality Research Outputs Has Improved but Requires More Investment

Thanks to technological developments, we have the ability to access knowledge from almost anywhere in the world. Publishers have invested in moving resources online that were previously only available in print – indeed, [the Taylor & Francis platform](#) hosts over 4 million research outputs (and counting). We have invested significantly **in making research outputs findable**, from enriching content through tagging and metadata so it is no longer a flat paper-based artefact, to helping users access relevant content through search engine optimization. Our platform is in the top 500 sites visited in the US (Alexa ranking #428 on 28 February 2020).

Despite the successes thus far, more work is needed to ensure effective access routes and models to quality research outputs. This was shown in feedback to a 2019 Taylor & Francis researcher survey, where 88% of researchers agreed that there was value in anyone being able to access their research, but only 41% agreed that research was already available to those who needed access (Figure 1).



Figure 1: Researcher views on access to research ([T&F 2019 Researcher Survey](#))

We have been working to improve access through:

- Our Open vision: acquisition of leading open access (OA) publishers and platforms F1000Research, Co-action and Dove Medical Press; conversion of over 50 journals to a Gold-only OA model; encouragement of Open Research practices, such as the sharing of research data to [FAIR](#) principles through our [data sharing policy](#); investment of millions of dollars in developing article level workflows to support OA, including guiding researchers to compliant options and providing better information to institutions on their faculty’s output; creation of new models to help institutions shift their outputs to Open while retaining access to global content.

- Driving industry initiatives such as [GetFTR](#), which links searchers to the best version of an article, including open access content, and provides access options for those who do not have a subscription.
- Trialing an [eReader](#) on our platform that syncs content across devices, improves access to content, and also allows readers to share content with colleagues.
- Full support of the [NLM's Emergency Access Initiative](#) (EIA) and the Wellcome-coordinated initiative which supports the principles set out in the [2016 Statement on data sharing in public health emergencies](#).
- Our commitment to ensuring that the World Health Organization has rapid access to emerging findings that could aid the global response to public health emergencies. We have [reacted rapidly](#) to the Covid-19 crisis to make research outputs freely available and to support the LitCovid portal.

We also have been working to improve the [accessibility of content](#): offering a text to speech tool on our platform to support researchers with visual impairments; publishing material in fonts and formats that are more accessible to readers with learning difficulties, and so on. **We encourage OSTP to advocate not only access to, but accessibility of, content for all readers by supporting immediate access to the final published research output.**

Adequate Funding Is Needed to Ensure Quality

The openness of scholarly communication depends on funding for the fair payment of value added, so that we can continue to do our job of substantiating, valuing and validating knowledge. Now more than ever research outputs must be **trusted and reliable**. Publishers such as Taylor & Francis champion rigorous, quality assured content – continually reviewing and updating guidance to editors and researchers with respect to best practice in research conduct, ethics, peer review and publication. We also invest in tools and services to check for falsification of research findings, including image manipulation and plagiarism. This is not without cost.

Rewards and Incentives Should Align with Open Research Goals

Policymakers play a vital role in encouraging a change in research behavior – **through funding open research practices and incentivizing these behaviors**. Supporting more openness and sharing throughout the research cycle will improve the transparency, rigor, efficiency and hence quality of research and incentivizing and supporting researchers could help **retain academic talent in the US**.

OSTP Should Not Overlook the 'Big Picture'

To effect systemic change in research and publication culture, and to increase impact and relevancy of research, change must not just focus on the last stage of the research process (publishing) but **must encourage and support open research practices throughout the research cycle**, from publishing results sooner, to sharing more than just the final written narrative of the research endeavor. **OSTP should focus on the 'big picture' – incentivizing researchers to share and act openly at all stages of the research cycle (with relevant guidance and training), championing new forms of research output, and supporting creation of infrastructure to better connect funding to outcomes of research**. This will improve the effectiveness and efficiency of the entire research endeavor from grant to final publication.

Qu2. What more can Federal agencies do to make tax-payer funded research results, including peer-reviewed author manuscripts, data, and code funded by the Federal Government, freely and publicly accessible in a way that minimizes delay, maximizes access, and enhances usability? How can the Federal Government engage with other sectors to achieve these goals?

Access to, and the creation of, trusted and reliable knowledge is essential in these times. We are convinced that the current Open Access challenge is rooted in a funding flow issue, rather than a policy one. Publishers such as Taylor &

Francis serve the research community by providing services that are essential to the creation of trusted research outputs. These services include but are not limited to: editorial development (to ensure that journals continue to contribute to their fields and advance research); author and peer reviewer recruitment, training and support; support to learned societies; ongoing investment in technology and infrastructure; contribution to industry-level standards that improve quality and interlink the scholarly communication record; and long-term hosting and preservation. These services are essential to the advancement of quality research; with publishers acting as independent bodies, publishing research across all disciplines, from basic to applied research. **Without these services this trusted content would not exist.**

As publishers, we respond to both the market and our customers, and we can and will adapt to support the services our stakeholders need. This is our modus operandi and time and time again we have proven our ability to adapt quickly.

To *minimize delay*, we make content available earlier on in its life, including [working with Bioarxiv on a pilot](#) to make submissions to our journals openly available at point of submission (as preprints), and by supporting the early publication of Accepted Manuscripts. We also link to data, code and materials hosted in repositories and on sites such as Figshare. Furthermore, we are increasingly encouraging researchers to share material earlier on in their research process. **We recommend that OSTP focuses on the entire research cycle, and incentivizes researchers to share findings beyond those of the traditional final research output** (including but not limited to recognising a much broader range of outputs and activities including data and code, null/negative outputs, and peer review contributions).

To *maximize access*, we have **responded to funder priorities** and have grown an Open Access publishing model. It is a model we continue to invest in and believe in. From 2016 to 2019, we *more than doubled* the number of articles published on an Open Access basis. Globally, more than 13 percent of the articles we publish annually are now Open¹. In the US, too, our OA output has almost doubled from 2016 to 2019². Additionally, we make content widely available through the initiatives outlined in Q1, as well as: through open access; through [arrangements with developing countries](#) where access to content is free or heavily discounted; and by providing content to third party aggregators. We also offer Diamond Open Access options in partnership with societies and funders – allowing publication options to researchers without them bearing direct costs, reducing administrative effort and complexity for all stakeholders. We see embargoed Green OA as another means to open up access to content; however Green OA is not the means to achieve the long term transition to a more open research environment with immediate access to content as it is not a self-sustaining model (owing its existence to subscription-funded infrastructure and services).

Regarding usability, we offer Creative Commons licensing on our Gold OA content that clearly outlines how third parties can use research outputs. **Funding and resourcing from OSTP to make the final version of record of research outputs openly available will help to maximize usability of Federally funded research outputs.**

As noted above, opening up access should be allied with a focus on accessibility. As well as supporting the initiatives outlined above around ensuring formats are accessible to all readers, **we advise OSTP to incentivize and support accessibility in the form of public engagement activities.** We would be delighted to work with you in these efforts; we already work with [Sense about Science](#) to offer guidance to early career researchers on peer review, building their career and public engagement and created the popular [How Researchers Changed the World](#) podcast (14,000 listens) and learning programme (3,000 registrants).

Ultimately, excellence motivates us and our objective is to continually **increase the quality and integrity of the research that we publish.**

¹ 5.5% in 2016 to 13% in 2019; Global OA published article count was approx. 7,700 in 2016 and 17,100 in 2019

² US OA published article count was approx. 700 in 2016 and 1,400 in 2019

Qu3. How would American science leadership and American competitiveness benefit from immediate access to these resources? What are potential challenges and effective approaches for overcoming them? Analyses that weigh the trade-offs of different approaches and models, especially those that provide data, will be particularly helpful.

A robust landscape of American learned societies and research communities provide the foundation of American global leadership across all research disciplines. Working together, these groups, alongside universities, research funders, and research institutions, set the agendas in their respective disciplines, foster collaborations, and are major drivers of **research integrity, diversity, innovation, and economic success** for American researchers.

The publishing activities of learned societies are not only a highly visible platform to advance research progress through the dissemination of quality, peer-reviewed research, but also a tangible revenue-generating output to support critical general and discipline-specific activities and initiatives. We work closely with these communities, and we recognize the **importance of timely access to trusted research**. Timely access, however, cannot be rushed at the expense of quality.

We recognize and promote the fact that within this landscape of publishers of all types, learned societies, research communities, universities, and research institutions, must continue to innovate in their fields. With the revenues from publishing, research communities are already experimenting and developing new approaches to data sharing and open research (including preprint servers). **There is no global single approach for all disciplines** and a degree of flexibility must remain an essential part of a flourishing innovative research ecosystem.

Much of the development of scholarly communication has occurred within a **scientific ecosystem that is self-directed, self-regulating, and reflects a common understanding and collaborative approach around appropriate open data practices**. In the field of Earth and Space Sciences, for example, the American Geophysical Union (AGU) has successfully built a coalition of stakeholders (Coalition for Publishing Data in the Earth and Space Sciences, COPDESS) to develop open research standards through the [Enabling FAIR Data project](#). The AGU, publishers (including Taylor & Francis), learned societies, researchers, funders, institutions, repositories, and others are voluntarily working together to ensure that the research data underpinning tens of thousands of publications in these fields are openly shared according to common FAIR (Findable, Accessible, Interoperable and Re-usable) principles. Similar efforts to build standards as well as infrastructure to share research data are taking place across many disciplines through the [Research Data Alliance \(RDA\)](#), a worldwide grass roots community with over 10,000 participants. Research data and other outputs vary across research disciplines, hence the importance of co-creating FAIR standards and infrastructure to enable sharing with the involvement of relevant stakeholders. Notably, these efforts are taking place in the absence of mandates and as the result of collaboration at all levels from grassroots level, to top level policymakers within funders and institutions.

There are opportunities for the Federal government to play a role in supporting these communities and practices to develop further. Consider, the [National Science Foundation's Ten Big Ideas initiative](#) and its mission "to identify and support emerging opportunities for U.S. leadership." Through this effort, the NSF emphasized the promise of enhanced interdisciplinary and convergent research around the "grand challenges of today". This incentivizes researchers to merge ideas and build research teams from a wide range of fields. It "builds and supports creative partnerships and the creative thinking needed to address complex problems," partnerships across subject lines that may not have developed without the conditions created by an NSF grant. This approach can also deliver for open research through investing in pilots, further exploration of the research ecosystem, and other initiatives that incentivize stakeholders to come together and learn from the results. Publishers and learned societies also support the development of communities and research within a field; Taylor & Francis is more than happy to support OSTP in future pilots that build on this work.

To support this cross-stakeholder demand and innovation-fostered creativity, **Federal research policy mandates must provide for adequate and dependable funding for open access publishing models.** Without Federal support in place, innovation could be stymied as even greater disparities open up between disciplines and institutions, especially research-intensive institutions which may find costs rising in a fully Open world. **Policymaking must be considered and based upon consensus across stakeholders.** Careful planning, rather than a rushed move towards a more open research system avoids any unintended impacts on innovation for US researchers and research institutions. We understand that similar points have been raised by other stakeholders, including from members of Congress who have called for a clear process and stakeholder inputs to ensure that there is no negative fallout of any policy for American research, researchers or competitiveness. Given the current crisis in which we find ourselves, any change to a complex (and increasingly fragile) ecosystem must have support from all stakeholders.

Within many research disciplines, there is a strong drive for open research among all stakeholders already, but deeper analysis is required to understand where the funding will come from to support an infrastructure that ensures the continued high quality and integrity of the published results of Federally funded research. The trailblazing work of [F1000Research](#) ([recently added](#) to our portfolio) is rethinking research by combining the opportunities offered by technology with a passion for how research can be validated and shared. We are now able to address the challenges around Open Access and Open Research in a much more creative manner. **We, and our partner F1000Research, would be delighted to work with OSTP on pilot projects to investigate and develop best practice with regard to funding and implementation of a public access mandate.**

Qu4. Any additional information that might be considered for Federal policies related to public access to peer-reviewed author manuscripts, data, and code resulting from Federally supported research.

We recommend that OSTP revisit the [submission by STM](#) to their recent RFI on the Research Environment. In closing, we would reiterate our recommendations for OSTP:

- Ensure that **appropriate funding and funding flows** are in place to achieve policy aims
- **Support and training for researchers:** crucial in driving American research excellence and advancing the quality and reliability of research. This includes support and incentivization for open research behaviors – including credit for null / negative results, replication studies, sharing data, etc.
- Accessibility as well as access – achieved by supporting **immediate access to the validated, rich, trusted version of record.**
- Encouraging change **throughout the research cycle**, not just (at the point of) publication.

Ends

protocols.io

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Lenny Teytelman, Ph.D. – Chief Executive Officer
Emma Ganley, Ph.D. – Director of Strategic Initiatives

To whom it may concern:

At protocols.io, we welcome the opportunity to enthusiastically respond to this Request for Information on “Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting from Federally Funded Research” from the Office of Science and Technology Policy (OSTP). With a core mission at protocols.io to facilitate sharing of research methods before, during, and after publication, we see an important and relevant overlap with the OSTP and the NSTC Open Science subcommittee’s efforts to increase access to the results of Federally funded scientific research.

Comprehensive access to all research outputs can be difficult, even beyond the paywalled articles of subscription journals. The growth rate of open access continues to rise, but at a very slow rate so that the full impact of the open access movement has yet to be realized. Traditional publishing practices and processes have proven to be closed, blackbox systems and too slow to change to be truly effective, especially when compared to the potential new technology can provide. Funders, libraries and research institutions for the past 30 years have been creating policies and initiatives to nudge the system towards positive and lasting change. With increasing momentum (ex. [Plan S](#)) these stakeholders continue to adopt and adapt these policies as needed and have overall experienced that those imposing paywalls are often serving their own profit-driven interests that do not mirror the mission of the research community. Thus, this is an opportune time for the federal agencies to take the natural next step to further improve open access to research.

What current limitations exist to the effective communication of research outputs (publications, data, and code) and how might communication evolve to accelerate public access while advancing the quality of scientific research? What are the barriers to and opportunities for change?

Too much practical time is needed to switch from archaic systems built in the early 2000s and the benefits to the research community are caught in the traffic jam. Now is the time to bypass the obstacles and make research outputs widely available to leverage this knowledge to foster further inventions and innovations. We have the opportunity to utilize technologies to fix pain points and reimagine how research is disseminated, evaluated, and communicated. By reinforcing the research community’s commitment to sharing research

data and information and eliminating the obstacles that slow down progress, we can accelerate the development of new innovations for the world's most vulnerable populations. A major element of scientific research is the development and implementation of new and evolving methodological approaches. protocols.io is one available technological tool that can support faster access to research outputs; it is an online interdisciplinary open access repository for the development, storing, and publication of methods. It also functions as a collaborative tool that facilitates and captures the method development process when multiple scientists are involved.

Currently however, each research team takes different approaches to conducting, analysing, and disseminating research outputs, which leads to inconsistent data management and sharing. The "publish or perish" culture in academia is contributing to information overload and as research is traditionally published it is near impossible to leverage tools and technologies as a solution to cut through the noise or use machine capabilities to our advantage. This creates even more lag to interventions than the publishing process itself that at best for traditional models can take from 6 months to a year. This is a far cry from efficiency and ingenuity.

Here is a more specific example of this sort of current inefficiency:

- One key limitation to the effective communication of research outputs is when documentation of the outputs is left until the time of publication. This not only burdens researchers with an additional step when they are at the end of the process, it is also not an effective way to capture all of the relevant information. This approach introduces a redundancy into the process.
- When researchers are guided to make use of research collaboration and recording tools (like protocols.io), all details of the research process are captured simultaneously as the research is being conducted. That this same tool can be used to very easily publish the methodological details as the research is being written up addresses in an elegant way a key pain point for researchers today. The resulting step-by-step presentation of a scientific method, more as one would expect to see a recipe, is a far better suited presentation than a narrative text materials and methods block within a manuscript. As DOIs are obtained for published methods, the inclusion of this link within the literature ensures that the method is openly available regardless of any paywall that may exist for access to the article.
- Methods placed online in a tool like protocols.io are discoverable and citable independently from a published manuscript; this helps to recognise research outputs other than published articles and allows credit and to capture reuse of methods for those who developed the approach.
- But adoption of open research tools like protocols.io will only be fully taken up by the research community if researchers are required to implement them.

What more can Federal agencies do to make tax-payer funded research results, including peer-reviewed author manuscripts, data, and code funded by the Federal Government, freely and publicly accessible in a way that minimizes delay, maximizes access, and enhances usability? How can the Federal Government engage with other sectors to achieve these goals?

It is important to keep in mind that the challenges outlined above are all solvable issues - these barriers can be overcome with modern infrastructure, strong policies, and a desire to abandon the status quo. The biggest opportunity is to establish, promote, and enforce policy that moves the sector closer to removing these barriers to energize global collaboration to solve the world's greatest problems. Such opportunities are being lived out right now with the Coronavirus (COVID-19) outbreak changing how researchers communicate. Now is the time to embrace this change and place urgency on all issues recognizing "what is made clear in this moment of crisis: a robust scientific system and an informed citizenry requires immediate and public access to research".

The most wide-reaching action would be for the Federal agencies to enact and enforce a stronger (no embargo) open access mandate for all federally funded research. Setting such a policy and educating grantees on their options for compliance will prioritize the importance of open and available research outputs and highlight the time savings, breadth of access, and reusability. It will also inspire other US funders and institutions to follow the lead.

How would American science leadership and America competitiveness benefit from immediate access to these resources? What are potential challenges and effective approaches for overcoming them? Analyses that weigh the trade-offs of different approaches and models, especially those that provide data, will be particularly helpful.

This is a major opportunity for America to lead globally in a reimagining of the research dissemination. Our strong private industry, especially technology and pharma, is eager to have frictionless access and ability to build upon. Without the privileged access to subscriptions industry and pharma have either experienced a lack of information, use piracy or rely strictly on open access materials to inform their work which may provide only a partial view of a topic if other research is paywalled. In regard to the global research stage we do not want American industry to lag in or lack information that can provide a competitive advantage. In publishing quickly and openly American authors can establish themselves as leaders and remain competitive in the research space.

Any additional information that might be considered for Federal policies related to public access to peer-reviewed author manuscripts, data, and code resulting from federally supported research.

Engaging with the landscape of stakeholders will be vital to success. The position and leadership of the Federal Government is perfectly situated to unite other organizations who drive research advancement, such as other funders, institutions, and scientific societies.

These bodies represent the researchers themselves a key demographic to increasing research rigor and communication. Research is a worldwide enterprise and the Federal Government is positioned to work with experts and initiatives outside of the US. For example Canada recently released a [Roadmap for Open Science](#) and this is an opportunity for policy alignment and to learn best practices or learn from failures. Another example is [cOAlition S](#) “an international consortium of research funders [requiring] scientific publications that result from research funded by public grants must be published in compliant Open Access journals or platforms”.

Three main reasons we support a change in federal policy that advances open access to funded research:

- Can participate fully in the research community without barrier to knowledge and use these learning to test innovations and solutions that can better the world
- Bringing the research and knowledge dissemination into the 21st century and leverage it's insights to contribute to advancements that can change the world
- Be better stewards of research funding

Many patients, advocates, students and teachers, non-governmental organizations (NGOs), and citizens see the rumored change at the federal level as a natural progression of improving research communication and more broadly the world. It is important to consider the wide community support for change that was galvanized by this rumor. Letters and signatures of support include: [Nobel Prize Winners](#) (long time [advocates](#) of OA policies); U.S. Public Interest Research Group ([U.S. PIRG](#)); Coalition of Open Access Policy Institutions ([COAPI](#)); The Scholarly Publishing and Academic Resources Coalition ([SPARC](#)); Open Research Funders Group ([ORFG](#)); Marie Curie Alumni Association ([MCAA](#)); [Sociologists](#) in support of OA; Public Library of Science ([PLoS](#)); [#OAintheUSA Signatories](#).

Thank you for your time, consideration, and attention on this important topic. We would be happy to address any questions or information gaps.

ALPSP OSTP

6th May 2020

BY ELECTRONIC SUBMISSION

Dr. Kelvin K. Droegemeier

Director, Office of Science and Technology Policy

Eisenhower Executive Office Building

1650 Pennsylvania Avenue, NW

Washington, DC 20504

Response to OSTP Request for Information – FR Doc. 2020-06622 – “Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research”

Dear Dr Droegemeier,

The Copyright Committee (CC) of the Association of Learned and Professional Society Publishers (ALPSP) welcomes the opportunity to respond to this request for information and to engage in the dialogue on public access to federally funded research.

ALPSP is an international membership trade body that supports and represents not-for-profit organizations and institutions that publish scholarly and professional content. With nearly 300 members in 30 countries, membership also includes those that work with these publishers and societies. Its mission is to connect, inform, develop and represent the international scholarly and professional publishing community. ALPSP has publisher members across the United States of America, and its global members have authors and partners in every state, many of whom contribute to federally funded research.

Publishing is a fundamental part of the research process. Representing learned societies and not-for-profit publishers with communities across all disciplines, including science, medicine, humanities and social sciences, ALPSP is committed to facilitating researchers with the sharing of their work to allow the advancement of knowledge for the benefit of society.

Overall, ALPSP CC members are fully supportive of the need for public access to federally-funded research, and the current policy of a 12 month embargo on peer-reviewed federally funded research allows publishers and societies to recoup the substantial investments made in publishing peer-reviewed research. In addition, many publishers and societies already offer a gold open access option in many of their journals so that, on payment of an Article Publication Charge, to cover the publisher costs of peer reviewing and publishing the article, it is made free to read for everyone on publication.

Publishers and societies play an important part in the research workflow and support the infrastructure of scholarly communication; this includes, but is not limited to, management of the peer review process, typesetting, tagging for discovery and distribution, and ensuring the content is preserved for generations to come. Once the article is published, ALPSP membership organisations ensure that the most reliable Version of Record (VOR) will continue to be made available, with the relevant amendments, and – where necessary – retractions. All these elements form part of the scholarly communication process, which is maintained by learned and professional publishers. A zero-month embargo will need to be accompanied by an increase in funding for open access publication costs in order to support publishers' ability to continue to do this.

The United States has one of the most powerful and competitive research ecosystems in the world; publishers and societies have worked with researchers, universities, federal agencies, libraries and private companies for many years, collaborating to foster innovation in all sectors, including corporate

and academic. Any change to this ecosystem must not have the unintended consequence of constraining market choice. In particular society and community-led publishers which are a fundamental part of the research ecosystem and the economy.

Societies and publishers are constantly exploring ways of improving the research workflow and making it as efficient as possible. Some ALPSP members started working on making research available as early as is possible by developing or supporting preprint servers and platforms. These platforms will help to ensure public access to research even earlier in the research lifecycle. However, as the current COVID-19 crisis makes transparently clear: Who, if not publishers and learned societies, can curate the amount of papers and research published on preprint servers and ensure quality control through the review process? At the time of writing there are more than 6,000 papers available on preprint servers for COVID-19 alone, and the research communities are looking for the publishing community to work through this and quality control the amount of papers in step with the relevant community. This is a human intensive task which also provides jobs and employment.

All of these service developments require funding, and whilst there may be economies of scale, the financial burdens for small to large publishers and societies remain considerable. To introduce a zero-month embargo without increased funding for 'gold' open access would threaten the incentive to develop such innovations and would risk the quality and quantity of journals. Should some journals cease to exist, this would also profoundly impact author choice.

The crisis of COVID19 has highlighted the importance of sharing data in a safe and sustainable way; ALPSP members are committed to the FAIR principles on data; that is, that data should be findable, accessible, interoperable and reusable. Making research data FAIR increases the return value of public funding of research making more of the outputs of the research available and investment is needed to implement responsible data management. Many publishers and societies have additionally begun managing data on behalf of researchers, and depositing data into data repositories.

All ALPSP members are committed to ensuring public access for peer-reviewed research and fully supportive of the aims of open access, with membership including a number of fully open access publishers.

ALPSP CC feels that if all of the stakeholders in the workflow work together, a sustainable solution can be found that supports the OSTP's aims and represents all of the stakeholders' values.

North America's researchers collaborate across the country and across the world; they represent the nation's innovative spirit, and publishers and societies play an important part in communicating their research. ALPSP and its members are keen to collaborate with OSTP on exploring sustainable and creative solutions for public access to federally funded research.

Wayne Sime, Chief Executive

The Association of Learned and Professional Society Publishers

Egale 1, 80 St Albans Road, Watford, Hertfordshire, WD17 1DL (United Kingdom)

May 6, 2020

Lisa M. Nichols, Ph.D.
Assistant Director for Academic Engagement
Office of Science and Technology Policy
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1650 Pennsylvania Avenue
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VIA: publicaccess@ostp.eop.gov

RE: RFI Response: Public Access

Dear Dr. Nichols:

The American Association of Physicists in Medicine (AAPM)¹, is pleased to submit comments to the Office of Science and Technology Policy (OSTP) regarding its “Request for Information: Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting from Federally Funded Research” (RFI).

¹ The AAPM is the premier organization in medical physics, both in the U.S. and abroad. Medical physics is a scientific and professional discipline that uses physics principles to address a wide range of biological and medical needs. The mission of the AAPM is to advance medicine through excellence in the science, education and professional practice of medical physics. Currently, the AAPM represents over 9,000 medical physicists.

Medical physicists contribute to the effectiveness of medical imaging by ensuring the safe and effective use of various types of energy (e.g., optical, ionizing (x-ray, CT, nuclear medicine), ultrasonic, or radiofrequency (MRI)) to obtain detailed information about the form and function of the human body. Medical physicists continue to play a leading role in the development of novel imaging technologies, as well as in guiding the optimization of existing imaging modalities. In addition, medical physicists contribute to development of new therapeutic technologies in radiation oncology, as well as in other disciplines, such as in thermal ablation or high intensity focused ultrasound. Clinically, medical physicists work side by side with radiation oncologists to design treatment plans and monitor equipment and procedures to ensure that cancer patients receive the prescribed dose of radiation at the correct location. They also perform quality assurance tests on radiographic, fluoroscopic, CT, nuclear medicine, ultrasound, and MRI equipment to ensure the highest image quality at the lowest possible dose to the patient.

Background

In a report released in early 2010, the “Scholarly Publishing Roundtable,” a group of diverse stakeholders convened by the U.S. House Science and Technology Committee, provided recommendations on how to accomplish public access to federally funded research. After extensive review and interaction with affected stakeholders, the OSTP issued its current memorandum in February 2013 embracing recommendations of the roundtable and directing federal agencies to implement plans for public access to publications and data resulting from federally funded research. This resulted in the twelve-month post-publication embargo period.

The OSTP and National Science and Technology Council’s Subcommittee on Open Science are now exploring ways “to make the knowledge, information and data generated by federally funded research more readily accessible to students, clinicians, businesses, entrepreneurs, researchers, technologists, and the general public who support these investments as a means to accelerate knowledge and innovation.” This RFI seeks recommendations on approaches for ensuring broad public access to the peer-reviewed scholarly publications, data and code that result from federally funded scientific research.

General Comments

The AAPM believes this an important OSTP initiative, and we commend the OSTP’s efforts to engage stakeholders. The AAPM values transparency of scientific enquiry and accessibility of scientific results. We provide for your consideration our comments on specific areas identified in the RFI as follows:

Effective Communication /Accessibility

The scholarly publishing arena is rapidly evolving. Many academic peer-reviewed journals that began as independent initiatives of professional societies have been acquired by commercial publishers. Under the most common publishing model, taxpayers, foundations, and universities pay for research that universities, libraries, and others who want access to the results of that research then pay subscriptions or site license fees to publishers. This subscription income sustains the scholarly publication system, as well as the professional societies that publish journals. Scientific societies use revenue generated by their academic journals to support essential activities critical to scientific advancement. For example, the AAPM supports credentialing of graduate and post-graduate training pathways and sustains major initiatives to translate scientific discoveries into clinical practice via a wide array of consensus reports that have become world-wide de facto clinical practice standards. The current 12-month embargo period provides this revenue stream (through subscription fees and individual article sales) from published federally funded research for a period of 12 months from the date of publication; at the end of the embargo period, published articles from federally funded research become freely available to the public. If the embargo were set at zero (i.e., free access to these articles upon publication), this essential revenue stream would be eliminated – unless authors were instead charged to have their research published.

Adopting an open-access (OA) model, in which authors pay an article publication charge for the privilege of publishing a paper, is one approach for making published research immediately available to the public. However, providing public access to research papers arising from federally funded research by simply mandating OA publication, is not by itself a feasible solution. Shifting the costs from the readers to the authors could have many unintended consequences. Unless additional funds were appropriated for article publication charges, funds available to support the research itself would be reduced and/or U.S. publication productivity would decline. The subscription-based business models for journals that publish a substantive number of federally supported studies might no longer be viable, indirectly penalizing authors whose research is not federally funded.

There are significant costs associated with providing high quality scholarly communications. The AAPM believes there is still much work to be done to create an economically viable system for broader-access sharing of academic research through digital platforms. However, providing scholarly publications at no charge to everyone with access to the Internet, comes with real costs, requires sustainable funding to avoid disrupting the infrastructure for dissemination of scientific knowledge and the important role independent scientific societies play in organizing the research and STEM education enterprise.

Widening access to scientific results is complex because of the many stakeholders engaged in the communication of research results, including government agencies, researchers with and without public funding, universities, libraries, scientific societies, and commercial publishers. Scholarly publications depend on the contributions of publishers (e.g., coordinating peer review, formatting, assuring integrity of literature references and published content, infrastructure for dissemination, enhancing impact through topical grouping of content, curation of published content, archiving) and researchers (e.g., conducting research, writing research papers, and participating in peer review). While over the past two decades online access to journals has significantly increased, considerable work remains to be done in addressing all of the important concerns that the call for immediate open access has raised.

The AAPM recommends:

- Promotion of preprint servers such as <https://arxiv.org/> to get the science out quickly, followed by submission to a peer-reviewed journal for publication.
- Continuing the discussion around open access and academic publishing to advance a system that respects the intellectual contributions of scholars, needs of the public, and interests/contributions of both for- and non-profit academic publishers; and
- Adopting a thoughtful approach to changing the current policy and reforming academic publishing that allows flexible, pragmatic solutions to diverse stakeholders.

Immediate Access vs. 12-Month Embargo

The AAPM argues strongly against mandating a zero-embargo period. The current twelve-month embargo period provides the financial stability that enables professional societies and others to support services essential to the research community and to ensure the quality, integrity, and productivity of the research enterprise.

We believe that a transition to a zero-embargo mandate would take time to be done in a way that ensures sustainability without threatening the financial viability of professional societies and publishers—entities that contribute greatly to the quality and integrity of scholarly publications. Publishers need time to transition to funding models that can provide full open access while sustaining the ability to publish. Accordingly, we urge the OSTP to maintain the current twelve-month embargo and to continue engaging with stakeholders to collaboratively discuss models for publishing, curating, and archiving scientific results that are sustainable and that will achieve greater openness in scientific research. Forcing such a mandate upon the U.S. research enterprise without first forging and funding a consensus approach could have immediate deleterious and destabilizing impacts, including loss of valuable publication venues, disenfranchising non-federally funded scientific authors, jeopardizing the many useful contributions scientific societies make to the U.S. research enterprise, and reducing research productivity and competitiveness.

In summary, the AAPM notes that the complexity of the immediate accessibility of research papers and interdependence of the numerous stakeholders necessitate that a thoughtful and collaborative approach be taken to any changes to current policy.

We believe that reforming academic publishing to ensure that the public is provided access to results of federally funded research in a timely manner while also respecting the intellectual contributions of scholars, the needs of the public, the contributions of scientific societies, the needs of non-federally funded researchers, and the interests of academic publishers can be successful only if stakeholders take the time to create a sustainable path forward.

We urge the OSTP to maintain the current twelve-month embargo period, which affords our professional society and others the financial stability to support society initiatives that advance science.

The AAPM hopes that the OSTP will consider the AAPM's comments when crafting its policy. We would welcome the opportunity to engage with you and other stakeholders during this process. If you have any questions or require additional information, please contact Richard J. Martin, JD, Government Relations Project Manager, at 571-298-1227 or Richard@aapm.org.

Sincerely,

A handwritten signature in black ink that reads "M. Saiful Huq". The signature is written in a cursive style with a large, sweeping flourish at the end of the name.

**M. Saiful Huq, PhD, FAAPM, FInstP
President, AAPM**

Professor, Radiation Oncology
and Clinical and Translational Science
Director, Division of Medical Physics

Department of Radiation Oncology
UPMC Hillman Cancer Center
and University of Pittsburgh School of Medicine

National Center for Atmospheric Research
NCAR Library
1850 Table Mesa Drive
Boulder, CO 80305
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Response to:

**Request for Information: Public Access to Peer-Reviewed Scholarly Publications, Data and Code
Resulting from Federally Funded Research**

Submitted by the University Corporation for Atmospheric Research
May 2020

On behalf of the National Center for Atmospheric Research (NCAR) Library, we thank the OSTP for taking an interest in the issue of public access to scientific publications, data, and code, and for giving us and other stakeholders the opportunity to provide input on these topics.

For over 50 years, the National Center for Atmospheric Research (NCAR) has been devoted to service, research and education, supporting a global community of atmospheric and geoscience researchers. NCAR is a Federally Funded Research and Development Centers (FFRDC) funded by the NSF, and is managed by the University Corporation for Atmospheric Research (UCAR), a consortium of over 100 colleges and universities. UCAR and NCAR exist in large part to provide scientific facilities, such as aircraft and radar, supercomputers, computer models, and data, for use by individual researchers and other research institutions.

On the topics of this RFI, UCAR and NCAR instituted an open access procedure in 2009, requiring staff to provide copies of their peer-reviewed publications to the NCAR Library. This procedure is part of a larger UCAR “Publication and Information Dissemination” policy that states that “UCAR supports an open exchange of data and scholarly information derived from our research.” Regarding public access to research resources, the overall orientation of our organization aligns with the goals of the 2013 OSTP memorandum referenced in the RFI text.

Question #1: The challenges associated with communication, curation, distribution, and preservation of scholarly publications, data, and software have been extensively researched over the past few decades. It is not possible in this response to fully detail this literature, but a number of reports and summary articles provide overviews of the issues relevant to different types of resources (Altman et al 2018; Borgman 2012; Katz et al 2018). From a policy perspective, challenges range from basic conceptual difficulties to detailed implementation hurdles. On the conceptual end, defining what “data” and “software” mean in ways that are understandable to all of the applicable research communities is a fundamental challenge, as is defining what “open access” or “public access” mean in broadly meaningful ways (Pasquetto et al 2015; Pomerantz & Peek 2016). On the implementation end, the efficacy of common policy instruments, such as data management plans, is difficult to assess (Smale et al 2018). Common policy goals, such as ensuring that funded research demonstrates accountability and transparency, require ongoing effort and investment; there is also a need for different

enforcement mechanisms for different kinds of grants and different research communities (Mayernik 2017; Pasquetto 2019). Based on this body of research, we believe that one-size-fits-all policies are difficult to institute, and that funders will need to iteratively align their policies and implementation methods in response to community feedback.

Question #2:

The main issue we wish to draw attention to is that there are different challenges to meeting federal agency requirements for research grants awarded to individual PIs, versus larger grants and cooperative agreements awarded to organizations and collaborations. In particular, many federal funding agencies (including the NSF, NOAA, and NASA, among others) are asking grantees to submit information back to the agency about the publications and other resources produced via those grants. We note here some specific challenges related to this task, for Individual PI-based grants, and then for larger Cooperative Agreements and other similar collaborative awards.

- **Individual PIs** may lack awareness of public access policies, and they may struggle to find time to study and understand policy documents. As a result, their compliance with any policy requirements tends to be inconsistent. Federal agencies can make this easier for PIs by connecting any new requirements to already existing reporting mechanisms, e.g. annual grant reporting systems, and by unifying any mandated submission of information about papers, data, and code into a single system.
- **Cooperative Agreements and larger collaborative grants** face different obstacles. Awareness of the applicable policies can still be an issue, but a larger concern is collating and submitting information about a large number of papers, datasets, and software packages in a consistent and efficient way. As an example, for an NSF grant the current process to submit information about publications via an online form located on the Research.gov website. This is not a scalable method of information collection and data entry for cooperative agreements and other large grants, which may produce hundreds of peer-reviewed publications per year (over 700 per year in NCAR's case). To minimize this challenge, federal granting agencies should consider developing automated submission systems that allow for bulk uploading of information about large numbers of publications, datasets, and other resources. An automated, bulk upload capability would allow organizations such as ours to submit information about publications on behalf of researchers and staff. We feel this kind of capability would likely be useful for any medium and large sized federally-funded organization.

Question #3: Open data sharing and open publication of research results during the current COVID-19 emergency has dramatically accelerated the biomedical community's understanding of the virus itself, and its impacts on societies around the world. While this is an extraordinary and unforeseen situation, it clearly demonstrates the scientific and societal benefits of open data sharing and open access publication.

With this historic example in mind, we feel every consideration should be given to how to institute immediate and open sharing behaviors across scientific disciplines as the norm. Formal policies and standard guidance for research communities are best for establishing “open” as accepted best practice for the exchange of scientific information and research results.

For information or questions regarding this submission, contact:

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May 6, 2020

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RE: Request for Information: Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research

The American Society of Civil Engineers (ASCE) is pleased to have this opportunity to comment on the Office of Science and Technology Policy's (OSTP) request for information on public access to peer-reviewed scholarly publications. ASCE endorses the principle of providing public access and enhancing dissemination of federally funded research in ways that advance public health and safety and strengthen the global quality of life. ASCE would like to commend the Administration for seeking further input from the community before acting. We are concerned that proposed changes to the current rules that allow scientific societies to meet the needs of researchers and U.S. taxpayers, while funding programs to support the scientific enterprise to keep America a global leader in research and innovation could be in jeopardy.

It is ASCE's objective to advance the science and profession of engineering to enhance the welfare of humanity. As such, among its many endeavors, ASCE is the world's largest publisher of civil engineering information—producing more than 70,000 pages of technical content each year. The ASCE Publications Division produces 34 professional journals, conference proceedings, standards, manuals of practice, technical reports, and monographs under the ASCE Press imprint. Its many other resources for practicing civil engineers include the 280,000-entry Civil Engineering Database, and the ASCE Library (ascelibrary.org), providing online access to over a million pages of journal articles and proceedings.

ASCE firmly believes that it is essential to preserve the scholarly value of the peer-reviewed version of record, which is fixed at its time of presentation without any possibility of historical rewriting - that the original work cannot be altered by the author or anyone else. ASCE further believes that learned societies, acting in accordance with their educational mission, should be able to recover their costs of investing in managing the peer review process, editing, publishing, disseminating, and maintaining an ever-growing archive in perpetuity.

Like other engineering and scientific societies, ASCE fulfills its role in the advancement of engineering by determining through the peer-review process what is worthy of publication. The "value-added" by peer review is to ensure published work is of top quality. This process allows the results to be used more effectively by scientists, decision makers, students, and other concerned constituents.

ASCE supports OSTP's mission to accelerate the dissemination of research results that are federally funded. A survey of resource needs of Civil and Environmental Engineers, conducted by ITHAK S+R and funded by ASCE, found that researchers continue to struggle with data sharing (<https://sr.ithaka.org/publications/supporting-the-changing-research-practices-of-civil-and-environmental-engineering-scholars/>). In order to encourage better data sharing among civil engineers, ASCE journals now require a data, code, and model availability statement for all papers published. Further, two journals have introduced Data Papers and another journal is moving toward encouraging replication studies.

As the GOA report emphasized, data sharing is not standard across US Federal Agencies (<https://www.gao.gov/assets/710/702847.pdf>). ASCE supports working with those researchers and agencies to develop standards for data, code, and model sharing and supports properly citing and recording the use of data. ASCE believes that FAIR Data Principles should be taught, encouraged, and applied to all research conducted.

To date, civil engineers have been reluctant to adopt open access publishing, particularly under APC models. Researchers in this discipline have also not adopted preprint practices. Again from the ITHAKA study, researchers reported their concerns for releasing technical information that has not been peer reviewed. They are also slow to cite new information, with the average peak citation being at 4.8 years, significantly longer than many other disciplines. Concerns for protecting public health and safety remains critical.

ASCE requests that the Administration study the disciplinary differences and encourage the engagement of societies, publishers, researchers, and agencies to develop specific roadmaps to meet the goals of OSTP while respecting the culture and practices of each discipline. To that end, we stand ready to work with all interested parties in a forward looking and constructive manner.

In conclusion, ASCE supports an approach that balances the goals of public access with the real-world value and costs of scholarly publishing. The goal should be to encourage the free flow of information while maintaining the "value-added" of peer review to ensure published work is of top quality. The current process allows the results to be used more effectively by scientists, decision makers, students, and other concerned constituents. Changes to the current system may have far-reaching implications to the quality and validity of scholarly publishing. That said, ASCE sees improvements to accessing data, code, and models and would welcome being a collaborator on reaching those goals.

If you have any questions, or if ASCE can be of further assistance, please do not hesitate to contact Martin Hight, ASCE's Senior Manager of Government Relations at mhight@asce.org or 202-789-7843.



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May 6, 2020

BY ELECTRONIC SUBMISSION

Response to OSTP Request for Information – 85 FR 17907– which extends the comment period for the request for information published February 19, 2020, at 85 FR 9488

The American College of Gastroenterology (ACG) appreciates the opportunity to provide comment to the request for information (RFI) from the Office of Science and Technology Policy (OSTP) and the National Science and Technology Council's (NSTC) Subcommittee on Open Science (SOS), published at 85 FR 17907.

ACG is a physician organization representing gastroenterologists and other gastrointestinal (GI) specialists. Founded in 1932, our organization represents over 15,000 members providing gastroenterology specialty care. The primary activities of ACG are promoting evidence-based medicine and optimizing the quality of patient care, in part through ACG's scientific publications. *The American Journal of Gastroenterology* is the premier clinical journal in gastroenterology and hepatology, providing practical and professional support for the GI clinician. ACG's *Clinical and Translational Gastroenterology* is a peer-reviewed open access online journal dedicated to innovative clinical work in the field of gastroenterology and hepatology. The *ACG Case Reports Journal* is another open-access online journal publishing gastroenterology and hepatology case reports.

Background

On February 22, 2013, OSTP issued [a memorandum](#) for the heads of executive departments and agencies titled "Increasing Access to the Results of Federally Funded Scientific Research." The OSTP memo directed each federal agency with more than \$100 million in annual research and development expenditures to develop a plan to support increased public access to the results of federally funded research, in particular publications and data. OSTP memo notes that public access to federally funded research results must be consistent with law and policy; agency mission; resource constraints; and U.S. national, homeland, and economic security. Each agency plan must ensure public access to publications within an appropriate time frame, generally within 1 year of publication. Additionally, the OSTP memo requires agencies' public access plans to maximize access, by the general public and without charge to digitally formatted scientific data created with federal funds, while also: (1) protecting confidentiality and personal privacy; (2) recognizing proprietary interests, business confidential information, and intellectual property rights, and avoiding significant negative impacts on intellectual property rights, innovation, and U.S. competitiveness; and (3) preserving the balance between the relative value of long-term preservation and access, and the associated cost and administrative burden.

The 2013 memorandum also cited among its objectives: "The Administration also recognizes that publishers provide valuable services, including the coordination of peer review, that are essential for ensuring the high quality and integrity of many scholarly publications. It is critical that these services continue to be made available."

OSTP Request for Information

Among the questions posed in this RFI, OSTP seeks information on “how would American science leadership and American competitiveness benefit from immediate access to these resources? What are potential challenges and effective approaches for overcoming them?”

The current policy of providing public access to studies within 1 year of publication strikes a balance between public access and commercial interests. This policy should not be changed. ACG does not believe immediate access would improve American competitiveness. Rather, this policy would in fact be counter the OSTP mission of “recognizing proprietary interests, business confidential information, and intellectual property rights, and avoiding significant negative impacts on intellectual property rights, innovation, and U.S. competitiveness.” There are clearly economic and human resource costs borne by scientific organizations and publishers of innovative peer-reviewed scientific journals. The federal government helped fund the study; not the peer-review process, the editing, publication, and distribution of the study. ACG appreciates that OSTP recognizes the value publishers have in ensuring the high quality and integrity of many scholarly publications. This was also mandated by Congress when it provided the regulatory authority to develop this policy.¹ The RFI also cites the November 2019 Government Accountability Office Report “[FEDERAL RESEARCH: Additional Actions Needed to Improve Public Access to Research Results](#).” In finding that some federal agencies have been deficient on facilitating public access to data and developing compliance mechanisms, GAO noted as positive examples of increasing public access to data other agencies’ agreements with the publishers in which publishers have agreed to make federally funded publications publicly available *a year after publication*. Of note, the GAO did not recommend immediate public access to these studies.

ACG welcomes the opportunity to work with federal agencies in developing a partnership where federally funded research is made publicly available within a year publication. Should you have any questions regarding our comments, please do not hesitate to reach out to Brad Conway, Vice President of Public Policy, Coverage & Reimbursement, at BConway@gi.org or 301.263.9000.

Sincerely,



Mark B. Pochapin, MD, FACG
President
American College of Gastroenterology

¹ America COMPETES Reauthorization Act of 2010, Section 103(b)(9), *available at*: <https://www.congress.gov/111/plaws/publ358/PLAW-111publ358.pdf>.



Society for Industrial and Applied Mathematics

Response to Office of Science and Technology Policy RFI

May 6, 2020

SIAM (Society for Industrial and Applied Mathematics) welcomes the opportunity to respond to the Office of Science and Technology Policy's Request for Information on "Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research" dated February 12, 2020.

SIAM is an international community of 14,500+ individual members. Around 500 academic, manufacturing, research and development, service and consulting organizations, government, and military organizations worldwide are institutional members. Incorporated in 1952 as a nonprofit organization, SIAM fosters the development of applied mathematical and computational methodologies needed in various application areas. Applied mathematics, in partnership with computational science, is essential in solving many real-world problems. Through publications, research and community, the mission of SIAM is to build cooperation between mathematics and the worlds of science and technology.

SIAM supports a sustainable transition to full Open Access and applauds OSTP's self-archiving open access approach implemented by the 2013 memorandum *Increasing Access to the Results of Federally Funded Scientific Research*. This current policy of requiring federally funded accepted manuscripts to be made openly accessible 12 months after publication has balanced the goal of more openness with a financial sustainability that safeguards quality, accuracy and trust – key principles that should remain paramount as scholarly research impacts nearly every aspect of our lives.

For more than 25 years mathematics has had an open culture of posting pre-publication manuscript versions ("preprints") to the arXiv (an open-access online repository in mathematics, physics and computer science), enabling researchers to share findings and ideas. And yet submissions to SIAM journals continue to hit all-time highs. Why is this?

The answer is researchers and their institutions still look to definitive, peer-reviewed, copyedited and corrected content as the reliable basis for further developing their own research. Researchers know that any article published by SIAM has been through a rigorous vetting process run by editors, peer reviewers and our extensive production processes. Authors know they can reach their peers globally via a trusted and reputable outlet. Readers know that they are accessing cutting-edge research they can trust. Innovation can only succeed with that firm foundation of trust and reliability on which to build new ideas. In the end, a journal is not just a collection of articles – it is a community of people working together to further a field of inquiry. And any community needs trust to function.

It is therefore vital for the advancement of knowledge that such journals and communities are financed in a sustainable way. Up to now this has primarily been via the subscription model. SIAM is open to new models but these must pass the test of safeguarding accuracy and trust in scholarly information over the long term. SIAM here offers some feedback on the impact of open access mandates.



[Author self-archives article in an online repository \(“Green open access”\)](#)

The OSTP is considering revising the 2013 memorandum to reduce the time authors have to self-archive their federally funded accepted manuscripts in an online repository from 12 months after publication to zero months. SIAM wishes to strongly highlight some of the unintended consequences that could flow from such a policy change.

With the current 12-month time limit, libraries continue to subscribe in order for their researchers to access the latest content vetted, copyedited and published by SIAM. Under a zero-month time limit, a large proportion of SIAM content would become immediately available and this would increase the likelihood of subscription cancellations. This decline in revenue would in turn risk the financial sustainability of SIAM journals and mean SIAM production, publishing and technology services would have to be downgraded, leading to an inevitable decline in quality and rigor. Such a decline would only have negative consequences for researchers, both as authors and readers.

In an attempt to arrest such a downward spiral SIAM, like many scholarly societies, would have to consider ceasing to be an independent society publisher and instead outsource its publishing to one of the large commercial publishers. The market power of such large commercial publishers would then only continue to increase – to the detriment of independent society publishing – and would likely involve a further deterioration in the quality standards that SIAM has set for decades. One of the ironies of the new open access models and transformative agreements is that they will likely further increase the market lock-in of large commercial publishers – these are the publishers that can publish at volume with economies of scale, while nonprofit society publishers such as SIAM that focus on selectivity and quality would be punished and eventually eliminated and subsumed.

There is a not insubstantial risk that a mandate to force authors to self-archive immediately upon publication could undermine the financial sustainability of SIAM journals – and therefore undermine the ongoing sustainability of self-archiving open access itself. Self-archiving open access is likely the most cost-effective way for OSTP to achieve open access for federally funded research – but it relies on the sustainable health of the subscription model. This is why SIAM continues to support the current OSTP policy mandating authors self-archive 12 months after publication.

[Author or funder pays to cover open access costs \(“Gold open access”\)](#)

An alternative route could be to provide authors with federal funding that would allow them to pay for open access costs in reputable outlets such as SIAM journals. However, it is worth noting that traditionally grants in mathematics tend not to be sufficient to also cover publication costs. If this situation were to change and authors received sufficient funding to pay open access costs, this could be a mechanism for expanding immediate open access.

While SIAM has offered a paid open access option to authors for a number of years, it is striking that take-up among authors globally has been weak. This suggests that a mathematics journal only publishing open access content paid for by authors or funders would struggle to be sustainable over the long term unless open access funding in mathematics is increased by funders.

Furthermore, given the wide availability of preprints on the arXiv and the long “shelf-life” of mathematics content, authors and funders may question whether funds should be diverted from research to funding open access publication costs just to achieve immediate open access instead of availability after 12 months.



[Access to digital scientific data and code](#)

SIAM authors are encouraged to submit Supplementary Materials to complement their articles. Such Supplementary Materials are made freely available to all and include data sets used in the paper, computer code used to generate figures or tables, additional figures or examples, animations, or other materials that are necessary to fully document the research contained in the paper or to facilitate the readers' ability to understand and extend the work.

Furthermore, SIAM is experimenting with new formats that allow for open sharing and use of data. For example, SIAM is publishing a book in 2020 both as a Jupyter Notebook and a print edition. While the financial sustainability of such models is to be determined, SIAM has been and will remain open to piloting new ways to facilitate open data sharing.

SIAM would therefore support an OSTP policy to mandate or strongly encourage open data sharing for federally funded papers (where data can be shared without revealing personally identifiable information or violating software copyright).

[Artificial Intelligence & Machine Learning access to scientific content](#)

Over time an increasing proportion of scholarly content will initially be read by machines, rather than people. As a nonprofit society focused exclusively on applied mathematics, computational science and data science, SIAM supports the growing use and efficacy of artificial intelligence and machine learning to uncover new findings in scholarly research and accelerate the pace of innovation. SIAM already permits gratis text and data mining rights for noncommercial use to its academic subscribers. SIAM is open to further exploring how such text and data mining access could be expanded in a financially sustainable way to widen the application of artificial intelligence and machine learning in scholarly research.

[American science leadership and American competitiveness](#)

It is noteworthy that the OSTP RFI asks the question "How would American science leadership and American competitiveness benefit from immediate access to these resources?" Science today is of course a global endeavor, with many research collaborations across countries and cultures. However, there is undeniably a geopolitical aspect as to how countries are gaining access to research and increasing their global influence.

SIAM observes that a mandate forcing authors to make their US federally funded research open access immediately upon publication, if implemented, would strategically be a scholarly gift from the United States of America to the world if such a policy is not reciprocated. For example, while researchers in China would be able to read all US federally funded research immediately and build on it for their research, US-based researchers would not be able to read all of Chinese research immediately – unless such an open access policy is adopted in China. It is far from certain that China would reciprocate this generosity. This scenario would therefore show American science leadership in terms of openness, but could actually reduce American competitiveness. However, it is also true to say that immediate global access to US federally funded research could lead to the quicker integration and adoption of American ideas into other research around the world.



SIAM supports sustainable open access and the global exchange of ideas. But if the OSTP is focused on the particular perspective of “American science leadership and American competitiveness” then an immediate open access policy could have debatable success as to the latter.

Closing remarks

SIAM has always adopted liberal self-archiving open access policies and will continue to experiment with new open access models, including paid open access. Our mission is to build cooperation between mathematics and the worlds of science and technology – and ultimately to solve real-world problems. Open access serves that goal as long as it is implemented in a financially sustainable way that will enable SIAM to continue to provide a community for applied mathematicians, computer scientists and data scientists – and it is in this spirit that we offer this submission to the OSTP RFI.

In closing, we would like to share some comments made by Bernd Sturmfels, Professor of Mathematics and Computer Science at the University of California, Berkeley, Director of the Max Planck Institute for Mathematics in the Sciences and Editor-in-Chief of *SIAM Journal on Applied Algebra and Geometry*. The comments below summarize the key role that SIAM journals play in the field and the importance of their sustainability to the scholarly enterprise –

My students and postdocs often ask me why we have journals at all. Why don't we just post our work on the arXiv and communicate through online media like blogs or Facebook? My own view is that journals and books represent communities of people. High-quality publications, such as those produced by SIAM, are essential in maintaining the tradition and strength of mathematical sciences, in putting a focus on truth and reproducibility, and in advancing new ideas. And, there is no free lunch. Scholarly publishing costs money, but if it is in the hands of scholars rather than predators then it is money well spent.

SIAM is a very inclusive and open-minded society, willing to take chances and to accept new ideas. The association with SIAM has given a lot of credibility to young scholars in my areas of expertise, and has indirectly helped them in the job market. SIAM as a publisher is an excellent operation that has been supportive and helpful to me, and to all of us.

We hope OSTP recognizes the key role that SIAM – and other independent scholarly societies – play in the research ecosystem and will continue to ensure that any federal open access policies successfully balance openness with long-term, financial sustainability. SIAM looks forward to further dialog with OSTP and of course welcomes any questions or comments.

From: Bill Kidder <bill.kidder@perteet.com>

Sent: Wednesday, May 6, 2020 11:57 PM

To: MBX OSTP Public Access <MBX.OSTP.PublicAccess@ostp.eop.gov>

Subject: [EXTERNAL] 85 CFR 17907; FR Doc. 2020-06622 - Public Access to Federally Funded Research

Hello OSTP Representative,

Thank you for requesting public comment regarding improvements to the distribution and public access of federally funded scholarly research publications and data. As a professional consultant working in the application of science, I rely of federally funded scholarly research to provide the timely best available science on a range of topics related to water quality research, ecosystems and its constituent parts, environmental modeling, and resource economics. All too often I am turned away from obtaining federally funded research because the recent scholarly article of interest resides with one of the major peer-reviewed journal publishers that require the public to pay the publisher for publicly funded research. A free-to-access federally managed program similar to the the U.S. government's Federal Register should be constructed to distribute federally funded scholarly research as well as agency funded non-scholarly research.

Thank you for giving the public opportunity to comment on means for the public to access federally funded research without using the major journal publishers.

Bill Kidder
Lead Ecologist

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May 4, 2020

BY ELECTRONIC SUBMISSION

Dr. Kelvin K. Droegemeier
Director, Office of Science and Technology Policy
Eisenhower Executive Office Building
1650 Pennsylvania Avenue, NW
Washington, DC 20504

Response to OSTP Request for Information – FR Doc. 2020-06622 – “Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research”

Dear Dr. Droegemeier,

Diabetes Technology Society (DTS) is pleased to have an opportunity to respond to this request for information. We are a non-profit educational organization. I am the President of DTS and the Editor-in-Chief of Journal of Diabetes Science and Technology (JDST). I am writing to advocate against a proposed policy by OSTP to mandate free distribution of peer-reviewed manuscripts after less than one year following publication.

JDST is the official journal of the DTS organization. The journal is 13 years old. It is peer reviewed and is on the National Library of Medicine PubMed database. DTS was founded as a nonprofit organization in 2001. We present educational meetings for scientists and clinicians to support our mission of promoting science and engineering to help people with diabetes. Our meetings attract approximately 800 attendees each year. We work closely with the US FDA and have led many initiatives (working with the FDA) to create standards for new technologies. We developed the first cybersecurity standard for any type of medical device – ours was for diabetes devices that are wearable or implanted. Our journal is the main scholarly journal of the scientific and clinical diabetes technology community that is working in the field of sensors, insulin delivery systems, artificial pancreas, regulation, and digital health for diabetes devices. Our readers come from academia, industry, and government. Since 2001, these three groups have worked together with our nonprofit and our journal to advance the field of diabetes technology.

DTS has taken the lead in developing standards for continuous glucose monitoring in the outpatient and inpatient setting (both technical and clinical standards), as well as for diabetes device cybersecurity. We worked with the FDA last year to expand the number of medical instrument options to use as a reference method for testing products that measure blood glucose. DTS supports high quality science and engineering by publishing JDST. We spend a lot of time soliciting novel articles, as well reviewing, editing, and posting them through a peer review

process. We offer many of our recent articles to be free for distribution when we can, but not all of them.

DTS believes in scholarly communication occurring with our journal, JDST, as well as other peer-reviewed journals. We also believe that it is critical for the survival of our journal that our scholarly efforts take place in a setting where we can be paid for our efforts. An open access system, with articles being free after less than a year will hurt subscriptions, and we will not be able to compensate for lost revenue. If JDST goes out of business, then that will result in fewer opportunities for scientists to communicate their work to the diabetes technology community.

We have an issue of JDST coming out in July 2020 that will be completely devoted to diabetes and COVID-19. This type of issue (which will be the first set of articles on this topic in any medical journal) and the journal itself will not be viable if the proposed OSTP initiative is implemented.

As you may be aware, JDST already adheres to a current compromise plan to make peer-reviewed articles freely available. Federal agencies currently require that peer-reviewed manuscripts be made freely available online within one year of publication if they discuss research that was funded at least in part by a government grant.

Reducing or eliminating the current one-year embargo would significantly jeopardize our organization's ability to invest in producing the high-quality peer-reviewed articles that our readers in the diabetes technology community rely on. If our current default one-year embargo policy is no longer possible, then we would probably have to sustain significant cutbacks in subscription revenue that would not be overcome with per author charges. Since our work is intended to promote better technologies for patients, then this contemplated OSTP policy would end up harming patients with diabetes.

Please do not tamper with our journal's livelihood so JDST can remain viable and continue to support science and engineering by publishing peer-reviewed research to help people with diabetes.

Sincerely,



David C. Klonoff, M.D., FACP, FRCP (Edin), Fellow AIMBE
President, Diabetes Technology Society
Editor-in-Chief, Journal of Diabetes Science and Technology
Clinical Professor of Medicine, UCSF

April 22, 2020

BY ELECTRONIC SUBMISSION

Dr. Kelvin K. Droegemeier
Director, Office of Science and Technology Policy
Eisenhower Executive Office Building
1650 Pennsylvania Avenue, NW
Washington, DC 20504

Response to OSTP Request for Information – FR Doc. 2020-06622 – “Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research”

Dear Dr. Droegemeier,

The American Society for Radiation Oncology (ASTRO) is grateful for the opportunity to respond to this request for information. In particular, we write to caution OSTP against adopting a policy mandating the free distribution of federally funded, peer-reviewed manuscripts earlier than one year after publication.

ASTRO is the premier radiation oncology society in the world, with more than 10,000 members who are physicians, nurses, biologists, physicists, radiation therapists, dosimetrists and other health care professionals who specialize in treating patients with radiation therapies. In collaboration with Elsevier, ASTRO members and staff oversee the publication of three major scientific journals: *International Journal of Radiation Oncology • Biology • Physics*, *Practical Radiation Oncology*, and *Advances in Radiation Oncology* (a Gold Open Access journal). Collectively, these journals see thousands of submissions each year.

Ultimately, we strive to support the progress of science by producing and broadly disseminating the highest quality peer-reviewed journals possible. Publishers and societies have worked to strengthen scholarly communication and promote open science. Last year, ASTRO began requiring data availability statements for all scientific articles, and has been actively promoting data sharing. However, it is critical that these efforts take place within a framework that respects intellectual property rights and our ability to invest in high-quality publications, and that does not hinder researchers from communicating their discoveries.

This Executive Order would undoubtedly have negative intellectual and financial consequences for ASTRO and its journals. The abstracts of all scientific articles are free to read, making the heart of the research and its findings freely accessible to all readers. Elsevier has been generous in removing the paywall from especially groundbreaking articles; all requests by ASTRO to do

so have been granted. Additionally, with particularly urgent and timely content like ASTRO's many journal articles about COVID-19, virtually all scientific publishers have independently removed the paywall to encourage the utmost collaboration in research. In short: Content is accessible, even if it is behind a paywall.

“Free distribution” of articles is a misnomer. Journal article and issue production is a costly endeavor, and someone must pay for it. Under the current system, ASTRO journals may publish the highest quality content regardless of an author's ability to pay for the article's production and dissemination. Requiring the free distribution of federally funded content less than one year after publication forces researchers to use valuable funding for publication fees rather than scientific research.

As you are aware, federal agencies currently require that peer-reviewed manuscripts be made freely available online—within one year of publication—if they discuss research funded at least in part by a government grant.¹ This policy represents a significant compromise that balances our shared goals of providing broad access with the need for our organization to recoup the substantial investments we make in the peer-review, editing, publication, distribution, and long-term stewardship of these articles. This one-year compromise contrasts with the length of a full copyright term of life-of-the-author plus 70 years. Importantly, this compromise reflects Congress' guidance (in the authorizing legislation for the current policy) that the Administration must “take into consideration the role that scientific publishers play in the peer review process in ensuring the integrity of the record of scientific research, including the investments and added value that they make.”²

Reducing or eliminating the current one-year embargo would significantly jeopardize our organization's ability to invest in producing the high-quality peer-reviewed journals that our readers in the radiation oncology community rely on. In so doing, such a policy would contravene Congress' clear guidance to take our role and investments into consideration. Furthermore, such a policy would directly result in a reduction in either the quantity or quality (or more likely, both) of peer-reviewed journal articles produced by hundreds of organizations like ours.

This would not only be harmful to the research enterprise, it would also be harmful to the radiation therapists, biologists, medical physicists, and other medical professionals who are the ultimate beneficiaries of the scholarly journals we produce.

We urge you not to disrupt our ability to support the advancement of research patient care in radiation oncology, and we look forward to working together to identify solutions that advance the goals of open science without undermining the communication of research findings and analyses through peer-reviewed journals.

¹These policies were developed pursuant to OSTP's requirement that agencies “shall use a twelve-month post-publication embargo period as a guideline for making research papers publicly available . . .” See OSTP Memorandum on “Increasing Access to the Results of Federally Funded Scientific Research” (Feb. 22, 2013).

² America COMPETES Reauthorization Act of 2010, Section 103(b)(9), *available at*: <https://www.congress.gov/111/plaws/publ358/PLAW-111publ358.pdf>.

American Society for Radiation Oncology
May 5, 2020
Page 3

Thank you for the opportunity to submit these comments.

Sincerely,

A handwritten signature in black ink that reads "Laura Thevenot". The signature is written in a cursive, flowing style.

Laura I. Thevenot
Chief Executive Officer

**Comments of The American Association on Immunologists (AAI)
in Response to the White House Office of Science and Technology Policy (OSTP)
“Request for Information (RFI): Public Access to Peer-Reviewed Scholarly Publications,
Data and Code Resulting From Federally Funded Research” (85 FR 12949)**

- What current limitations exist to the effective communication of research outputs (publications, data, and code) and how might communications evolve to accelerate public access while advancing the quality of scientific research? What are the barriers to and opportunities for change?

As the nation’s largest professional association of research scientists and physicians who are dedicated to understanding the immune system (see further description under fourth bullet, below), [The American Association of Immunologists \(AAI\)](#) owns and publishes two scholarly journals, [The Journal of Immunology \(The JI\)](#), which was established in 1916, and [ImmunoHorizons \(IH\)](#), which was launched in 2017. Both journals are committed to publishing and disseminating the highest-quality peer-reviewed science.

The JI, a hybrid journal, is the largest and most highly cited journal in the field of immunology. Full-length articles are available immediately to subscribers, and are fully available to the public, at no charge, 12 months after the date of publication. Abstracts, including key points and visual summaries which describe the key scientific findings, are freely available to the public immediately upon publication. For articles that are within 12 months of publication, AAI offers a pay-per-view option at a reasonable price, enabling any member of the public to purchase, print, and download an article for personal scholarly, research, and educational use. This option can be accessed via *The JI* website.

The JI offers authors two different open-access options: 1) immediate open access, via an “author pays” model, or 2) access after a 12-month embargo period. (Authors may also post their pre-peer-reviewed manuscript to a preprint server, such as BioRxiv; while authors may value this as a way of establishing the date of their research findings, it may be misleading – and potentially harmful – to readers because these manuscripts and the data included have not yet been peer-reviewed or deemed acceptable for publication.) AAI sells subscriptions (online and print) to the content that is not available immediately to interested commercial companies, academic/other institutions, and libraries. These subscriptions are an essential source of revenue that subsidizes the actual cost of publications services to authors and supports the infrastructure (manuscript submission systems, online hosting, etc.) and processes necessary for the publication of a high quality, reliable scholarly journal: expert peer review, professional copyediting, widespread dissemination, and perpetual-access archiving. Alongside the published manuscript, AAI hosts supplemental data which is available to researchers to further their own work. Any original data cited within the manuscript is also published and open to all (via a link to a public repository; *The JI* requires that large, essential datasets be deposited). Excess revenue from *The JI* also supports *IH*, a fully open access online journal that makes its content available immediately upon publication; as a new open access journal, *IH* is not financially self-sustaining.

As part of the AAI educational mission, AAI journals conduct peer review on virtually all

manuscripts that are submitted. This provides an invaluable service to authors and readers by ensuring the publication and communication of only verified scientific results. Further, this verification maintains a trustworthy scientific record through long-term archiving. Like many not-for-profit professional society scientific publishers, AAI is an irreplaceable partner to the federal government; by providing high-quality peer review and publication services, these associations serve the federal government by independent verification of federally funded research using vetted, skilled scientists and clinicians – recruited and supervised by these organizations – to ensure that this research is in fact worthy of federal funding and is accurately reported.

Although there are some limitations to the **immediate** communication of research outputs, these limitations are the result of a necessary publishing process, including and especially the peer-review process described above. This process is essential to ensuring accuracy and the verification of results, and any delay is limited in duration: through hard work, increased investment, and technological advancements, *The JI* has been able to significantly reduce the number of days from manuscript submission to initial editorial decision and, ultimately, publication.

- What more can Federal agencies do to make tax-payer funded research results, including peer-reviewed author manuscripts, data, and code funded by the Federal Government, freely and publicly accessible in a way that minimizes delay, maximizes access, and enhances usability? How can the Federal Government engage with other sectors to achieve these goals?

While federal grants fund, in whole or in part, much of the research that is published in our journals, federal dollars do not support the entire cost of publishing. The resources provided by AAI and other not-for-profit scientific publishers help to defray the immutable cost of publishing. Subscription revenue from *The JI* subsidizes the cost of publications services to authors, supports the entire publication process (described in detail above), and partially finances the publication of another fully open access journal (*IH*).

The one thing the Federal Government should **not** do is eliminate or reduce the existing 12-month embargo period for manuscripts that report the results of federally funded research, as doing so would likely cause a steep and precipitous decline in journal subscriptions. This loss of revenue could leave AAI unable to support the full cost of publication, subsidize authors' fees (likely requiring authors to use additional federal grant funds that could be used for research), or support numerous career development, educational, and other programs that AAI offers to both members and the broader biomedical research community (see full description in response to the last bullet, below). Instead, the Federal Government should offer incentives for scientists to publish in professional association scholarly journals (recognizing the educational value of peer reviewing not only the articles that are ultimately published but also virtually all submitted articles, thereby providing scientific mentoring to nearly all aspiring authors), potentially by setting aside new, additional funding for researchers who choose immediate open access when publishing in these journals. AAI would welcome the opportunity to discuss with OSTP this and other ways to achieve OSTP's objectives.

It is essential for the Federal Government to engage with not-for-profit professional scientific associations, some of which (including AAI) have been publishing, distributing, and otherwise making available verified research results for more than a century. These associations will explain the critical role of their scholarly journals and publication programs in the lives of the scientists in their fields, including peer reviewing, copyediting, proofreading, publishing, and disseminating submitted manuscripts. These services help authors better and more accurately communicate their research findings; protect against fraud and plagiarism (through the use, among other critically important tools, of plagiarism-check software and image forensics); and improve access to the scientific literature through association-maintained infrastructure [including participation in searchable databases, assignment of a Digital Object Identifier (DOI), and long-term archiving of published manuscripts].

- [How would American science leadership and American competitiveness benefit from immediate access to these resources? What are potential challenges and effective approaches for overcoming them? Analyses that weigh the trade-offs of different approaches and models, especially those that provide data, will be particularly helpful.](#)

AAI believes that American scientists and other scientific leaders already have prompt or immediate access to the scientific literature through their place of employment (academic institution, government agency, etc.) via institutional subscriptions to relevant academic journals (print and/or online). These journals also provide access to needed data. Further, *The JI* offers freely available abstracts at all times and inexpensive purchase of articles for those without subscriptions. During public health emergencies, such as the novel coronavirus pandemic, AAI and many other publishers expedite peer review and editing and make any urgently needed research available and open immediately. Under ordinary circumstances, advancing scientific research requires the publication and dissemination of research results that have been peer-reviewed, edited, proofread, and validated to ensure that the science reported is sound and useful to other scientists, as well as to the public. American competitiveness depends on this accuracy and verification.

- [Any additional information that might be considered for Federal policies related to public access to peer-reviewed author manuscripts, data, and code resulting from federally supported research.](#)

It is especially important for any Federal Government policies to acknowledge and support the essential role of not-for-profit scientific professional societies in advancing biomedical and other scientific research and in helping to keep scientists fully and promptly informed about advances and issues in their fields. As the nation's largest professional association of research scientists and physicians who study the immune system through basic, translational, and clinical research, The American Association of Immunologists (AAI), has been dedicated, since its founding in 1913, to advancing the field of immunology and the research of our members. A not-for-profit organization, AAI has no shareholders and uses any revenue it generates to support its members and activities. AAI members are scientists at all career stages, from graduate students to the most senior researchers, and in all sectors of research – academic, corporate, government, and non-profit. AAI is honored, as a professional society, to have among its members thousands of distinguished scientists, including both recipients of the 2018 Nobel Prize in Physiology or

Medicine (Drs. James Allison and Tasuku Honjo), other Nobel laureates, Lasker Prize and National Medal of Science recipients, and members of the National Academy of Sciences and the National Academy of Medicine. We are also proud that many of our members, including National Institute of Allergy and Infectious Diseases (NIAID) Director Anthony M. Fauci, M.D., are on the front lines of both advising the nation regarding the novel coronavirus pandemic, and developing preventive measures against/treatments for COVID-19.

AAI members receive most of their funding from the National Institutes of Health (NIH), conducting research on critically important and promising areas of immunology and biomedicine. These discoveries have laid the foundation for extraordinary advances in preventing and treating disease; recent advances, such as immunotherapies to treat certain cancers, have achieved previously unimaginable success.

As part of our core mission to advance the field of immunology and the research of not only our members but all immunologists, AAI owns and publishes two peer-reviewed scholarly journals: *The Journal of Immunology (The JI)*, a hybrid access journal established in 1916, and *ImmunoHorizons (IH)*, an open access journal launched in 2017. Scientists from the United States and around the world publish their research findings in *The JI*. AAI is proud that *The JI*, which publishes issues twice monthly, is the most-cited peer-reviewed all-immunology journal in the world. *The JI* online has over one million views per year.

In addition to our journals, AAI offers intensive immunology courses (beginning and advanced) each summer for professional training and development. We also host the world's leading all-immunology scientific meeting each year, attracting more than 4,000 scientists and scientific exhibitors from around the globe. This meeting features presentations from scientists at all career stages, from plenary lectures by the most prominent scientists in the field, to the first presentation by a graduate student. The work presented covers the most cutting-edge science in award lectures, major and guest symposia, and dynamic platform and poster presentations of original data. It also offers career development sessions which provide advice for researchers at every career stage, professional development activities, and career exploration opportunities. AAI provides travel grants and awards to over 600 meeting attendees annually, thus financially assisting their participation, enabling them to present their findings, serve as speakers, and network with both peers and senior investigators.

AAI careers programs, including the AAI Careers in Immunology Fellowship Program, the AAI Fellowship for Career Reentry Program, and the AAI Intersect Fellowship Program, provide salary support for meritorious trainees. The AAI Travel for Techniques Program enables AAI members to travel to another laboratory specifically to learn a new scientific technique. Our Grant Review for Immunologists Program helps new investigators prepare their NIH grant proposals by matching them with established investigators who have significant, successful grant writing careers. The AAI Career Advisory Board (CAB) offers senior postdocs and early-career scientists the opportunity to speak with an established scientist outside of their own institutions for career advice. And the AAI Jobs Board helps immunologists find jobs, fellowship

opportunities, immunology graduate programs, and non-AAI Fellowships/Internships. Our Awards Program recognizes scientists of distinction at every career stage, both for research and career achievements and for the professional promise of early- and mid-career investigators. Each year, we honor more than 1,000 talented scientists through fellowships, career awards, and travel grants.

We urge OSTP to work with not-for-profit professional associations to discuss ways to enhance access to federally funded research results; this consultation should take place before OSTP makes any final decisions or issues any rules or guidance. In addition, it is critically important that OSTP recognize the current fiscal challenges faced by not-for-profit professional associations/publishers during this coronavirus pandemic; this is a particularly inopportune time to upend what has been a successful and tested publishing model that plays a key role in supporting our nation's international preeminence in science and technology. We stand ready to work with OSTP to ensure the most prompt access possible to what we all want: accurate, verified, and high-quality biomedical research.

May 5, 2020

The Honorable Kelvin Droegemeier
Director, Office of Science and Technology Policy
Executive Office of the President
Eisenhower Executive Office Building
1650 Pennsylvania Avenue
Washington, DC 20504

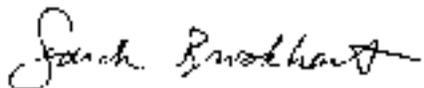
Dear Director Droegemeier:

The Association for Psychological Science (APS) appreciates the opportunity to comment on the Office of Science and Technology Policy request for information titled “Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting from Federally Funded Research” (85 FR 12949). APS is a scientific association of over 30,000 members dedicated to the advancement of scientific psychology in the US and globally. Our members include the field’s leading scientists and academics, clinicians, researchers, and educators.

APS commends OSTP for exploring opportunities to make the knowledge, information, and data generated by federally funded research readily accessible, and APS is proud to note the contributions of the psychological science community in this area.* Over the last 10 years, APS and its members have led the way in the modern movement toward open, transparent, robust, and replicable scientific research across all disciplines.

Unfortunately, between the time that OSTP’s request for information was issued and now, the world has been overwhelmed by the emergence of the novel coronavirus (SARS-CoV-2); the scientific and academic community has mobilized fully to respond to the threat. Because of this development, APS asks OSTP to pause this RFI process until the current public health crisis and related fallout have abated. Once the crisis has passed or is under control, OSTP could then reissue its call for input so that commenters can submit new views, or revise and resend previously stated views taking into account lessons learned from combating the virus and other developments. Thank you for considering this request.

Sincerely,



Sarah Brookhart
Executive Director

* Please visit <https://www.psychologicalscience.org/publications/open-science> for a listing of APS’s contributions to open scientific practices.

To whom it may concern,

Access to science research is important for an informed populace. As the current crisis has shown, we need to improve scientific literacy in America. It is important that research be available for all citizens if it is publicly funded and that publishing companies cannot lock it behind paywalls to profit themselves on publicly funded research. Pubmed is an important source of information and there should be additional options in a REST API to search and download relevant research to a topic of interest. Society benefits from sharing peer reviewed and accurate research. Please expand the access to government funded research.

Sincerely,
Denise Mauldin

BY ELECTRONIC SUBMISSION (May 6th, 2020)

Dr. Kelvin K. Droegemeier
Director, Office of Science and Technology Policy
Eisenhower Executive Office Building
1650 Pennsylvania Avenue, NW
Washington, DC 20504

Response to OSTP Request for Information – FR Doc. 2020-06622 – “Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research”

Response from: Royal Meteorological Society
104 Oxford Rd, Reading RG1 7LL
United Kingdom

Dear Dr. Droegemeier,

Thank you for the opportunity to respond to your request for information. We write to caution OSTP against adopting a policy mandating the free distribution of peer-reviewed manuscripts earlier than one year after publication.

The Royal Meteorological Society (RMetS) is the UK’s Professional and Learned Society for weather and climate and its mission is to promote the understanding and application of meteorology for the benefit of all. The RMetS plays a key role as the custodian of both the science and the profession of meteorology in the UK, but also has an important role to play internationally as one of the world’s largest meteorological Societies.

Scientific publishing is the RMetS’s single largest activity and is a vital contributor to the mission and well-being of the organization. More than two thirds of the RMetS’s revenue are generated through its journal publication program.

As a not-for-profit organization, all revenues generated are turned into activities that support the global scientific community be that through providing vocational qualifications to support meteorologists throughout their career, many of whom go on to work in organizations abroad; hosting events for the meteorology and scientific community with international relevance, most of which are free to attend; or supporting the international collaboration of researchers in the availability and dissemination of the latest research to advance the field for the benefit of all. The RMetS is at the heart of the debate on climate change, playing a particularly important role in communicating some of the more complicated scientific and technical issues to the public at large and enabling them to understand and engage with what is one of the most important global issues that we face.

Why this Mandate Matters to us?

Whilst we are a UK Society, collaboration with our US colleagues represents a significant contribution to the overall research outputs being driven in weather and climate.

In 2019, 10% of all articles published in our journal were from the US (although this figure will be considerably higher, as there will be many contributions from individuals who were not the lead author on the paper). In addition, in 2019 the US represented by far the most significant region downloading and reading our content (24%), and the level of US citations of our content was also the highest. This shows that our publications are valued and recognized in the US, but also highlights the significance that any change in policy may have on the activities of the RMetS moving forward.

Our Commitment to Open Access

The RMetS is committed to providing long-term, sustainable access to high quality scientific research for everyone, whilst maintaining high value, trustworthy author and reader services which enhance scientific communication and progress. As such we have been working hard to put resources behind making our content free wherever possible through Gold Open access initiatives. The RMetS now has three fully open access journals (plus a new open access launch this year) and offers open choice for its authors in its other four hybrid titles. We are working hard to transition our journals where we can, however we have a obligation to provide our authors with choice (some of whom are from organizations or parts of the world who have no funding available for open access) as well as a commitment to maintain our revenues to support our community in the long term - and the publishing of content needs to be funded somehow.

Implications of this Mandate to the RMetS

If all federally funded material were to be made freely available with no embargo this would have a significant effect on the RMetS.

There is a huge investment in time and resource for every article that is published in our journals. From the Societies perspective this is from our Editors-in Chief, Editorial Board and all our reviewers who volunteer their time on behalf of the RMetS to ensure that the quality of each manuscript published is to the highest standard (there can be as many as 5 volunteers and 12 people within the publishing house involved in the publication of a single article). Please note that there is also considerable time and resource also put into articles which are ultimately rejected. There is also the investment the RMetS makes to cover the costs of all aspects of publishing that article to an international audience (editorial support systems, copy editing, typesetting, making the content searchable and discoverable), which in most cases we share with the publisher. A move to no embargo gives the RMetS no opportunity to recoup those costs and undermines the time and effort put in by our volunteers. If this policy were to go ahead, the only way we could support the cost of the publication of these articles would be at the detriment of other authors and readers (and ultimately our reviewers and editorial boards) by increasing open access article processing charges or increasing subscription rates. This doesn't seem a fair solution and I suspect would be ultimately detrimental to where such federally funded materials may be able to be published, as well as US researcher's overall ability to communicate their research to the broader research infrastructure.

Such a policy would jeopardize the intellectual property of organizations engaged in the creation of high-quality peer-reviewed journals and research articles. The move would be costly, could bankrupt many scientific societies that rely on income from journal subscriptions, and would harm the scientific enterprise. There would be a negative impact on research and discovery by no longer supporting the quality and integrity of research outputs.

Moving Forward

We understand the US government's ambition to make federally funded research as accessible as possible but suggest that one solution might be for U.S. policymakers to ensure that the money and incentives are in place for federally-funded researchers to publish their papers via Gold OA. This is a system that is working well so far and is a direction all key stakeholders are working towards, and at a much-increased pace – especially as there is no reliable evidence that the 2013 policy is not working well in providing public access to journal articles. In fact, the current proven and successful model for reporting, curating and archiving scientific results shows that it is advancing the research enterprise. This would by far have a lesser impact on the wider meteorology community.

In the meantime, we are doing our best to make this research as accessible as possible through other means. We are putting initiatives in place to encourage our authors to share the data and other artefacts supporting the results in the paper by archiving it in an appropriate public repository. One journal already mandates this as a condition for publication. Perhaps of importance to note here however is the challenges this journal faces in terms of submissions, as authors face their own constraints with regards intellectual property rights, data ownership, and inadequate infrastructure to properly maintain and administer datasets.

Abstracts to all our articles have always been, and will always remain free for the public, regardless of access route to the remainder of the article; and the RMetS is carrying out further work to support public understanding of our content (including US funded materials) through development of lay person summaries which turn complex science into publicly accessible content. Such content is being promoted internationally through our RMetS channels. To do this however, we employ staff through revenues generated by our publications.

Whatever policy is agreed upon in the future, the RMetS at least requests that a reasonable timeframe is put in place that the scientific community has some opportunity to work out how to adapt.

We hope the voice of the Learned Society will be taken into consideration in further developments to this plan, especially as Societies in general, already face other serious business challenges including retaining and encouraging membership and delivering well attended annual conferences in an increasingly digital driven environment.

Executive Summary:

- **Our collaboration on publications with the US means that the outcome of this mandate will have significant and direct implications to the RMetS**
- **We are transitioning our publishing program to open access as fast as we can but have obligations to our authors and community to do this at a sustainable pace**
- **We look forward to working together to identify solutions that advance the goals of open science without undermining the communication of research findings and analyses through peer-reviewed journals.**

RDAP Association response to Request for Information: Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research

- [Link](#)
- Due: May 6, 2020

Topics of interest:

What current **limitations** exist to the effective communication of research outputs (publications, data, and code) and how might communications evolve to accelerate public access while advancing the quality of scientific research? What are the **barriers** to and opportunities for change?

There are many limitations to the effective communication of research outputs related to long-standing research practices within academic culture. Current academic research culture incentivises publishing in “high impact” journals (most belonging to wealthy publishers, many outside of this country) and acquiring grant funding in order to earn promotion and tenure (job security) at most universities and colleges. This antiquated system presents no tangible incentives for researchers to share their research products openly, whether it be by publishing in open access journals or by sharing data and code. The only enforceable reasons for researchers to share their research openly are data sharing mandates from publishers. While funding agencies require data management and sharing plans, these plans are rarely enforced. Open sharing of research products is also disincentivised due to researchers fears of being “scooped,” the perception that open access publications are lower quality (assuming less exclusive or rigorous), and the conflation of open-access publishers with predatory journals by some. In fact, some researchers have called computational researchers who reuse published data and code in new studies “research parasites”. This attitude is connected to the idea that data are owned by the researcher without considering who funded the research or actual data stewardship policies from their institutions.

Researchers are also limited by a lack of resources, including infrastructure, skills, personnel, and time. Sharing research data effectively requires that the specific field or data type has appropriate repositories with clear and consistently applied metadata and data standards. These standards are often absent or underdeveloped, leaving a large amount of data hard to find, access, interpret or aggregate with similar data. This situation is exacerbated by the lack of sustainable funding for data repositories and data curation. Many repositories are initially grant-funded, but are expected to be self-sustaining after this funding period expires. Currently, there are no good strategies for sustainable repository funding aside from charging researchers to deposit or access the data, creating a barrier to access. But even if technical infrastructure exists and is sustainably funded, researchers lack guidance on how to curate data to create easily usable datasets. Additionally, with all their other responsibilities, researchers have limited time to learn even when there is guidance how to document their data and code for optimal reuse.

Guidance has to be broad to cover all disciplines, but it is often so vague and jargon-filled that most researchers can't interpret the requirements without help. Researchers need access to staff that can help them participate in open access responsibly. This is especially important when sharing human subjects data to protect privacy and ensure security. There is also a growing need for repositories to support large interdisciplinary datasets and to provide appropriate access controls.

Several things can be done to accelerate open access. Most notably, a change in the culture of the academic research enterprise needs to happen. This change can be achieved by developing reward structures and meaningful metrics for open access work, especially for sharing data, code, and other non-traditional research outputs as stand-alone "publications." Collaborations between compliance, research integrity, data services, IT, and Libraries to support researchers making work open and reproducible would aid in this culture shift. In turn, we must also create the technical infrastructure and standards needed to do data sharing well. We also need better policies and consistent support for risk management, including data de-identification and/or access controlled sharing.

What more can Federal agencies do to make tax-payer funded research results, including peer-reviewed author manuscripts, data, and code funded by the Federal Government, freely and publicly accessible in a way that minimizes delay, maximizes access, and enhances usability? How can the Federal Government engage with other sectors to achieve these goals?

Federal agencies can promote free public access of research output in several ways. Advocating for universities to consider counting open data, software, and code in promotion and tenure evaluations would incentivise researcher behavior change. In addition to supporting institutional approaches that value open data and code, federal agencies can encourage

standard citation and attribution practices that raise the visibility and perceived value of these research products. Federal agencies should also sustainably fund a finite number of repositories over the long term instead of supplying seed money for countless startups that are unsustainable. This funding should also ensure proper curation measures (outlined in FAIR guiding principles) are taken for optimal data discovery and reuse. Standardized resources and approaches used across agencies would make it easier to conduct interdisciplinary research, but these approaches would need to have clear criteria for how to assess data management plans to make a review meaningful. In areas where existing research communities and/or professional bodies have already begun the work of creating such standards, federal agencies could partner with these groups to build on this work and promote its use. More explicit budget guidance for what to include for data management/sharing would indicate to researchers that these are valid costs to include in their research budget.

How would American science leadership and American competitiveness benefit from immediate access to these resources? What are potential challenges and effective approaches for overcoming them? Analyses that weigh the trade-offs of different approaches and models, especially those that provide data, will be particularly helpful.

The American scientific enterprise would benefit from immediate access to research outputs in many ways. A culture shift toward open science would increase collaboration, reduce duplicative effort, and encourage cross-disciplinary collaboration. It would also increase equity to information access by eliminating the paywall barrier that often prevents access to smaller US institutions, those that serve rural communities, and researchers from developing regions of the world. Rapid access to high-quality research data enables the production of instructional materials relevant to modern scientific and sociopolitical questions. Overall, these changes would increase the rate of scientific discovery and improve access to up-to-date educational materials. We are seeing this collaborative and open mindset play out during the current COVID-19 pandemic with obviously effective results. If we can come together to do this in a crisis, we can do it as a standard practice.

Any additional information that might be considered for Federal policies related to public access to peer-reviewed author manuscripts, data, and code resulting from federally supported research.

Response from the Carnegie Mellon University Community, initiated by Dean Keith Webster of the University Libraries

What current limitations exist to the effective communication of research outputs (publications, data, and code) and how might communications evolve to accelerate public access while advancing the quality of scientific research? What are the barriers to and opportunities for change?

Limitations and Barriers

1. Cost of Open Access Publishing

CMU Libraries has negotiated a number of transformative OA agreements to secure automatic open access publishing for our corresponding authors without further payment. This is an emerging practice which will require careful negotiation by research intensive institutions. CMU also provides some limited financial support for Article Processing Charge (APC) fees for researchers working with other publishers, but this is not a service found across all universities. In the latter instance, the researchers themselves must absorb the cost of open access publishing, introducing a significant barrier.

2. Cost of Repository Development and Maintenance

Developing, maintaining, and administering trusted repositories to host and preserve these research outputs requires financial investment in technical infrastructure and in developing a team to facilitate access to the information held in the repositories. This may include data curators, repository managers, technical developers, and scholarly communication professionals. In order to ensure the research outputs are truly discoverable and reusable, this investment in an appropriate repository team must be long-term, presenting a financial burden for institutions to consider. Even in cases where an institution is licensing a specific instance of an established platform (such as KiltHub at CMU Libraries, which is built on the figshare platform), there are still significant costs associated with building a team who can administer the local instance and facilitate the data curation process with users. The long term preservation of the data stored within these systems presents yet another challenge: how do we plan for 5 years or even 10 years of accessible data? What about maintaining Digital Object Identifiers (DOIs) for long periods of time? How do we maintain terabytes or even petabytes of data? Planning for data preservation within repositories imposes significant bandwidth requirements and financial considerations on repository managers.

3. Cultural Barriers to Research Output Sharing

Some disciplines, such as psychology, have a stronger research culture towards data sharing, while others still have apprehension towards the practice, often influenced by the nature of their research data. For example, there are significant barriers to data sharing in the humanities (who are increasingly engaging in collaborative scientific research) and in business due to the common usage of IRB-protected ethnographic data and proprietary data, respectively. Therefore, conversations around data sharing are limited to certain domain areas.

4. *Lack of Incentive for the Researchers Beyond Compliance*

Currently, there is little incentive to share data in many academic research settings beyond compliance requirements from journals and funders. For some journals, simply providing a statement such as “I will share data upon request” is enough to meet the data sharing requirement, and does not ensure the data will be made available to requesters in a timely manner, with appropriate contextual information for reuse (metadata, README files, etc.). Further, sharing other research outputs such as code, protocols/workflows, and electronic laboratory notebooks are rarely, if at all, encouraged with incentives. Without a strong incentive for making data *and* other research outputs publically available, it will likely not be a priority for most researchers, especially given the common fears of being “scooped” when their data are made public before an article is published.

5. *Institutional Differences in Research Data Trends*

Institutions have their own unique research landscapes which guide perceptions and cultural trends around data sharing and the sharing of other research outputs. Particularly as the case with CMU, copywritten software and code is a non-trivial source of CMU-licensed IP, and having to make such software public could potentially reduce our revenues, disclosures, licenses, and start-ups. However, in practice, we would offer that there are many existing ways to share code (GitHub, sourceforge, etc.). There are many types of open source and other licenses that are set up precisely to do just that. Therefore, it is somewhat unclear why the government would be focusing on code at all. We see a fair amount of government funded contracts that require or encourage this type of open source licensing and many of the agencies maintain their own repositories for large projects as well (e.g. NASA). Given that the infrastructure exists to facilitate code sharing and there are little to no barriers to accessing this infrastructure for deposit or use, we would only comment perhaps that, given the above, code is different from the other information being discussed, and should not be included in any rule changes at all.

Opportunities for Change

1. *Clear Incentives for Researchers Beyond Compliance*

While compliance is unarguably an incentive for researchers to share their data and research outputs, facilitating and encouraging a broader culture of sharing will require additional incentives. These incentives include institutions (and departments) placing a greater weight on shared research outputs beyond the peer-reviewed publication within the promotion/tenure review process. Publishers can also play an important role in explicitly requiring citation of data and code used in publications. While we obviously need our researchers to comply with the stipulations of their funding award and publisher guidelines, we want to facilitate a culture where researchers put forth the effort to ensure they are sharing well-documented and reusable data (where applicable) due to clear incentives for doing so.

2. *Communications and Training on Open Access and Data Sharing*

To promote true cultural change around data and research output sharing, communications should focus on building public access components in the career path of researchers (again, through the value of reproducible data in the promotion/tenure process), and providing mandatory training for early career researchers on open access and data sharing.

What more can Federal agencies do to make tax-payer funded research results, including peer-reviewed author manuscripts, data, and code funded by the Federal Government, freely and publicly accessible in a way that minimizes delay, maximizes access, and enhances usability? How can the Federal Government engage with other sectors to achieve these goals?

1. *Opportunities for Federal Agencies*

Federal agencies can create *strong* mandates from funders that require data and other research outputs to be in a public repository in order for future funding to be awarded, creating more stringent mandates to penalize non-compliance. Funders should provide stronger incentives to award sharing preprints, sharing code, data, research workflow, and publishing open access. Alongside these policies, the Federal Government should provide dedicated funding for publishing open source materials to help offset costs of APCs (aforementioned under “Limitations and Barriers”) and other incurred costs in the process of data sharing, such as deidentification, curation, etc.

We also recommend making data stewardship and curation an integral part of the data management plan and budget considerations so funded researchers can get help from data professionals to share their data and code properly, and provide institutional data services as a mechanism for cost recovery.

The Federal Government also has the opportunity to design and fund research output sharing training initiatives, which would be educational engagement aimed at building a culture of reproducibility and transparency around funded research.

2. Engagement with Other Sectors

From a CMU perspective, the Federal Government has an opportunity to engage with the academic publishing sector, data management/data standard communities, and research consortia in the effort to accelerate public access to research data and other outputs while advancing the quality of scientific research. In partnerships with the academic publishing sector, the Federal Government can encourage journals to explicitly incentivize the sharing of research outputs that accompany the article, using their own policy regulations to nudge journals into a direction of more openness and increased usage of discovery layers to enhance reuse of the data and other outputs. In cooperation with data management/data standard communities, the Federal Government can work to develop crosswalks between different metadata standards, invest in data sharing infrastructure, provide guidance on planning for reproducibility in a data management plan, and have a voice in guiding the educational outreach provided by data librarians for funded researchers.

How would American science leadership and American competitiveness benefit from immediate access to these resources? What are potential challenges and effective approaches for overcoming them? Analyses that weigh the trade-offs of different approaches and models, especially those that provide data, will be particularly helpful.

The benefit of immediate access to these resources is clear: transparency will help the public understand where the research budget (taxpayer dollars) are going and what the outcomes are, help to make research more reproducible and robust, and restore public confidence in research and universities. From an economic perspective, getting research output out faster should also help translate research into actionable products faster and lower the overall cost. However, we do wish to note that immediate access to CMU-grade code and data may be more beneficial to large US and foreign companies rather than the US public, at least without heavy documentation and protocols for reproducibility. Therefore, any initiative to make public these resources would also need to require that such code and data come with documentation for reuse.

From: Matwin, Sonia <sonia.matwin@vumc.org>
Sent: Tuesday, May 5, 2020 9:41 AM
To: MBX OSTP Public Access <MBX.OSTP.PublicAccess@ostp.eop.gov>
Subject: [EXTERNAL] RFI Response: Public Access

Dear Dr. Droegemeier,

I am grateful for the opportunity to respond to this request for information. In particular, I write to caution OSTP against adopting a policy mandating the free distribution of peer-reviewed manuscripts earlier than one year after publication.

As a reader [and researcher, clinician, author, editor, teacher, trainer] of journals that publish cutting-edge research and research-informed clinically useful articles that move science and practice forward and help the human condition, especially among those suffering from anxiety, depression, alcoholism and other addictions, obsessive compulsive disorder, PTSD, and many other disorders, I depend on the journals, like Behavior Therapy and Cognitive and Behavioral Practice, made available by the Association for Behavioral and Cognitive Therapies in partnership with Elsevier.

As you are aware, federal agencies currently require that peer-reviewed manuscripts be made freely available online-within one year of publication-if they discuss research funded at least in part by a government grant.[1] This policy represents a significant compromise that balances our shared goals of providing broad access with the need for our organization to recoup the substantial investments we make in the peer-review, editing, publication, distribution, and long-term stewardship] of these articles. This one-year compromise contrasts with the length of a full copyright term of life-of-the-author plus 70 years. Importantly, this compromise reflects Congress' guidance in the authorizing legislation for the current policy that the Administration must "take into consideration the role that scientific publishers play in the peer review process in ensuring the integrity of the record of scientific research, including the investments and added value that they make." [2]

Reducing or eliminating the current one-year embargo would significantly jeopardize our editorial process that produces the high-quality peer-reviewed journals that our readers in psychology community rely on. In so doing, such a policy would contravene Congress' clear guidance to take our role and investments into consideration. Furthermore, such a policy would directly result in a reduction in either the quantity or quality (or more likely, both) of peer-reviewed journal articles produced by hundreds of organizations like ours.

This would not only be harmful to the research enterprise, it would also be harmful to the psychology researchers, clinicians, students, teachers, and clients who are the ultimate beneficiaries of the scholarly journals we produce.

We urge you not to disrupt our ability to support the advancement of research and patient care in mental health, and we look forward to working together to identify solutions that advance the goals of open science without undermining the communication of research findings and analyses through peer-reviewed journals.

Thank you again for the opportunity to submit these comments.

Sincerely,

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Nashville, TN 37212

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ARCADIA RESPONSE TO OSTP RFI ON PUBLIC ACCESS TO SCIENTIFIC RESEARCH

Arcadia is a charitable fund of Lisbet Rausing and Peter Baldwin. We support charities and scholarly institutions to preserve cultural heritage, protect the environment, and promote open access to research. We have invested more than \$67m in grants designed to support and promote open access. Since 2009, we have also required the research outputs of all our grants to be available on an OA basis. Given our significant investment in helping to make research substrates and outputs openly available online for all, we are well placed to respond to the Office of Science & Technology Policy's request for information. In our experience, the costs of ensuring public access deliver ample economic and social returns on investment. It is in this context that we submit our responses to your questions.

What current limitations exist to the effective communication of research outputs (publications, data and code) and how might communications evolve to accelerate public access while advancing the quality of scientific research? What are the barriers to and opportunities for change?

A significant part of Arcadia's mission is to protect endangered nature. In order to best protect threatened landscapes and biodiversity, it is vital that the latest research is easily and freely available to everyone engaged in conservation and restoration sciences. Yet recent analysis of a large survey conducted by the International Union for the Conservation of Nature (IUCN) indicates that half of the 2,285 respondents find it 'not easy' or 'not at all easy' to access relevant scientific research [1]. This is no surprise, as 85% of all conservation biology papers are not open for public readership [2]. These include many studies funded by US federal agencies. The situation is similar across most disciplines. For instance, in ophthalmology: across medical institutions there is widespread inequality of access to field-relevant research [3]. As these examples show, the traditional subscription journals business model does not provide equitable access to research paid for by public or philanthropic funds. It fails to provide sufficient easy access to discipline-relevant literature even to practitioners of the discipline, be it conservation sciences, ophthalmology or other scientific endeavours.

With easier and cheaper access, both researchers and practitioners would be more effective and productive.

Federal agencies have the power to mandate that federally-funded research should be immediately publicly available online, without a paywall, on publication. The United States has digital research infrastructures that could and would support such a policy. Government scientific research funders in Austria, Finland, France, Ireland, the Netherlands, Norway, Poland, Slovenia, Sweden, Jordan, the United Kingdom, and Zambia have all committed to mandating the immediate public availability of government-funded research online, without a paywall. The world is now facing a pandemic that scientific research can help to solve. The United States would show leadership by making immediate public access to government-funded research the new normal. This would maximize the return on investment of US funded research – paywalled research outputs are a misuse and misappropriation of tax dollars.

We also note that academic paywalls harm national security: military consultancies and defense contractors have inadequate access to the latest research, which can deter them from turning concepts into reality [4]. The Department of Defense publishes unclassified research whilst protecting classified material. Open Access as practiced by Federal agencies is not a threat to national, military, or commercial interests.

What can Federal agencies do to make taxpayer funded research results, freely and publicly accessible?

As well as changing policy to disallow embargoes on the public availability of government-funded publications, Federal agencies should

- support the development, maintenance, and staffing of relevant digital research infrastructures that enable the sharing and discovery of publicly accessible research outputs, such as arxiv.org for preprints and datadryad.org for data
- cut out the middleman in the journal publication system and operating their own open research platform for publications, as the Gates Foundation, the Wellcome Trust, the African Academy of Sciences, and the Association of Medical Research Charities (UK) do.

- encourage transparent publication of peer review reports alongside published research outputs. Many unscrupulous editors and commercial journals wave manuscripts through with poor quality review, yet charge libraries high subscription prices for these 'services', which add little value. Federal agencies must shine a light on the peer review process to keep it honest, and to keep the cost of facilitating peer review as a service proportional to the quality of that service.

We thank you for your consideration of this important topic.

Respectfully,

Lisbet Rausing and Peter Baldwin, Arcadia Fund

Supporting References:

[1] Daisy Larios, Thomas M. Brooks, Nicholas B.W. Macfarlane, Sugoto Roy (2020) Access to Scientific Literature by the Conservation Community. *bioRxiv* <https://doi.org/10.1101/2020.03.30.010058>

[2] Richard Fuller, Jasmine Lee, James Watson (2014) Achieving Open Access to Conservation Science. *Conservation Biology* <https://doi.org/10.1111/cobi.12346>

[3] Boudry et al. (2019) Worldwide inequality in access to full text scientific articles: the example of ophthalmology. *PeerJ* <https://doi.org/10.7717/peerj.7850>

[4] Zak Kallenborn (2018) Academic Paywalls Harm National Security. *Defense One* <https://www.defenseone.com/ideas/2018/12/academic-paywalls-harm-national-security/153553/>

May 5, 2020

BY ELECTRONIC SUBMISSION

Dr. Kelvin K. Droegemeier
Director, Office of Science and Technology Policy
Eisenhower Executive Office Building
1650 Pennsylvania Avenue, NW
Washington, DC 20504

Response to OSTP Request for Information – FR Doc. 2020-06622 – “**Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research**”

Dear Dr. Droegemeier:

The Arthroscopy Association of North America is grateful for the opportunity to respond to this request for information. In particular, we write to caution OSTP against adopting a policy mandating the free distribution of peer-reviewed manuscripts earlier than one year after publication.

Founded in 1980, the Arthroscopy Association of North America (AANA) is an international professional organization of almost 6,000 orthopaedic surgeons and other medical professionals who are committed to advancing the field of minimally invasive orthopaedic surgery to improve patient outcomes. The mission of the Arthroscopy Association of North America is to advance the art and science of arthroscopy and minimally invasive surgery through education, skills assessment and advocacy.

Arthroscopy: The Journal of Arthroscopic and Related Surgery is the official journal of AANA. The mission of *Arthroscopy* is to be the world's most authoritative and most current source of peer-reviewed clinical and basic-science information regarding arthroscopic and related surgery. Every issue enables the reader to put into perspective the usefulness of the various emerging arthroscopic techniques. The advantages and disadvantages of these methods - along with their applications in various situations - are discussed in relation to their efficiency, efficacy and cost benefit.

Arthroscopy Techniques is a peer-reviewed, open-access electronic journal which aims to provide arthroscopic and related researchers and clinicians with practical, clinically relevant, innovative methods that could be applied in surgical practice. *Arthroscopy Techniques* combines precise text, clear figures, and educational videos in a multimedia format designed to introduce surgical modifications in a manner whereby they may be thoroughly and critically evaluated.

Arthroscopy, Sports Medicine, and Rehabilitation (ASMAR), an open-access electronic journal, aims to peer review and publish clinical and basic science articles of interest to health care providers and scientific researchers. *ASMAR* is broad in scope and covers topics ranging from arthroscopic and related surgery to orthopaedic and primary care sports medicine, physical therapy and rehabilitation, athletic training, musculoskeletal imaging, economic and large database analyses and public health.

Ultimately, we strive to support the progress of science by producing and broadly disseminating the highest quality peer-reviewed journals possible. Publishers and societies have worked to strengthen scholarly communication and promote open science. However, it is critical that these efforts take place within a framework that respects intellectual property rights and our ability to invest in high-quality publications, and that does not hinder researchers from communicating their discoveries.

AANA is currently deeply engaged in efforts to respond to the COVID-19 pandemic. We are concerned **that OSTP's significant new regulatory proposal is a distraction from our ongoing efforts to respond to the current crisis and would undermine our stability and undercut our ability to respond to future health crises.**

As you are aware, federal agencies currently require that peer-reviewed manuscripts be made freely available online—within one year of publication—if they discuss research funded at least in part by a government grant.¹ This policy represents a significant compromise that balances our shared goals of providing broad access with the need for our organization to recoup the substantial investments we make in the peer-review, editing, publication, distribution, and long-term stewardship of these articles. This one-year compromise contrasts with the length of a full copyright term of life-of-the-author plus 70 years. Importantly, **this compromise reflects Congress' guidance (in the authorizing legislation for the current policy) that the Administration must "take into consideration the role that scientific publishers play in the peer review process in ensuring the integrity of the record of scientific research, including the investments and added value that they make."**²

Reducing or eliminating the current one-year embargo would significantly jeopardize our organization's ability to invest in producing the high-quality peer-reviewed journals that our readers in the orthopaedic community rely on. In so doing, such a policy would contravene Congress' clear guidance to take our role and investments into consideration. Furthermore, such a policy would directly result in a reduction in either the quantity or quality (or more likely, both) of peer-reviewed journal articles produced by hundreds of organizations like ours.

This would not only be harmful to the research enterprise, it would also be harmful to the patients, medical professionals, scientists, engineers, the general public who are the ultimate beneficiaries of the scholarly journals we produce.

¹These policies were developed pursuant to OSTP's requirement that agencies "shall use a twelve-month post-publication embargo period as a guideline for making research papers publicly available . . ." See OSTP Memorandum on "Increasing Access to the Results of Federally Funded Scientific Research" (Feb. 22, 2013).

² America COMPETES Reauthorization Act of 2010, Section 103(b)(9), available at: <https://www.congress.gov/111/plaws/publ358/PLAW-111publ358.pdf>.

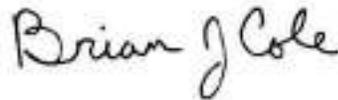
We urge you not to disrupt our ability to support the advancement of research patient care in orthopaedics, and we look forward to working together to identify solutions that advance the goals of open science without undermining the communication of research findings and analyses through peer-reviewed journals.

Thank you again for the opportunity to submit these comments.

Sincerely,



Larry Field, MD
President, AANA



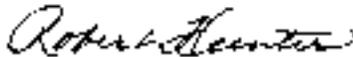
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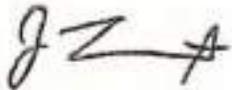
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May 5, 2020

Lisa Nichols,
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Executive Office of the President
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1650 Pennsylvania Avenue
Washington, DC 20504
publicaccess@ostp.eop.gov

Submitted Electronically

Re: Request for Information: Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research

Dear Assistant Director Nichols:

On behalf of our more than 100,000 member physical therapists, physical therapist assistants, and students of physical therapy, the American Physical Therapy Association appreciates the opportunity to submit comments to the Office of Science and Technology Policy in response to its request for information on Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting from Federally Funded Research. APTA, as part of its role leading the physical therapy profession, publishes the leading international journal for research in physical therapy and related fields, Physical Therapy, also called PTJ. PTJ publishes research for both clinicians and scientists with the expressed purpose of improving patient care.

APTA offers the following comments in response to the request for information:

PTJ uses a hybrid subscription model, whereby authors have the option to publish their work under an open access license. Last year PTJ published 151 articles; of those, only nine authors published their work under an open-access license, and less than 5% of the journal's total net income was from article processing charges that support these licenses. A further 80% was from the subscription part of its hybrid model. For more than a decade, a part of this model is the process of giving pro-bono access to all PTJ content after a 12-month embargo. Therefore, without the income from subscriptions, or without it being replaced, PTJ may not be able to afford to continue this practice. In addition, PTJ's total income covers production costs with only

minimal surplus, which is invested back into the journal so that it can support the in-depth peer review essential to ensuring that U.S.-based research makes an impact.

One step the federal government could take to ensure that taxpayer-funded research results are freely and publicly accessible — while also protecting journals' ability to sustain themselves — is to mandate that funding bodies include sufficient funds to cover the article processing charges of any journal that authors select. Currently, private funding bodies such as the Gates Foundation and the Wellcome Trust already cover these costs at sufficient levels when funding research. (For PTJ alone, this amount would have been a minimum of \$284,000 for 2019, given 142 non-open-access articles and PTJ's U.S. article processing charges of \$2,000 for society members or \$3500 for nonmembers.) Should the federal government fail to cover these costs, the result would be authors having to publish their work in certain journals based on their article processing charges, rather than on the appropriateness of the journal for the content of the research. Accordingly, the most relevant scientific information would not appear in the most relevant journal; and the clinicians, scientists, and members of the public who need the information the most would not be aware it existed.

Given the above, APTA encourages OSTP to embrace the concept of transformative read-and-publish deals as a way to enable the gradual transition away from a subscription model to a fully open-access model. This would allow PTJ and other journals to receive some income toward subscriptions and some toward article processing charges bundled into a single contract with our publisher, rather than being addressed ad hoc by individual authors who are choosing open-access licenses and incurring these charges.

Most read-and-publish contracts have a goal of full open access for authors in participating institutions over a year-year period, which is a timeframe that allows journals, societies, and research-intensive institutions to plan and adapt. As indicated earlier, a sudden shift to open access would force journals and publishers into a position in which they may not be able to maintain their peer review and publishing operations, which would result in less choice for authors, less quality in research products, and less robust content for consumers.

APTA also encourages the federal government to adopt policies that will allow data, methods, code, and other content to be captured in a standardized manner and made publicly available. Some scientific fields have already taken steps to secure such content, but without a policy mandate, the evolution will continue at a very slow pace. With so many emerging models, it's important to focus on ensuring that this information is captured in standard ways that are interoperable and not proprietary to any single market segment. To do so, APTA recommends that the federal government, as well as private sources of research funding, collaborate with and take advantage of the expertise of publishers, who have led the way in developing these kinds of standards and infrastructure to support interoperability models.

Conclusion

The public may be able to find content anywhere, but PTJ is a trusted brand that provides essential information to the physical therapists and rehabilitation professionals who care for U.S. citizens. APTA, therefore, encourages OSTP to support transformative read-and-publish

agreements as a way to both increase the public's access to content and sustain critical journal operations.

APTA thanks OSTP for the opportunity to comment on the request for information. We look forward to working with OSTP to ensure that the most critical scientific research in the physical therapy field is published to the highest standards and made widely available for public consumption. Should you have any questions regarding our comments, please contact Kate Gilliard, senior regulatory affairs specialist, at 703/706-8549 or kategilliard@apta.org.

Sincerely,

A handwritten signature in cursive script that reads "Sharon L. Dunn".

Sharon L. Dunn, PT, PhD
Board-Certified Orthopaedic Clinical Specialist
President

SLD: kwg

Wolters Kluwer RFI Response: Public Access

Wolters Kluwer appreciates the opportunity to share its views in response to the Office of Science and Technology Policy's (OSTP) request for information (RFI) regarding Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting from Federally Funded Research. This is an important opportunity to build on the discussions of this topic during January's meeting between publishers and OSTP. Wolters Kluwer's responses to each question of the RFI are set out below, but we wanted to highlight four key topics.

First, Wolters Kluwer does not believe that eliminating or reducing the current embargo on public access to federally funded research would have any significant impact on the speed or quality of the clinical protocols we generate. However, without careful planning and analysis a change to the current embargo would have a detrimental effect on our ability to support the full range of clinical research from both funded and unfunded authors. Second, a number of key barriers exist to allowing researchers to efficiently mine data, including: a lack of databases where researchers can deposit data; wide variation of data from one discipline to another; critical issues of data ownership that must be addressed; conflicts between the strict protection of health data and principles of open science and data; and a lack of global consensus on how to openly share data from multinational clinical research studies. Third, any move to more open access will need to provide support for the journal ecosystem that provides tremendous value to clinical research. Fourth, as the precise costs and benefits of immediate public access are not clear, we urge the federal government to conduct a cost-benefit analysis before moving forward with such a policy.

- 1. What current limitations exist to the effective communication of research outputs (publications, data, and code) and how might communications evolve to accelerate public access while advancing the quality of scientific research? What are the barriers to and opportunities for change?**

Clinical research would be more effective if the data and any code were curated, stored and linked to the papers that were the output of the research. New artificial intelligence ("AI") tools would be able to crawl the data from multiple studies undertaken by different groups to assess the reproducibility of the research. It would also be possible then to include data in systematic reviews and meta-analyses to enhance the creation of clinical insights and thus guidelines for clinical care. Currently, systematic reviews access only peer-reviewed research papers through aggregated resources and comprehensive abstract databases.

Wolters Kluwer's Chief Medical Officer does not believe that reducing the current embargo would have any appreciable impact on the speed or quality of the clinical protocols that we generate. Wolters Kluwer produces a widely used clinical decision support tool that is designed to reduce the variability of care in the US healthcare system. No single paper has the ability to change clinical practice, it would need to be

combined over time into systematic review and meta-analyses before it would have an impact on clinical practice.

There are multiple barriers to creating a system that will allow researchers to mine data, including the following:

- a. **There are only a few databases where researchers can deposit data.** Probably the most important one for clinical research is ClinicalTrials.gov. A recent study on the repository over the last 10 years (10-Year Update on Study Results Submitted to ClinicalTrials.gov Zarin, D A, Fain, K M, Dobbins, H D, Tse, T, and Williams R J *New England Journal of Medicine* 381;20 November 2019) has shown that the number of researchers depositing trial results is far lower than the total number of registered US trials conducted. The study identified a pain point in the time and complexity of depositing data. It was noted that often data is the only output of a trial and there is no traceable publication associated with it even 2-4 years after the trial completes.
- b. Some very specific clinical areas have been attempted (see for example NCTN Data Archive (<https://nctn-data-archive.nci.nih.gov/>) which contains all Phase 3 data trials after 2015). Data varies widely from one clinical area to another, with outputs ranging from scans, images, measurements, statistical data, patient data, etc. **Each discipline will need its own dedicated database for depositing and managing data outputs.**
- c. **Data ownership needs to be addressed.** Does the data belong to the group that funded the study, to the researchers or clinicians that took part, or to the patients themselves? What consent needs to be given to allow data to be shared widely and openly? Often pharmaceutical companies “own” the data output from clinical research and they would need to be involved in any effort to make this data more open. Would pharmaceutical companies be prepared to share proprietary data potentially with competitors both domestic and foreign? Would foreign pharmaceutical companies also be prepared to share their data or would this put the US at a disadvantage? If data cannot be copyrighted, then there is a clear incentive for researchers and organizations that fund them to preserve the privacy and security of the data they generated.
- d. **Patient confidentiality is critical in light of the Health Insurance Portability and Accountability Act’s (HIPAA) strict guidance on what can and cannot be shared openly.** In many cases, if patient data is to be useful for new research it needs to be more complete than can be shared publicly. Who would be able to manage and oversee patient data in a confidential way and manage access? If a patient’s right to privacy is violated, who will take responsibility – the data host, the researcher or the funder? **These concerns run counter to the principles of open science and open data sharing.**
- e. Many clinical research studies, particularly clinical trials, are conducted across many clinicians in multiple countries. **How can we reach a global consensus on how to share this data openly?**

Once data repositories have been established, we believe that publishers of all kinds will swiftly put in place protocols for requiring compliance with data rules from our authors. This compliance is unlikely to happen without systems and processes in place to facilitate it.

2. What more can Federal agencies do to make taxpayer funded research results, including peer-reviewed author manuscripts, data, and code funded by the Federal Government, freely and publicly accessible in a way that minimizes delay, maximizes access, and enhances usability? How can the Federal Government engage with other sectors to achieve these goals?

The current publishing landscape for clinical research is a mixed economy with revenue coming from subscriptions, both domestic and overseas, and from pharmaceutical companies and medical device manufacturers. A move to open a substantial part of a journal's content will need to be able to provide at least some income to support the journal ecosystem. Journals provide tremendous value to clinical research, including peer review, editorial oversight and content curation, content enhancement, and hosting and dissemination, including deposit where appropriate in PubMedCentral.

Submission fees are one possible model, but it would likely need to be adopted universally to ensure a level playing field. How would we support authors who do not have any means of funding even submission fees? Wolters Kluwer requires authors to state their sources of funding for articles that we publish and many declare no support. And with less than 5% of our authors opting for open access through the payment of author fees, we assume that funding for that approach is very limited.

Article processing charges ("APCs"), Gold Open Access, are a fair and transparent way to achieve immediate open access to published research. The ability to publish as open access using APCs is widely available and well supported across the publishing industry. Currently, authors can opt in or not as they choose as soon as their article has been accepted for publication. This means there is no penalty or cost for submitting to more than one journal to achieve acceptance for publication. Publishers provide the ability to link within the article to data repositories, or their own supplemental data. However, there is no consistency for how this might work and a lack of places for data hosting.

No single publisher, nor the professional associations for whom they publish, has the scale to be able to create the multiple data repositories that would be required across even clinical research. However, we would welcome the opportunity to work with the federal government and our association partners on pilot projects to set up and support such data repositories.

As the publisher of over 300 journals, primarily clinical research titles, Wolters Kluwer is keen to support the security of the final version of record and its role in preserving high quality evidence-based patient care. If earlier versions of a paper are available openly,

these need to be clearly linked to the version of record with the appropriate disclaimer that the paper cannot be used in clinical practice or patient care without checking that the version of record does not have significant changes or has been retracted for some reason.

3. How would American science leadership and American competitiveness benefit from immediate access to these resources? What are potential challenges and effective approaches for overcoming them? Analyses that weigh the trade-offs of different approaches and models, especially those that provide data, will be particularly helpful.

The benefits of immediate open access are not clear; however, there will certainly be costs associated with such a policy. Thus, it is incumbent on the federal government to conduct a cost-benefit analysis to determine not only the impact such a policy would have on the quality of research and journal publications, but also the costs to the government in the form of direct subsidies to publication. The Office of Information and Regulatory Affairs (OIRA) is well-positioned to conduct such an analysis. Alternatively, each federal agency affected by the policy should undertake a rulemaking, pursuant to the Administrative Procedure Act (APA), to ensure that input from the public and industry stakeholders are appropriately considered.

Funding is also a challenge that can be overcome by making the present system more effective and efficient. More sources of funding would also improve the present system.

We would recommend that the first step be a broader approach to data deposit. There are a number of challenges that we need to overcome. The first major challenge is the availability of suitable repositories. These need to be discipline-specific and the type of data required from a study needs to be defined by a community body to ensure that it can be used and enhanced. Wolters Kluwer would be keen to work with others on at least one such repository to help scope out what is needed to make these a success.

The second major challenge is compliance. We could consider a model for helping researchers to deposit data as part of their article processing charge.

4. Any additional information that might be considered for Federal policies related to public access to peer-reviewed author manuscripts, data, and code resulting from federally supported research.

It is critical that any federal public access policy preserve the quality of peer review, a robust system for ensuring retractions and tracking them to maintain the integrity of the final version of record, and a robust mixed economy that provides authors with publishing options.

Current clinical journal subscriptions contain a lot of content that is derived from funders—either from taxpayers or others. This is particularly true with nursing clinical content. It is imperative that we retain a viable output for research needed for authors who cannot afford article processing charges.

It is clear from the published literature that neither data nor publications alone can help advance clinical research. Data is very important in helping a researcher to understand and judge the quality of the insights that have been gained from a piece of research. However, viewing data alone without the accompanying paper does not tell the whole story. The researcher needs more details about the protocols used before building on a single data set.

There is a robust and well understood ecosystem for peer reviewing, validating and disseminating articles. We need a similar robust system for depositing, curating and giving access to the data output from research. A collaboration between the federal government and stakeholders in the publishing space could drive forward the usability of research by setting out to solve some of these problems together.

Wolters Kluwer would like to thank OSTP again for engaging us on this issue and we look forward to continuing a productive dialogue.

Frontiers Media Inc.

Response to OSTP Request for Information:

Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting from Federally Funded Research – May 2020

1. *What current limitations exist to the effective communication of research outputs (publications, data, and code) and how might communications evolve to accelerate public access while advancing the quality of scientific research? What are the barriers to and opportunities for change?*

Open Access to scientific evidence benefits science, industry, and taxpayers

The COVID-19 public health emergency has demonstrated once more the urgent need for immediate access to reliable scientific evidence. The availability of research results for all groups and sectors that can use the knowledge to develop responses should be the default and is an essential part of the preparedness strategy for future challenges facing the nation.

Open Access (OA) publishing of peer-reviewed scientific literature is a critical part of providing public access to federally funders research.

Open Access to the results of publicly-funded scientific research provides real benefits — not only to the research community that will work upon this foundation of knowledge, but to all parts of society, including to those who build new business based on technological innovation. Funders, universities, and research organizations worldwide have recognized these benefits and included the principles of open access into strategies, guidelines, and mandates. **Open science provides a better return on investment for research funding.**

Closed access models prevent harnessing the full benefits of digital technology

While Open Access publishing of peer-reviewed scientific results is growing globally (provide data), a team of American scientists estimated that today 69% of scientific articles were still published behind paywalls in journals that charge a fee to access the research (Piwowar; Priem; Orr. 2019)¹.

¹ <https://www.biorxiv.org/content/10.1101/795310v1>

The dominant infrastructure for the registration, validation and dissemination of scientific knowledge remains an artificially restricted subscription-based system in which universities pay subscriptions to scholarly publishers to access their scientific journals. This business model, a legacy of the print-based era, imposes “paywalls” that perpetuate the limitations of hard copy dissemination and copyright control into the digital domain – limiting digital access to those who can afford subscription fees.

This closed, subscription-based system is **a bad deal for society on many levels:**

- It restricts access to the results of publicly-funded research, a public good, to only a small number of academics working at those institutions that can pay for access via journal subscription, to the detriment of all others, including poorer institutions, businesses and start-ups and citizen scientists – thereby eliminating the possibility for a level playing field in the dissemination of scientific knowledge.
- By limiting knowledge dissemination, it hampers technological innovation. It therefore offers US taxpayers very poor value for money, by curtailing the substantial return on investment that publicly funded research should yield through innovation.
- It impedes powerful, digitally-enabled research methods such as text and data mining (TDM: the automated computational analysis of content), which have the potential to transform scholarly research by allowing researchers to exploit the vast and exponentially growing datasets that exist internationally.
- It underpins a universally criticized researcher evaluation system – for both researchers and their institutions – that is based on the prestige of the journal in which an article is published, rather than the impact of specific articles and authors.
- Its commercial model limits the range of services that libraries can provide to scholars by locking libraries into a limited number of “Big deal” subscription packages (that bundle high and low value journals) that tie up substantial portions of library budgets for multi-year periods to the frustration of librarians.
- In addition to these detrimental effects, the subscription-based model is also problematic for competition within the scholarly publishing market. The traditional scholarly publishing sector shows low competitive pressure due to very high market dominance by a small number of players; weak rivalry between them; weak

bargaining power of suppliers and buyers, and high barriers to market entry for new players.²

In contrast, many have appreciated the benefits of Open Science for society: accelerated discovery, innovation, economic growth, and job creation.

Our analysis of the available data demonstrates that Open Access journals outperform traditional closed access journals on citation metrics and deliver higher impact for authors.³ Open Access articles are picked up faster and used more frequently by other researchers, by industry and by other sectors of society (e.g. patient organizations, hospital staff, etc.) thereby helping to accelerate application of knowledge, innovation, and further discovery.

- 2. What more can Federal agencies do to make tax-payer funded research results, including peer-reviewed author manuscripts, data, and code funded by the Federal Government, freely and publicly accessible in a way that minimizes delay, maximizes access, and enhances usability? How can the Federal Government engage with other sectors to achieve these goals?*

Open Access fully leverages America's scientific and innovative potential

US Federal Agencies can help strengthen America's global leadership in science and innovation by **introducing policies to make it mandatory for results of research that received public funding to be published in peer-reviewed Open Access formats.**

If the benefits of Open Access were fully applied in scholarly publishing:

- Every published article would be immediately and fully accessible free of charge to all interested parties, from professional colleagues to citizen scientists and industrial innovators. Every actor in science and R&I would (subject to patent rights for non-academic use) be free to use, reuse and forward the work to colleagues through any channel without fear of infringing the law.
- Every published article would be database-compatible and would enter a corpus of work in which all articles and data were prepared according to a standard structured format that allows TDM to fully benefit R&I.

² Björk B-C. Scholarly journal publishing in transition - from restricted to open access. *Electronic Markets* 2017;27:101-9.

³ <https://blog.frontiersin.org/2018/07/11/scientific-excellence-at-scale-open-access-journals-have-a-clear-citation-advantage-over-subscription-journals/>

- Every article would be full text indexed for optimal discovery and access via Google and other search engines.
- The chain of accountability and quality guarantees of the publication's peer-review validation and production would be certified in a transparent manner.

Public access to US science through Open Access publishing is in the interest of the US because it helps showcase US science on a global level. Such policies for mandatory Open Access would also be aligned with other recent US policies and priorities such as Artificial Intelligence as laid out in the White House Executive Order on Maintaining American Leadership in Artificial Intelligence of 11 February 2019.

OA publishing models are less costly overall to taxpayers than subscription models, yet they leverage the benefits of digitization better and can offer equal or superior quality. Given these benefits, the slowness of the transition to OA models may indicate a market in which competition is not working as it should. **It is an appropriate moment, therefore, to consider whether competition is working optimally in these markets.**

- 3. How would American science leadership and American competitiveness benefit from immediate access to these resources? What are potential challenges and effective approaches for overcoming them? Analyses that weigh the trade-offs of different approaches and models, especially those that provide data, will be particularly helpful.*

We consider OA to publicly funded research a priority for maintaining US leadership and competitiveness.

Access to research results has clear advantages for a range of industries and stimulates economies. Increased access to research results has been associated with considerable increases of return on financial investment.⁴

In addition to its benefits on scientific knowledge dissemination, a fully OA market will help improve competition within digital scholarly publishing.^{5 6 7} This is because the APC OA

⁴ Beagrie N, Houghton JW: The value and impact of data sharing and curation: A synthesis of three recent studies of UK research data centres. 2014.

⁵

https://www.jisc.ac.uk/sites/default/files/academic_journal_markets_their_limitations_and_the_consequences_for_a_transition_to_open_access_0.pdf

⁶ Björk B-C. Scholarly journal publishing in transition - from restricted to open access. Electronic Markets 2017.

⁷ Johnson R, et al. Towards a Competitive and Sustainable OA Market in Europe - A Study of the Open Access Market and Policy Environment. Research Consulting/OpenAIRE. 2017

model is more transparent, more price sensitive and more innovative towards improved efficiency and competition than the subscription-based model.

As the UK expert body and digital services provider, Jisc, has acknowledged, ‘the success of diverse new publishers in the OA market is evidence that this market features high levels of innovation, new technologies and business models that enable new entrants to operate at scale and to compete with incumbents (Jisc 2016). Peer-review and quality control processes for Open Access journals are at least as rigorous as those of closed-access titles.

This is evidenced by the collective scholarly publishing market shares of PLOS (7%), MDPI (5%), Hindawi (5%) and Frontiers (4%) – all of which have been in existence for less than 25 years (Newman et al. 2018)⁸. Pure OA publishers have captured approximately 15% of the market by volume, at a revenue share of only 5%, illustrating the superior value of these high-quality digital-based services.

A new generation of high-quality digital OA publishers, operating with a business model different to that of traditional publishers, has demonstrated that the natural benefits of digitization are easily within our reach. As a group these publishers (including Frontiers) have been at the vanguard of innovation, fully leveraging the benefits of the digitization revolution to deliver high-quality OA publishing services at scale, to facilitate data sharing and TDM, and to measure the impact of scholarly publishing through novel metrics.

Some of the traditional subscription-based publishers have recognized the increased demand for and potential of OA publishing and are beginning to shift their traditional business models towards models that provide public access. Constructive dialogue with all parties should accompany the introduction of mandatory OA policies.

6 May 2020

⁸ <https://www.simbainformation.com/Open-Access-Journal-11347676/>



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■ (301) 565-6710

May 5, 2020

Dr. Lisa Nichols, Assistant Director for Academic Engagement
Office of Science and Technology Policy
Executive Office of the President
Eisenhower Executive Office Building
1650 Pennsylvania Avenue
Washington, DC 20504
Sent via email to: publicaccess@ostp.eop.gov

Dear Dr. Nichols,

On behalf of the Population Association of America (PAA) (www.populationassociation.org), I am writing in response to the Office of Science and Technology Policy's (OSTP) *Request for Information: Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research*. We appreciate the opportunity to respond to questions that the RFI posed regarding public access to federally funded research.

PAA represents over 3,000 population scientists, including demographers, economists, and sociologists, who study the implications of population change. Our journal, *Demography*, which has been in publication since 1964, is the premier peer-reviewed academic journal covering issues related to population and demography. *Demography*, however, is not the only mechanism by which our field shares significant findings. Population scientists embrace data sharing as a core principle and make data, particularly from federally funded, large-scale datasets, such as Health and Retirement Study, Fragile Families and Child Well Being Study, and Panel Study of Income Dynamics, readily accessible to the public. Our organization has cooperated with earlier efforts to enhance public access to federally funded research findings. And this commitment continues: PAA is eager to work with OSTP to further improve public access to federally funded research, provided practical as well as scientific equity issues are addressed.

But along with a commitment to public access, PAA is also committed to rigorous scientific peer review. Strong peer review is a central feature of the American scientific research enterprise and without doubt has been an essential ingredient in the production of outstanding science by U.S. universities and research organizations. The editorial board of PAA's journal *Demography* adheres to strict standards to ensure the publication of outstanding peer reviewed population research findings. *Demography* provides a platform for not only publishing research conducted by population scientists, including early stage investigators, but also for making population research findings readily available to scholars at all research institutions, including underserved institutions.

Strong peer review comes with financial cost: rigorous scientific peer review requires an editorship that possesses the resources for the time and effort demanded by peer review (and, further, the eventual production of journal articles). In the case of the journal

of our association, *Demography*, the annual costs of editorship and production are on the order of \$200,000. Our current “business model” is to cover this cost with the royalties returned from the publisher (Springer). Once immediate open access to federally funded publications is required, we anticipate these royalties will sharply decline or disappear altogether.

The main point is simply this: in order to protect rigorous peer review as a bedrock principle of science in the U.S., we are cautioning against an abrupt transition to immediate access. Even under the best circumstances, it would be difficult for PAA to move quickly towards a new business and revenue model. It is especially difficult now: like most every scientific association, PAA was compelled to cancel its 2020 annual meeting due to the COVID pandemic. This significantly depleted our financial reserves. During these unprecedented difficult circumstances, it is hard to see how we could quickly conform to a new publishing embargo policy affecting almost half of the articles that *Demography* publishes. Surely practical fiscal considerations must be factored into any decision that the Administration makes regarding policies affecting enhanced public access to federally funded publications, data, and code. The viability of scientific associations such as the Population Association of America is at stake.

The OSTP RFI posed several questions that our response inherently addresses. Direct responses to these questions, nonetheless, are listed below.

- *What current limitations exist to the effective communication of research outputs (publications, data, and code) and how might communications evolve to accelerate public access while advancing the quality of scientific research? What are the barriers to and opportunities for change?*

We do not believe the dual problems of communication of findings from federally sponsored research and access to pertinent research materials is as severe as this question implies. Communication of important findings is typically immediate and ubiquitous, through traditional media and social media. As for barriers that scientists face in accessing the research of other scientists, scientists based in academic and non-academic institutions have immediate access to scientific journals through institutional subscriptions. To the extent genuine barriers exist, it should be noted that in addition to practical, financial barriers, there are technical and ethical barriers that inhibit the acceleration of public access to federally funded publications, data, and code. PAA’s [response](#) to a related OSTP RFI addresses these barriers in greater detail.

- *What more can Federal agencies do to make tax-payer funded research results, including peer-reviewed author manuscripts, data, and code funded by the Federal Government, freely and publicly accessible in a way that minimizes delay, maximizes access, and enhances usability? How can the Federal Government engage with other sectors to achieve these goals?*

PAA believes that the model used by the National Institutes of Health (NIH) to make federal funded research findings available to the public through PubMed Central is a proven model that



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can be replicated across other federal agencies. PubMed Central is a free full-text archive of biomedical and life sciences journal literature at the NIH's National Library of Medicine. All NIH sponsored research is published in PubMed Central after a 12-month embargo. Likewise, the process NIH used to develop and implement its access policy should be considered as a framework for considering changes across the federal government.

• *How would American science leadership and American competitiveness benefit from immediate access to these resources? What are potential challenges and effective approaches for overcoming them? Analyses that weigh the trade-offs of different approaches and models, especially those that provide data, will be particularly helpful.*

Our response addresses this issue, but it is important to clarify that while making federally funded research findings immediately accessible sounds beneficial, it must be coupled with a maintaining of rigorous scientific peer review (with its attendant financial costs), as we argued above. This will ensure that published research is scientifically sound and worthy of consideration by other scientists as well as non-scientists. PAA makes one article per issue of *Demography* immediately available to the public, while, as our letter states, population scientists routinely make data from their federally funded surveys available to the public. The NIH is adopting policies, in part informed by the population research community, requiring grantees to make their data accessible to the public. These are approaches that PAA encourages OSTP to examine as it develops revised policies and practices.

Thank you for considering the views of the Population Association of America. Population scientists look forward to working with OSTP as you consider the many challenges a revised public access policy raises.

Sincerely,

Eileen Crimmins,
PAA President

From: Patti Fritz <pfritz@uwindsor.ca>

Sent: Tuesday, May 5, 2020 7:44 AM

To: MBX OSTP Public Access <MBX.OSTP.PublicAccess@ostp.eop.gov>

Subject: [EXTERNAL] Response to OSTP Request for Information - FR Doc. 2020-06622 - "Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research"

Patti A. Timmons Fritz, Ph.D., C.Psych.
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401 Sunset Avenue
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May 5, 2020

Dr. Kelvin K. Droegemeier
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Response to OSTP Request for Information - FR Doc. 2020-06622 - "Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research"

BY EMAIL SUBMISSION

Dear Dr. Droegemeier,

I am grateful for the opportunity to respond to this request for information. In particular, I write to caution OSTP against adopting a policy mandating the free distribution of peer-reviewed manuscripts earlier than one year after publication.

As a reader, researcher, clinician, author, teacher, and trainer of journals that publish cutting-edge research and research-informed clinically useful articles that move science and practice forward and help the human condition, especially among those suffering from anxiety, depression, alcoholism and other addictions, obsessive compulsive disorder, PTSD, and many other disorders, I depend on the journals, like Behavior Therapy and Cognitive and Behavioral Practice, made available by the Association for Behavioral and Cognitive Therapies in partnership with Elsevier.

As you are aware, federal agencies currently require that peer-reviewed manuscripts be made freely available online-within one year of publication-if they discuss research funded at least in part by a government grant. This policy represents a significant compromise that balances our shared goals of providing broad access with the need for our organization to recoup the

substantial investments we make in the peer-review, editing, publication, distribution, and long-term stewardship of these articles. This one-year compromise contrasts with the length of a full copyright term of life-of-the-author plus 70 years. Importantly, this compromise reflects Congress' guidance in the authorizing legislation for the current policy that the Administration must "take into consideration the role that scientific publishers play in the peer review process in ensuring the integrity of the record of scientific research, including the investments and added value that they make."

Reducing or eliminating the current one-year embargo would significantly jeopardize our editorial process that produces the high-quality peer-reviewed journals that our readers in psychology community rely on. In so doing, such a policy would contravene Congress' clear guidance to take our role and investments into consideration. Furthermore, such a policy would directly result in a reduction in either the quantity or quality (or more likely, both) of peer-reviewed journal articles produced by hundreds of organizations like ours.

This would not only be harmful to the research enterprise, it would also be harmful to the psychology researchers, clinicians, students, teachers, and clients who are the ultimate beneficiaries of the scholarly journals we produce.

We urge you not to disrupt our ability to support the advancement of research and patient care in mental health, and we look forward to working together to identify solutions that advance the goals of open science without undermining the communication of research findings and analyses through peer-reviewed journals.

Thank you again for the opportunity to submit these comments.

Sincerely,

Patti Timmons Fritz

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The University of Windsor sits on the traditional territory of the Three Fires Confederacy of First Nations, comprised of the Ojibwa, the Odawa, and the Potawatomi.

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5th May 2020

BY ELECTRONIC SUBMISSION

Dr. Kelvin K. Droegemeier
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Response to OSTP Request for Information – FR Doc. 2020-06622 – “Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research”

Dear Dr. Droegemeier,

World Scientific is grateful for the opportunity to respond to this request for information. In particular, we write to caution OSTP against adopting a policy mandating the free distribution of peer-reviewed manuscripts earlier than one year after publication.

World Scientific is a leading independent publisher of books and journals for the scholarly, research, professional and educational communities. Our mission is to develop the highest quality knowledge-based products and services for the academic, scientific, professional, research and student communities worldwide.

The company was established in 1981 and employs 200 staff at our headquarters in Singapore and 450 globally. We publish 140 journals in various fields and about 600 books annually. Our journals are specialized mostly in the STEM fields of studies. We collaborate with prestigious organizations like the Nobel Foundation and US National Academies Press to bring high quality academic and professional content to researchers and academics worldwide.

Ultimately, we strive to support the progress of science by producing and broadly disseminating the highest quality peer-reviewed journals possible. Publishers and societies have worked to strengthen scholarly communication and promote open science. We publish many fully open access (OA) journals and also encourage authors to deposit their non-OA publications in various preprint servers, repositories and scholarly collaboration networks. However, it is critical that these efforts take place within a framework that respects intellectual property rights and our ability to invest in high-quality publications, and that does not hinder researchers from communicating their discoveries.

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To help the global research community to fight against the COVID-19 pandemic, we took part in the Wellcome Trust's pledge to make all relevant peer-reviewed research publications immediately open access. We take a step even further by providing free access to all publications including books and book chapters to the general public on the prevention and protection against COVID-19.

Our organization is currently deeply engaged in efforts to respond to the COVID-19 pandemic. We are concerned that OSTP's significant new regulatory proposal is a distraction from our ongoing efforts to respond to the current crisis and would undermine our stability and undercut our ability to respond to future health crises.

As you are aware, federal agencies currently require that peer-reviewed manuscripts be made freely available online—within one year of publication—if they discuss research funded at least in part by a government grant. This policy represents a significant compromise that balances our shared goals of providing broad access with the need for our organization to recoup the substantial investments we make in the peer-review, editing, publication, distribution, and long term archiving and stewardship of these articles. Importantly, this compromise reflects Congress' guidance (in the authorizing legislation for the current policy) that the Administration must "take into consideration the role that scientific publishers play in the peer review process in ensuring the integrity of the record of scientific research, including the investments and added value that they make."

Reducing or eliminating the current one-year embargo would significantly jeopardize our organization's ability to invest in producing the high-quality peer-reviewed journals that our readers in the STEM community rely on. In so doing, such a policy would contravene Congress' clear guidance to take our role and investments into consideration. Furthermore, such a policy would directly result in a reduction in either the quantity or quality (or more likely, both) of peer-reviewed journal articles produced by hundreds of organizations like ours.

This would not only be harmful to the research enterprise, it would also be harmful to the general public, who are the ultimate beneficiaries of the scholarly journals we produce.

We urge you not to disrupt our ability to support the advancement of research and we look forward to working together to identify solutions that advance the goals of open science without undermining the communication of research findings and analyses through peer-reviewed journals.

Thank you again for the opportunity to submit these comments.

Sincerely,



Rick Lee Chi Wai

General Manager, World Scientific

From: Kyle Spafford <kyle.spafford@gmail.com>

Sent: Tuesday, May 5, 2020 12:32 AM

To: MBX OSTP Public Access <MBX.OSTP.PublicAccess@ostp.eop.gov>

Subject: [EXTERNAL] RFI Response: Public Access

To the Office of Science and Technology Policy (OSTP),

I am writing to voice my support for requiring the results of unclassified federally funded scientific research, including all manuscripts, data, and source codes, to be published in a publicly available open access platform.

This sensible policy accelerates scientific development and prevents the value derived from taxpayer-funded work from being lost or inaccessible.

Thank you,
Kyle Spafford
Accelerate Diagnostics
Tucson, Arizona

From: Jessica X. Chong <jxchong@uw.edu>

Sent: Monday, May 4, 2020 8:17 PM

To: MBX OSTP Public Access <MBX.OSTP.PublicAccess@ostp.eop.gov>

Subject: [EXTERNAL] RFI Response: Public Access

• What current limitations exist to the effective communication of research outputs (publications, data, and code) and how might communications evolve to accelerate public access while advancing the quality of scientific research? What are the barriers to and opportunities for change?

• What more can Federal agencies do to make tax-payer funded research results, including peer-reviewed author manuscripts, data, and code funded by the Federal Government, freely and publicly accessible in a way that minimizes delay, maximizes access, and enhances usability? How can the Federal Government engage with other sectors to achieve these goals?

Academic culture and its reward system provide effectively no benefit for researchers who spend time, energy, and resources (i.e., money) on making their research outputs widely available and reusable. The current mandates for data sharing in my field currently mandate a minimal amount of data sharing of a very small subset of data via NIH-run databases (typically dbGaP) but do nothing to ensure that the data is useful or that access to it is rapid.

Similarly it takes extra effort to post a manuscript on a preprint server and it is not mandated, so there is little incentive to most researchers to invest in doing so. Similarly researchers are not required to budget in their grants for making manuscripts open access, and even if they do, they are not likely to pay for the manuscript to be OA when that money could be repurposed towards more research efforts (which can lead to further funding).

Analyses, for example, of Plan S and similar proposals show that it is not enough to encourage data sharing/open access publication of results, nor is it sufficient to mandate these without providing funding. Instead, funding agencies need to require it AND fund it (e.g. provide dedicated funds that are grant add-ons and can ONLY be spent on open access publication in legitimate journals and/or data sharing efforts).

• How would American science leadership and American competitiveness benefit from immediate access to these resources? What are potential challenges and effective approaches for overcoming them? Analyses that weigh the trade-offs of different approaches and models, especially those that provide data, will be particularly helpful.

Supporting open access to research outputs will reinforce America's legacy as a world leader in innovation and productivity. It will help us and the world by making the data we generate available for others to reuse and build upon, while giving us the credit for generating the data that is foundational to future advances.

The current publication system hides the true costs of closed access/traditional publication by offloading the costs to universities and other journal subscribers, which are mostly academic groups. These universities in turn must pass the costs on, which typically means requesting higher indirect costs/funding along with their federal grants. In this way, the federal government pays repeatedly (for each research institutions) and in perpetuity (annual subscriptions) for access to the same articles. If the government paid up front for the publication to be open access (and even better for the data to be reusable and accessible with appropriate precautions), then it would only have to pay once and all American researchers would have access. The public would then also have access to the results of the research THEY paid for with their tax dollars.

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Ada Emmett
Lawrence Kansas

May 4, 2020

Dear Ms. Lisa Nichols,

I am responding to the Request for Information on Public Access, mentioned here, <https://www.federalregister.gov/documents/2020/02/19/2020-03189/request-for-information-public-access-to-peer-reviewed-scholarly-publications-data-and-code>. First, I am grateful that the Office of Science and Technology Policy, and members of the National Science and Technology Council's (NSTC) Subcommittee on Open Science (SOS) have collectively sought the comments of the general public, and extended (mercifully) the deadline to the May, 6th in light of this global health crisis. Thank you for seeking additional input and caring about how well the current public access policy works and how it might be improved. I appreciate the use of the term “consultation” in your RFI as well, indicative of a spirit of mutual concern and exchange of ideas.

A little about me: I am an academic librarian working at an R1 university in the Midwest. I chose to become an academic librarian and pursue my graduate degree in librarianship because I became aware of the inequities of access to the scholarly literature and realized librarians had a role in affecting change in that system of scholarly publishing. I write to you in my individual capacity and not on behalf of my employing institution.

Urgent society problems will, do, and have required immediate, collective, and wide-spread access to the latest research, in order to test it, build on it, and put the results into practice in an array of social and economic spheres. This current pandemic is a perfect example, but certainly there are and will increasingly be other global-scale problems that require urgent and immediate access to the latest research. Immediate access to the published research can only advance the progress in solving those sometimes entrenched or “wicked”, dynamic, complex, and global problems.

Below I would like to address my own personal and professional responses to parts of the questions posed in the RFI.

The consultation asks for input on 3 key questions.

1. What current limitations exist to the effective communication of research outputs (publications, data, and code) and how might communications evolve to accelerate public access while advancing the quality of scientific research? What are the barriers to and opportunities for change?

I am a taxpayer, a researcher, and partner to researchers, assisting them to find the research they need to advance their research programs and projects, and to maximize the scholarly publishing system so that their own research can be disseminated and built upon.

As a taxpayer, whose taxes fund the federal agencies that then fund researchers, and also whose state taxes fund the universities that pay the salaries of our researchers, it seems odd that “my” taxes support an endeavor that I then need to pay for again—in order to read the publications coming out of that research. If not for my affiliation with a modestly well-funded university, my access would rely solely on what is publicly accessible (via funding agencies with mandates like NIH’s and now OSTP’s) or by the author’s individual choices to publish in open access journals (with 30% of those or more with fees to the author) or reliance on open copies of the published papers placed in university repositories. The above access is not sufficient. Why should I as a taxpayer (or husband in the health care industry without access to expensive subscription journals) have to wait 12 months or more for access the most recent research funded by the federal agencies (e.g. using my tax dollars) or find random works posted in repositories (however grateful I am for them when I find them)? This is a fundamental question—especially since the work being funded is for the advancement of knowledge, solving critical social problems, and its applications are meant to better the society that I also live in.

In my role as a librarian and faculty member, I see too often that our modestly funded public university cannot afford to subscribe to the exorbitantly priced journals and journal packages, commercial publishers of such journals and packages that annual make 20-39% profit margins, taking those billions of dollars out of the public sphere. And when our university cannot subscribe to a journal, it either has to arrange interlibrary loan (for which it pays) for researchers, who have to submit each request, or the researcher has to use their networks of friends and colleagues, to find a copy, or worse, pay \$30 fee on the publisher’s website for an article that they won’t be sure they need until they read it. Researchers at underfunded institutions, (most of us will be that soon, if we are not already), unaffiliated researchers, practitioners in the field, and citizens, citizen/scholars, and unexpected readers who do NOT have subscriptions, may not have the means to afford \$30 per article when conducting deep research.

In this current pandemic we can see the immediate results of researchers not having access to research—as journals and publishers temporarily open up the access to their papers about this virus, after the fact. But what of other urgent, timely research?

The greatest barriers I see that researchers (and citizen- and practitioner researchers) encounter is the barrier of access to the literature and that the costs grow at a pace that far exceeds the GDP. For those of us who are at universities, the extremely high cost of subscriptions charged to the university (and therefore our students, whose tuition fees fund a large part of our public university’s budget) ties up more and more of our shrinking budgets, and much of those collection budgets now are tied up in large journal packages. When 15% of our collections budget goes to one Big Deal package with one of the largest five commercial publishers (those five being Elsevier, Wiley, Springer, Taylor & Francis, Sage) this locks up over a million and a half dollars of our budget. Each year the price goes up, and we now know that between 20 and 25% of the journals in those Big Deals we sign are NOT used, but we still have to pay for them.

And again, each of us that are affiliated with the university are also tax paying citizens who have paid up front for the research to be funded through those largest federal funding agencies that have the public access policies.

When students leave the university with their degrees, their hopes, their newly established habits of researching, they are also cut off from the subscriptions that we pay so much for, and are left with access to those publications that are made openly available by author choice, or by federal mandate, and that are older than 12 months.

2. What more can Federal agencies do to make tax-payer funded research results, including peer-reviewed author manuscripts, data, and code funded by the Federal Government, freely and publicly accessible in a way that minimizes delay, maximizes access, and enhances usability? How can the Federal Government engage with other sectors to achieve these goals?

Expanding the NIH-like public access policy to include the other federal agencies with R&D of over \$100 million dollars per year was an important first step, and test of how public access could be expanded beyond the NIH. It also provided clarity on the overlapping values of higher education and with the requirements of federal agencies to manage public monies, for the public. Higher education has, as one of its primary values, to discover and create new knowledge and disseminate it, and build upon it. The federal agencies have the value of funding research to benefit our society, and which then satisfies the public trust and use of public monies. NIH's public access policy has also proved that publishers would find a way to continue to make handsome profits even with such public access mandates.

Any researcher receiving federal funds should also want their research to be openly available immediately, (no embargoes), for the widest possible readership, for the widest possible impact, and for the chance that their research will be built upon, cited, and contribute to global efforts to solve the immensely complex problems we face. Frankly, all researchers and scholars want their work to be widely read and built upon.

The longer it takes for the access to be complete the slower the chance of applying that research to these global problems. The longer it takes for the scholarship to be accessible equitably the slower our collective chance to enhance, refresh, redesign the way we collaborate across the world in novel, interdisciplinary ways, using every resource at our collective disposal to perfect our analysis of and solutions to global, local, regional problems.

What more can Federal Agencies do: First, remove the embargo all together. I request that the embargo period of 12 months be reduced to 0—for immediate impact, for simplification of the access, and for the best chance that research published will be read and built on and put into practice as quickly as possible. And doing so not just for researchers at wealthy institutions that have cutting edge research, but also those researchers and students at underfunded institutions in the US, as well as our citizen-practitioners, small business owners, health care workers out in the field, and our partner researchers, scholars, and policy makers across the world.

The works should also be made available in ways that allow for text and datamining, so that the collective research can be mined across articles in effective ways. The works should also carry open licenses that make it clear what others can do with the work, (like a Creative Commons license). Creative Commons licenses make it clear to whoever finds the work, what is allowed in terms of sharing, mixing, adapting, so that our instructors at university can also know quickly

that they can use the work to build open textbooks, for example (with CC-BY or CC-BY-NC license), or a student can use a graph or chart in their thesis or dissertation with ease and in a timely way, for example.

In this way the openness isn't only to simply read one work at a time; but engage with using whatever technologies and tools are available to search, mine, and pull from many articles at the same time.

Regarding ways to foster partnerships between and among other sectors: our university library, for example supports over 40 journals, most of them 'open access' peer reviewed journals, some of these are society journals (about 15% of those we support) with whom our faculty have an association or membership and that needed an online home and support for their journal. University libraries and university presses have been growing these digital publishing services to create additional places to actively serve the larger communities of scholars, their societies, and the publics that we collectively are engaged with. Growing partnerships with federal agencies, charitable organizations, and universities could further enhance and diversify the scholarly publishing landscape. This is an opportunity to consider additional partnerships, additional support for those partnerships that enhance and improve the equitable access to the published and publicly supported research through zero-embargo, more open low-cost publishing venues (with no fees to readers OR authors), and innovative dissemination models with partners who have a vested stake and similar missions.

Support for and added partnerships in the scholarly publishing system can only enhance the vitality of that system. Various reports indicate that the top five publishers I mentioned early publish close to half of all scholarly journals. That nearly monopolistic commercial control over the scholarly content, and the access to that scholarship funded by tax payers, needs to be loosened, and a richer, more diverse publishing ecosystem encouraged.

3. How would American science leadership and American competitiveness benefit from immediate access to these resources? What are potential challenges and effective approaches for overcoming them? Analyses that weigh the trade-offs of different approaches and models, especially those that provide data, will be particularly helpful.

The prime benefit that immediate access gives to American science writ large and our competitiveness globally is to put us (back on) a level playing field with long standing partners and long-standing competitive antagonists. Much of Europe (the EU specifically but also individual countries in Europe) has robust open access mandates for all state-funded research, as well as China and India and many others. The US lags behind in this regard. Providing immediate (no embargo) access to the accepted manuscript of the research is doable (they do this in Europe) and less expensive than the European model (where states/institutions pay open access article processing charges). A shift to zero-embargo would begin to place us back on a level field with researchers across the world, some with very high publishing rates. We want our research to also be seen, built on, cited, and contribute to the well-being of the world, to solve our local and global problems.

Lastly, I want to thank you again for this call for comments. For many years researchers, patients' advocacy groups, taxpayer advocacy groups, universities, professional societies, and academic librarians have advocated for equitable access to the research that our citizens pay for and often contribute to, so that they, along with policy makers, practitioners, students, and future researchers can build on it. We have been advocating, with slow and steady progress being made, even in the face of powerful (and very influential) commercial parties whose business models and inherent values differ significantly from the research and scholarly endeavor. Although mutually entwined systems, we have different values and missions.

In closing, I ask that you consider extending and strengthening the public access policies, for the reasons above and for the better articulated and researched reasons that advocates for fair and equitable access have and will make in response to this RFI.

Warmly, and wishing you and your families safety and wellness!

Ada Emmett
Lawrence KS



Statement of **Copyright Clearance Center, Inc.**

in response to the OSTP's
"Request for Information: Public Access to Peer-Reviewed Scholarly Publications,
Data and Code Resulting from Federally Funded Research", 85 Fed. Reg. 9488 (2/19/20)

CCC welcomes this opportunity to provide comments and thanks OSTP for launching an inquiry into this important matter.

About Copyright Clearance Center (CCC)

CCC was founded at the suggestion of Congress during the run up to the US Copyright Act of 1976 to serve as an intermediary between copyright rightsholders and the users of others' copyrighted works for the efficient licensing of photocopy rights – the cutting-edge copyright-disruptive technology of its time. Today, CCC operates globally, representing digital and print rights of publishers and other copyright holders primarily from the US, but also from other countries.

We license and offer content for business use in the US and 187 other countries and, to a lesser degree, academic use in the US. Our business clients purchase our global sharing and reuse licenses, as well as copies of individual articles, all to ensure (re)use in a copyright-compliant manner. In the current (medical) research environment of high urgency – stemming from the challenges of responding to the COVID-19 pandemic – CCC expedites article availability, often at no-fee, when permitted to do so by the rightsholder. Through our software and professional services offerings, we provide businesses with semantic search capabilities, collection management and data integration services. We provide these services around – without limitation – publicly available subscription content, open content, and many forms of data, all of which may be used and integrated with user-developed and internal materials. We also provide information professionals and librarians on an outsourced basis to manage information and library departments in some of the world's largest and most research-intensive companies. For publishers, we offer licensing, professional services and ecommerce solutions, as well as educational support around issues such as copyright, metadata and open access. Our fastest growing business is managing the fee administration process on behalf of publishers who collect fees from authors, institutions, governments and other funding bodies to make articles available immediately as open access

Thus, as a business that manages libraries, represents publishers in licensing transactions, and integrates varied data sources on behalf of users and publishers, we offer a unique perspective on the issues at hand.

How Raw Data and Code Are Used to Generate Article Manuscripts

Most scientific peer reviewed articles represent the interpretation of the author(s) with respect to underlying data. For authors reporting on their own research, the first step is, of course, to perform research. The resulting research data itself is not generally protected by federal statute. Rather, it is protected – if at all – by restrictions placed on access. These can be express legal limitations, such as those afforded by licenses, trade secret or contract law. They can also be *de facto* limitations, such as when the data remains in the researcher's computer or private network.

Increasingly, this data is analyzed by software (or ‘code’). Software is protected under a number of legal regimes, primarily copyright. Software used to analyze research data may be (a) commercially available “off the shelf,” (b) custom software prepared by or for the researcher, or (c) some combination thereof. The availability of the software to others may have a direct impact upon the reproducibility of the results and upon the ability of others to perform similar research.

Once the data is analyzed by human or machine, the researcher draws inferences and reaches conclusions, and only then writes them up as a draft manuscript. At that point, the copyright is typically owned by the researcher. Although based on data, the researcher looks at the data through the lens of her own interests and experiences, which experiences may include biases, before finally coming to the conclusions she draws in the text of the draft paper. If she submits the paper to a journal, editorial staff at the journal will review it to determine if the science is methodologically sound and, particularly if published in a subscription journal with a fixed page budget, that it reaches a certain threshold of interest, importance or novelty.

The Business and Economics of Peer Reviewed Publishing

Even in the digital age, the costs of publishing increase over time. Printing costs have never been the driving force for P&L management, and publishers pay increasing amounts for everything from maintaining digital systems for peer review, to tagging and enriching content online, to performing online plagiarism detection, to promoting content and, crucially for science, maintaining trusted archives and the publicly available “official record” of scientific progress as disclosed in final articles (the “version of record” or “VoR”).¹

Subscription and Gold OA Models

Today, the two major business models used to underwrite publication costs for peer reviewed publications are (1) the copyright-based “subscription model”, and (2) the fee-paid, open-license based immediate “open access” model known as “Gold OA.”² Whether subscription, Gold OA or another model is used, the tasks involved in publishing as discussed in the preceding paragraph are the same.

The primary differences in economic terms between subscription and Gold OA publishing answer the question “who underwrites the costs of publishing?” In other words, “who pays?” In the subscription model, third-party scientists and their employers, including large commercial organizations, governmental research bodies and academic institutions both in the US and abroad underwrite the costs of publishing by buying subscriptions, purchasing legal copies of individual articles and paying licensing fees as required by copyright law for sharing and reuse. As mentioned above, CCC serves readers globally, spreading the costs of publishing to those users. Users apply the research discussed in published articles both to the development of new products and services and to more advanced research, all for the benefit of society.

¹ For a detailed document explaining the substantial value add to the scholarly publishing process by publishers, see “Focusing on Value – 102 Things Journal Publishers Do” on the Scholarly Kitchen blog by Kent Anderson, in Scholarly Kitchen (Feb. 6, 2018), <https://scholarlykitchen.sspnet.org/2018/02/06/focusing-value-102-things-journal-publishers-2018-update/>. For a detailed description of the scientific publishing market in general, see *The STM Report: An Overview of Scientific and Scholarly Publishing* (The “STM Report”) at https://www.stm-assoc.org/2018_10_04_STM_Report_2018.pdf.

² There are other models as well. For example, UKSG Insights, an open access information sciences journal for which I serve on the editorial board, is funded directly from the budget of the United Kingdom Serials Group. See also STM Report at 106.

In the Gold OA model, the costs of publishing are underwritten by the authors, typically out of grant funds, although sometimes from library budgets and/or through governments. In Gold OA, the entities making payments are the ones who fund the dissemination leading to beneficial outcomes.

We are neutral on whether the subscription model or Gold OA is “better.” Rather, we see well documented advantages and disadvantages in each model and support any model that is sustainable and serves the needs and advancement of science. These sustainable business models have enabled publishers to respond quickly to the need for validated content during the COVID-19 pandemic.³

Through our work helping to implement dozens of agreements between more than 30 publishers and more than 200 institutions, certain conclusions are apparent to us. First, most large to mid-sized commercial and society publishers who offer subscription journals also offer Gold OA at the article level. Many have stated that they have a goal to flip individual publications from subscription access to fully Gold OA, and some have already flipped all their publications to Gold OA. Moreover, publishers are engaged in many market-based arrangements with customers, and the business terms are often unique. Those who do not offer Gold OA tend to be smaller publishers and learned societies who may not be able to manage a transition, or who have less demand for Gold OA because of their discipline and funding, e.g., social science and nursing. Nevertheless, and most importantly, Gold OA is growing.⁴

How Do These Business Models Interact with the February 2013 OSTP Memorandum?

With publication costs underwritten by users, authors can comply with current OSTP policy under the subscription model by making an accepted manuscript freely available online within twelve months from publication. In contrast, under the Gold OA model, upon payment of a fee the author can make the final published VoR publicly available free of charge to the reader immediately after publication. It is important to remember that all final VoRs are, by definition, publicly available upon publication. The only difference is that for articles published on a non-Gold OA basis, non-subscribers must generally pay an access fee. These fees are typically less than \$50 per article and, in the biomedical context, many publishers readily waive the fee for individual doctors and patients who so request.

Q.1. What current limitations exist to the effective communication of research outputs (publications, data, and code) and how might communications evolve to accelerate public access while advancing the quality of scientific research? What are the barriers to and opportunities for change?

We support the February 2013 OSTP Memorandum’s call for plans to make data more open, including the use of data.gov. Science is facing a replicability crisis.⁵ In addition, humans bring bias into research. Machine learning and machine interpretation of data is subject to even greater risks of bias, both because flawed humans wrote the original software and select the input, and because algorithms may further amplify the bias.⁶ For science to be reliable, data must be available so that others can review it and identify errors in interpretations. Where code is involved in research, others should be able to review the code, instructions and input criteria to search for error and bias. For users to be able to trust

³ See, e.g., <https://www.copyright.com/coronavirus-covid-19/>. See also, <https://oaspa.org/scholarly-publishers-working-together-during-covid-19-pandemic/>

⁴ For growth data, see, Open Access Scholarly Publishers Association, <https://oaspa.org/growth-continues-for-oaspa-member-oa-content/>. See also STM Report at 133-141.

⁵ See, e.g., <https://www.theatlantic.com/science/archive/2018/11/psychologys-replication-crisis-real/576223/>. “Over the past few years, an international team of almost 200 psychologists has been trying to repeat a set of previously published experiments from its field, to see if it can get the same results. Despite its best efforts, the project, called Many Labs 2, has only succeeded in 14 out of 28 cases.”

⁶ See, e.g., What Do We Do About the Biases in AI? <https://hbr.org/2019/10/what-do-we-do-about-the-biases-in-ai>

open data, there needs to be some “dataset check-up” or other verification mechanism so that they can be sure the data has not been manipulated. Ensuring quality in this way is a function that publishers provide with respect to final VoRs for articles; in the absence of a licensing business model, however, they are unlikely to undertake this obligation for data. We note that the February 2013 OSTP Memorandum does not seek release of code, which we believe should be required when it is used in federally funded research, subject to third party copyrights. Without the code, replication becomes impossible in some cases. This will become dramatically more important as AI and machine learning grow in importance.

Additionally, we believe it critically important for the US to encourage publication of negative and null results from US funded research, along with the underlying data and code upon which such results are based.⁷ In times of pandemic, this necessary market intervention could prevent researchers from wasting time on failed theories.

Q.2. What more can Federal agencies do to make taxpayer funded research results, including peer-reviewed author manuscripts, data, and code funded by the Federal Government, freely and publicly accessible

The Federal Government should continue its efforts to make validated versions of raw datasets more available and accessible. Storage and cleanup of data, and management of related metadata, are often messy as researchers normally gather data only for their own use, and placing a burden on them to become data management experts is not always reasonable.⁸ Accordingly, we suggest that the Federal Government fund more expansive data partnerships, with commercial and/or open licenses depending on the data type, either under the aegis of government or through the private sector.

With respect to code, requiring agencies to develop openness policies would be a good first step.

With respect to peer-reviewed author manuscripts, accurate consideration of market needs is paramount. If we want quality publications, someone has to pay for them. There is a proven method in the market that gives immediate access to VoRs: *Gold OA*. Gold OA is a robust, ever-growing market-based solution, one resulting from negotiations and differing needs of authors, institutions, funders and governments. If the US wishes to pursue a policy goal of sustainable open access, it should fund Gold OA and develop educational programs to increase voluntary uptake of Gold OA. We recommend the establishment of collaborative pilots with a goal of reducing or eliminating the burden of compliance on authors. This is the best way to ensure immediate and full open access.

For articles appearing on a subscription basis, we urge the US to consider the admonition in the February 2013 OSTP Memorandum to “avoid unnecessary duplication of existing mechanisms.” Under the existing OSTP policy, these articles are made publicly available for purchase as VoRs on publisher websites on publication, and then deposited into repositories as accepted manuscripts for no-cost access after 12 months. This enables global users to underwrite the costs of publication without threatening a successful market-based model of dissemination. It is *possible* that a significantly reduced embargo period *may* lead to an acceleration of the switch to Gold OA. On the other hand, as the recent history of the newspaper industry demonstrates, uncompensated reuse of high-quality content online sometimes leads to unintended, and very negative, consequences for the continued production of such

⁷ See, e.g., this program in Germany; <https://www.timeshighereducation.com/news/scientists-offered-eu1000-publish-null-results#survey-answer>.

⁸ “To be usable, information must be documented, sorted, curated, shared and preserved [citation omitted], which places a burden on researchers but also on publishers and infrastructure providers. The former need to provide information in a suitable format, while the latter must provide technological solutions to enable research efforts.” STM Report at 153.

content.⁹ Again, as a vividly current example, publishers with valid business models – subscription and Gold OA – have been able to make validated research freely available in response to COVID-19 because they have business models that work.

Q.3. How would American science leadership and American competitiveness benefit from immediate access to these resources?

Whether by subscription, article purchase or Gold OA, by definition, articles are “immediately accessible” to the public upon publication. Science is international and making materials openly available without further payment for use by researchers in other countries – so long as there is a viable business model supporting it – may help establish American scientific leadership. Moreover, to the extent that funding reflects US research priorities, then the amplification factor of having researchers in other countries use raw data and code is beneficial to those goals.

By contrast, “competitiveness” is not a useful lens through which openness policies should be evaluated. If openness increased competitiveness, businesses and government agencies (including the military) would release their data and future plans to competitors. For the most part, they don’t.

Finally, a rapid, disruptive change in publication policy that undermines existing business models without viable, sustainable replacement models will very likely undermine American scientific leadership and business competitiveness through undermining the operational viability of our academic and scientific societies. These societies have long been and continue to be integral to scientific progress.

Q.4. Any additional information that might be considered

Over the last few years, CCC has met with many American publishers – mostly non-profit scientific and learned societies – to guide them on their transition to open access. Most see this transition as inevitable, and many view it as desirable. As one report states:

The actions of policy makers and the publishing market make it clear that the open access debate has now moved on to how to make it sustainable and how to manage the transition. Sustainability implies a price equilibrium that leads to optimal continued access to high-quality scientific research. A sustainable market therefore balances the interests of the suppliers of publishing services (publishers and learned societies) with those of beneficiaries (researchers, research organisations, research funders and the public at large).¹⁰

CCC respectfully urges the OSTP to recognize that changes to its current policy will have an impact upon sustainability, and to evaluate any changes to that policy in that light.

Contact: Roy S. Kaufman
Managing Director, Business Development and Government Relations
rkaufman@copyright.com

⁹ See, e.g., McClatchy, a Major U.S. Newspaper Chain, Files for Bankruptcy. <https://www.nytimes.com/2020/02/13/business/media/mcclatchy-bankruptcy.html>, (“With so much news available online free of charge, revenue from digital subscriptions has failed to make up for the money lost when readers got out of the habit of reading print newspapers.”)

¹⁰ The STM Report, supra, at 139. https://www.stm-assoc.org/2018_10_04_STM_Report_2018.pdf

Dr. Nichols,

I thank the Office of Science and Technology Policy for asking for public comment on Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research, and am pleased to be able to respond.

As Data Management Consultant and Curation Services Coordinator, I provide research data management planning, training, and curation support to researchers across Virginia Polytechnic Institute and State University through the University Libraries. I was also an American Association for the Advancement of Science (AAAS) Science and Technology Policy Fellow in the U.S. Department of Energy's Office of Science, where I investigated data management policies and needs within the physical sciences and sat on a working group to develop the Office of Science's Statement on Digital Data Management.

Here I repeat the questions in the Request for Information and give my responses. These responses focus on my current role in research data curation and sharing, but are broadly applicable to publications as well.

1. What current limitations exist to the effective communication of research outputs (publications, data, and code) and how might communications evolve to accelerate public access while advancing the quality of scientific research? What are the barriers to and opportunities for change?

There are several deficiencies in our current research incentive structure:

- lack of data and code sharing infrastructure, and standards for sharing
- lack of funding for infrastructure or standards development
- lack of incentives for researchers to make data and code publicly accessible
- lack of understanding as to what the value of research data and code is and how this compares to the cost required for making data and code FAIR and open

To me a needed critical change in our research incentive structure is to **make robust and transparent research as important as splashy and novel research**. This is something that US funding agencies can incentivize through a strong national open access policy.

2. What more can Federal agencies do to make tax-payer funded research results, including peer-reviewed author manuscripts, data, and code funded by the Federal Government, freely and publicly accessible in a way that minimizes delay, maximizes access, and enhances usability? How can the Federal Government engage with other sectors to achieve these goals?

First, **implement a strong national open policy for making underlying data and code publicly available immediately upon publication of research results** (e.g. in published articles). This policy should include four specific elements.

- Embargo period for publications should be eliminated
- Articles need to be openly licensed
- Data, code, software, etc. should be made available immediately upon publication of research results
- Data and code should be made FAIR

Second, to implement this national policy, **substantial funding is required** for infrastructure development, data repository certification, training for researchers, and research in research data sharing methods and techniques (e.g. work conducted in the Research Data Alliance that will benefit from continued funding). As a colleague Barend Mons stated in a recent Nature op-ed, [invest 5% of research funds in ensuring data are reusable](#).

Third, **harmonize US funder research data sharing policies and how these policies can be followed**. As can be seen on the SPARC data sharing resource (<http://datasharing.sparcopen.org/data>), US research funding agencies have different requirements that, although they can not be made to be the same, can be made more similar to ease the burden of researchers and institutions to follow.

Lastly, **require academic institutions to treat their research data and code as an asset**. If institutions want to maintain US research funding they will need to better track the data and code generated with that funding. The funding agencies also need to make funding/guidance available to help institutions accomplish this - AAU and APLU are working on an initiative on this right now that the government can leverage (see <https://www.aplu.org/projects-and-initiatives/research-science-and-technology/public-access/>; I have participated in their workshops).

In accomplishing this last goal **there is a great opportunity for libraries, institutions and funders to work together to improve public access to research results**. There are experts in data curation, data sharing and research data management that can help researchers do this or learn to do this. These experts reside in research libraries, research centers and data repositories, and other places. Take advantage of these experts, convene them, suggest researchers can work with them!

The Research Data Access and Preservation Association (<https://rdapassociation.org/>) is an example of a group that can help in the US research enterprise space. I am the incoming Vice President of the RDAP Association.

3. How would American science leadership and American competitiveness benefit from immediate access to these resources? What are potential challenges and effective approaches for overcoming them? Analyses that weigh the trade-offs of different approaches and models, especially those that provide data, will be particularly helpful.

The EC, Canada and private funders are all creating policies around open access and the US risks being left behind. Open Access increases national competitiveness. A national open access policy, substantially resourced for implementation, would empower startup ventures and mid-size businesses

to be built upon publicly available research data, like those that already are built on government created data (e.g. AccuWeather is built on National Weather Service data).

Such a national open access policy would lead to more efficient research of higher integrity. Making data FAIR for public access will lead to research groups being in a better position to reuse their own data and to validate each other's results.

Thank you very much for the opportunity to provide comment on this important topic. If my further input can be useful do not hesitate to contact me.

Regards,

Dr. Jonathan Petters
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Document Title: Request for Information: Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting from Federally Funded Research

Response from: Office of the President of Global Health, Bill & Melinda Gates Foundation, Seattle, WA

Author: Ashley Farley, Associate Program Officer of Knowledge & Research Services, Office of the President

Email: Ashley.farley@gatesfoundation.org

The Bill & Melinda Gates Foundation is honored to enthusiastically respond to the Request for Information from the Office of Science and Technology Policy (OSTP) concerning Open Access to federally funded peer-review research. The Bill & Melinda Gates Foundation prioritized its commitment to knowledge sharing and transparency when it established its Open Access Policy in 2014 for all peer-reviewed publications resulting from research funded in-part or in-whole by the foundation. The policy stipulates:

- unrestricted access of published research and any underlying data to remove all barriers and fees.
- a liberal reuse license so that results can be shared and reproduced without restriction.

With the deployment of the Open Access Policy, the foundation joined a growing global movement led by influential institutions including the World Health Organization, the National Institutes of Health, the Wellcome Trust, and the Research Councils UK. Together, we share the belief that published output and the underlying data from funded research should be promptly and broadly disseminated.

What we have found after five years is that global access and no restrictions on reuse empowers researchers with the latest evidence and data to advance their own work. The policy applies not only to global health and development, but to our work across the foundation, including our efforts to improve education in the United States. Transforming the lives of the world's most vulnerable people requires collaboration on a global scale to achieve the change we want.

Response 1

Comprehensive access to all research outputs is difficult, beyond even the paywalled articles of subscription journals. The research process itself can be executed with many different approaches so that conducting, analyzing, and disseminating research outputs can lead to inconsistent data management and sharing. The growth rate of Open Access continues to rise, but at such a slow rate that the full impact of the Open Access movement will not be realized for many years to come. But still the pressure to “publish or perish” remains, generating explosive amounts of information and data at such a rate that mere mortals cannot be expected to reasonably digest and process it all. New outputs are also rising to fill system gaps, such as

preprints and protocols, and they in turn add new versions of un-reviewed content that need assessment for the scientific canon.

Traditional publishing practices and processes have been built on a backbone of closed, blackbox systems tied to archaic paper publishing practices that are epically slow to change even with the best intentions. New technologies have tremendous potential to create efficiencies and streamline stagnant processes but are themselves expensive to build and maintain and are linked to older systems which gate the rate of progress. For the past 30 years, funders, libraries and research institutions have created policies to nudge the system forward towards positive and lasting change. With increasing momentum from new initiatives like [Plan S](#), publishers and other stakeholders continue to adopt and adapt infrastructure and have felt the effect of this pressure through increased awareness that their paywalls are serving their own profit-driven interests that are at odds with the mission of the research community.

In the occasion when an organization wants to do the right thing - adopt new technology, new infrastructure, new protocols, or new processes - too much practical time is needed to change from one system to another, and the switching costs can be prohibitive. As a result, the intended benefits to the research community are caught in the traffic jam.

Fueled by an incentive culture that rewards publication in highly selective journals, an article can bounce around the system for months looking for acceptance, and publication times can range from 6 -12 months from submission. Researchers are also motivated to slice up their research into smaller chunks to generate even more publications to satisfy their career objectives. All of this leads to enormous delays in the dissemination of new findings and adds little to the overall research record.

However, it is important to keep in mind that these are all solvable issues - these barriers can be overcome one step at a time with strong policies, modern infrastructure, and a resolve to abandon the status quo for something better. The biggest opportunity is to establish, promote, and enforce policy that moves the sector closer to removing these barriers, and energizing global collaboration. Such opportunities are being lived out right now with the Coronavirus (COVID-19) outbreak changing how researchers communicate.¹ Even staunch subscription publishers recognize the global good of openly available research as they take down subscription restrictions on COVID-19 publications. Now is the time to embrace this change and place urgency on all issues recognizing “what is made clear in this moment of crisis: a robust scientific system and an informed citizenry requires immediate and public access to research”².

¹ <https://www.sciencemag.org/news/2020/02/completely-new-culture-doing-research-coronavirus-outbreak-changes-how-scientists>

² <https://blogs.lse.ac.uk/impactofsocialsciences/2020/03/05/the-cornoavirus-covid-10-outbreak-highlights-serious-deficiencies-in-scholarly-communication/>

Response 2

As a first step, the most wide-reaching, immediate action would be for the Federal agencies to enact and enforce a strong, no embargo Open Access mandate for all federally funded research. Setting such a policy and educating grantees on their options for compliance will prioritize the importance of open research outputs and highlight the time savings, breadth of access, and reusability. It will also inspire other US funders and institutions to follow the lead.

As more research is made available immediately, technology infrastructure can be more effectively explored to leverage this knowledge for machine learning and data management, to dig deeper and wider into the vast literature and foster further inventions and innovations. We have the opportunity to utilize technologies to fix pain points and reimagine how our funded research is disseminated, evaluated, and communicated. By reinforcing the research community's commitment to sharing research data and information and eliminating the obstacles that slow down progress, we can accelerate the development of new innovations for the world's most vulnerable populations.

While broad access to articles is paramount in the research ecosystem, the fact is that research is not article shaped. The underlying data, code and other associated assets are even more important to advancing research and reusability. Enabling access to these elements will unlock unexplored potential and innovations that could change the world one cell, one disease, one baby, one life at a time.

Engaging with the landscape of stakeholders will be vital to success. The position and leadership of the Federal Government is perfectly situated to unite other organizations who drive research advancement, such as other funders, institutions, and scientific societies. These bodies represent the researchers themselves, a key demographic to increasing research rigor and communication. Research is a worldwide enterprise and the Federal Government is positioned to work with experts and initiatives outside of the US. For example the Cancer Research UK recently launched an Open Access mandate³ and this is an opportunity for policy alignment and to learn best practices or learn from failures. Another example is cOAlition S⁴ “an international consortium of research funders [requiring] scientific publications that result from research funded by public grants must be published in compliant Open Access journals or platforms”.

In addition to the researchers, publishers play an important role in the ecosystem as they intrinsically affect career development as well as provide the platforms and systems for discovery and dissemination. There is a robust group of high-quality, innovative Open Access

³ <https://www.cancerresearchuk.org/funding-for-researchers/research-features/2020-04-29-we-support-plan-s-principles-and-will-adopt-an-immediate-open-access-policy-from-january-2022>

⁴ <https://www.coalition-s.org/>

publishers and stakeholders who can help the Federal government achieve its goals of greater access to its funded research.

The Federal Government can also build upon prior successes such as the creation and growth of PubMed Central (PMC), the NIH Public Access Policy, Smithsonian Open Access⁵ and the partnership between NIH and figShare. Partnering and supporting the work of initiatives such as the National Academies of Sciences, Engineering and Medicine's (NASEM) Roundtable on Aligning Incentives with Open Science⁶ co-coordinated by the Open Research Funders Group convenes a high-level group of leaders from universities, philanthropies, and federal agencies to align policies that better support open practices.

Response 3

This is a major opportunity for America to lead globally in reimagining research dissemination. Our strong private industry, especially technology and pharma⁷, is eager to have frictionless access and freedom to build upon the last research. Without the privileged access to subscriptions, industry and pharma experience a lack of data, use piracy, and need to rely strictly on Open Access materials or wait for embargoes to lift. On the global research stage, we do not want American industry to lag or lack information that can provide a competitive advantage. In publishing quickly and openly, American authors can establish themselves as leaders and remain competitive in the research space.

The two biggest potential challenges are traditional publisher reluctance and the academic career advancement that has proliferated perverse incentives. Again, as with most barriers these are very solvable problems. There are many examples of publishers, funders and library partners who have successfully implemented fully Open Access options including “subscribe to open model”, “read and publish”, “publish and read”, and all the colors of the Open Access rainbow demonstrating that other viable models are possible. Publishers that have the motivation to re-envision the system should be leveraged as critical stakeholders for change. Those that are resistant or an obstacle to change, who prioritize business returns over serving the research community, should not continue to be rewarded for blocking progress. Projects that can provide such data are being led by cOAlition S and Wellcome Trust - Price Transparency⁸ and Society Publishers Accelerating Open Access and Plan S (SPA-OPS) project⁹, coupled with many library-led efforts.

⁵ <https://www.wired.com/story/smithsonian-puts-2-8-million-images-public-domain/>

⁶ <https://sites.nationalacademies.org/pga/brdi/open-science-roundtable/index.htm>

⁷ <https://www.nature.com/articles/d41586-019-00610-2>

⁸ https://wellcome.figshare.com/articles/Open_Access_Price_Transparency_Report/11569002

⁹

https://wellcome.figshare.com/collections/Society_Publishers_Accelerating_Open_access_and_Plan_S_SPA-OPS_project/4561397

Academic career advancement, embedded in our research and institutional culture, also has many good citizens who are working toward more judicious and fair protocols. There are numerous initiatives - such as DORA and SPARC - working to shift incentives away from faulty metrics and reward openness and collaboration. New policies set by funders addressing these archaic incentives are critical in signaling the modern sensibilities essential to change.

At the Bill & Melinda Gates Foundation we have a motto that “we take risks that others can’t or won’t”. This is strongly aligned with the spirit of America where we are not afraid to try and fail and readjust. Practicing openness - both in access and data sharing - is a realistic starting point to achieve our shared commitment to innovation, re-invention, and the research enterprise. We are primed to solve these issues of access and sustainability of the research we fund; we just need to be bold and courageous.

Response 4

It is critical to mandate immediate access to funded peer-reviewed research. The advent of preprints in the biomedical sciences has helped highlight the value of immediate access to the latest research but also the importance of assessment in the publishing process. There is ample evidence that rigorous peer-review can fail with grotesque consequences (e.g. the retracted Wakefield paper published in the Lancet), but the potential to harm public health is exponentially increased if preprints are not responsibly managed. Some publishers may wish to see preprints serve as the open solution, but the responsible juncture for opening research is after peer-review.

The success of PubMed Central as a repository of accepted, peer-reviewed papers may become a path to future growth as organizations adopt “green OA”, or the immediate posting of an accepted manuscript concurrent with publication, as a viable solution to the open crisis. This shifts the burden and responsibility of changing business and access models away from the publisher and gives the power to the author to freely share their research and data. Changing the structure and format of the “published article” also breaks down the current format -- a two-dimensional static representation of science conducted a year ago -- into the dynamic, data driven, collaborative effort it is. New technologies and visualizations will continue to emerge to mine and expand the field for greater exploration.

Open Access models have been in existence for over 20 years now, and adoption has grown despite obstacles and strong voices heralding scientific doom. It has acted as a catalyst to change, as new organizations coalesce as the business potential of harnessing the latest technologies outruns the value of locking down the latest research behind paywalls. Publishers, scientific societies, and institutions are all working to reimagine their role in the scientific discourse and are betting on new services and data management to survive and thrive in a new economy of open research.

Many patients, advocates, students and teachers, non-governmental organizations (NGOs), and citizens¹⁰ see the rumored change at the federal level as a natural progression of improving research communication and, more broadly, the world. It is important to consider the wide community support for change that was galvanized by this rumor. Letters and signatures of support include: [Nobel Prize Winners](#) (long-time [advocates](#) of OA policies); U.S. Public Interest Research Group ([U.S. PIRG](#)); Coalition of Open Access Policy Institutions ([COAPI](#)); The Scholarly Publishing and Academic Resources Coalition ([SPARC](#)); Open Research Funders Group ([ORFG](#)); Marie Curie Alumni Association ([MCAA](#)); [Sociologists](#) in support of OA; Public Library of Science ([PLoS](#)); and #OAintheUSA [Signatories](#).

¹⁰ <https://link.springer.com/article/10.1186/s40900-020-0182-y>

To the White House Office of Science and Technology Policy, May 4, 2020.

I am grateful to the OSTP for considering ways to strengthen federal policy on public or open access (OA) to federally-funded research, and for this opportunity to respond to its February 2020 [request for information](#). I speak as an individual, not for my institution.

As a result of the [OSTP memorandum of February 2013](#), the largest federal research-funding agencies now require OA to research articles rising from their grants. But in every case they allow embargoes before those works must become OA. The 2013 memorandum itself recommends 12 months as the default embargo.

I'm writing to urge OSTP to reduce and ultimately eliminate these embargoes. They deliberately slow public access to publicly-funded research. In this way, they hinder researchers, research institutions, and research itself. For the same reasons, they hurt taxpayers who funded the research and for whom federal policy should maximize the public benefits of publicly-funded research.

These embargoes were created in response to lobbying requests from publishers. In that sense, they benefit a private interest at the expense of the public interest. Yet to this day there is no evidence that eliminating embargoes would hurt publishers.

For example, the September 2013 [report](#) of the UK House of Commons Select Committee on Business, Innovation and Skills reviewed the state of the evidence and debate. The committee concluded that "there is no available evidence base to indicate that short or even zero embargoes cause cancellation of subscriptions" (Paragraph 44). "We note the absence of evidence that short embargo periods harm subscription publishers" (Paragraph 49).

In reviewing the arguments again in April 2019, *Times Higher Education* [concluded](#) that there is "'no evidence' that zero embargo periods harm publishers." The executive director of SAGE Publications stated that "he had found 'no evidence to say zero embargo periods negatively affect subscriptions'. To remove them completely, he argued, was 'a friendlier policy'." Another SAGE executive said that the company has not experienced any cancellations it could attribute to open access.

If dropping permissible embargoes to zero without prior notice would be too disruptive, federal agencies could follow the example of the Gates Foundation, which [announced in November 2014](#) that in two years it would reduce permissible embargoes on

Gates-funded research to zero. That gave publishers two years to prepare and adapt. Since then, the Gates Foundation has [required](#) Gates-funded research to become OA immediately upon publication, that is, without an embargo. This policy has not stopped important non-OA journals from accepting Gates-funded research. During the two-year transition period, publishers changed their policies to accommodate the Gates policy, which they would not have done if the Gates OA policy caused them harm.

We saw a similar kind of publisher adaptation when the OA policy at the NIH became mandatory in 2008, over the opposition of most publishers. (This is relevant only to show publisher adaptation after initial opposition; the NIH still allows 12 month embargoes.) Despite their initial opposition, [all surveyed publishers have adapted to the NIH policy](#) and publish NIH-funded research under the NIH's terms and conditions.

Four years after its policy became mandatory, the [NIH reported](#) the impact on publishers:

The [NIH] Public Access requirement took effect in 2008. While the U.S. economy has suffered a downturn during the time period 2007 to 2011, scientific publishing has grown: [1] The number of journals dedicated to publishing biological sciences/agriculture articles and medicine/health articles increased 15% and 19%, respectively. [2] The average subscription prices of biology journals and health sciences journals increased 26% and 23%, respectively. [3] Publishers forecast increases to the rate of growth of the medical journal market, from 4.5% in 2011 to 6.3% in 2014.

The European-based [Plan S](#) takes the step recommended here (September 2018). "With effect from 2021, all scholarly publications on the results from research funded by public or private grants provided by [funding bodies in the Plan S coalition] must be published in Open Access Journals, on Open Access Platforms, or made immediately available through Open Access Repositories *without embargo*" (emphasis added). Plan S is currently supported by [17 national research-funding agencies](#).

In May 2019 the [Wellcome Trust](#) announced the same step. It previously allowed a six month embargo. But starting in January 2021, it will comply with Plan S and [require](#) that "all Wellcome-funded research articles must be made freely available through PubMed Central (PMC) and Europe PMC *at the time of publication*" (emphasis added).

Canada's new [Roadmap for Open Science](#) (February 2020) recommends the same step. See Recommendation 4: “This recommendation aims to achieve Open Access by default *without an embargo period*” (emphasis added).

Cancer Research UK [just announced](#) (April 2020) that it is taking the same step. “We will update our open access policy to require *immediate* open access upon publication for CRUK-funded articles accepted for final publication on or after 1 January 2022” (emphasis added).

Although I'm not writing on behalf of my institution, my institution made a relevant argument in a [2012 public comment](#) to the OSTP:

[I]f publishers believe that short embargo periods would harm them, they should release data showing it. Researchers, research institutions, and taxpayers cannot be expected to prove the negative, or to prove the harmlessness of short embargoes. Until there is data to show harm, we must act in the public interest and provide early or immediate public access to publicly funded research.

Even if that evidence ever emerges, policy-makers will have choices. As I argued in [a 2012 article](#):

We can act in light of the evidence, whatever it turns out to be. We can weigh the demonstrable degree of harm to publishers against the demonstrable degree of benefit to research, researchers, research institutions, and taxpayers....[W]e needn't assume without discussion that even evidence of harm to subscription publishers would justify compromising the public interest in public access to publicly-funded research. Policy-makers must take seriously the argument that...OA mandates [with short embargoes] could be justified even if they do eventually cause cancellations....[This is necessary] to avoid the mistake of letting public agencies make insurance for publishers a higher priority than access to publicly-funded research.

And I made this related argument in [a 2013 article](#):

[T]he White House should understand that publisher requests for embargoes...are requests to put private interests ahead of the public interest. Even evidence that private interests would benefit from that imbalance should not suffice to bend public policy towards them....[A]ny embargo period is a compromise with the public interest....Public policy-makers should try to

identify and achieve the public interest, even when it conflicts with a well-funded private interest....Moreover, even when embargoes are a necessary compromise to get a policy adopted, we should always try to shorten embargoes over time for the same reason that we should always try to get closer to achieving the public interest....Finally, even if short embargoes eventually trigger cancellations of non-OA journals, and publishers can provide evidence (which so far they have not done), strong OA policies may still be justified, and for two reasons. First, researchers and taxpayers will still have an interest in the shortest possible embargoes. Second, there are first-rate, peer-reviewed OA journals not threatened in the slightest by strong OA policies. It's not as if high-quality publishing *per se* requires subscription revenue or embargoes to protect that revenue.

A common publisher objection is that funder OA policies "interfere with the market". Publishers raised these objections against the NIH policy more than a decade ago, and have raised them now against the possibility of new OSTP action. For example, the Association of American Publishers [claimed](#) in December 2019 that the current system of academic publishing is "a highly important and successful marketplace...[The 2013 OSTP] mandate already amounts to a significant government intervention in the private market." In a separate piece it [claimed](#) that the Trump "Administration may be preparing to step into the private marketplace." On behalf of publishers, Senator Thom Tillis [claimed](#) that changing the current federal OA policy "could amount to significant government interference in an otherwise well-functioning private marketplace."

I responded to these "market" objections in a 2012 book ([Open Access](#), MIT Press). From pp. 38-39:

[This is no ordinary market.] Scholarly publishing is permeated by state action, public subsidies, gift culture, and anticompetitive practices. All scholarly journals [OA and subscription-based] benefit from public subsidies. Most scientific research is funded by public agencies using public money, conducted and written up by researchers working at public institutions and paid with public money, and then peer-reviewed by faculty at public institutions and paid with public money. Even when researchers and peer reviewers work at private universities, their institutions are subsidized by publicly funded tax exemptions and tax-deductible donations. Most...journal subscriptions are purchased by public institutions and paid with taxpayer money. Last and not least, publishers exercise their control over research articles through copyright, a temporary government-created monopoly.

As I wrote [in 2010](#), "Publishers benefit from all these traditional distortions or modifications of the market [state action, public subsidies, gift culture, anticompetitive practices, and government-created monopoly] and only protest new ones that would benefit researchers [and the public]. In formulating their objections, they position themselves as champions of the free market, not as beneficiaries of its many distortions and modifications....To call [journal publishing] a market is like calling mule a horse."

Finally, I acknowledge and support the arguments from the following organizations already submitted to the OSTP (in chronological order):

- The [Marie Curie Alumni Association](#), December 19, 2019, representing about 15,000 researchers from 143 countries
- The [Open Research Funders Group](#) (ORFG), December 20, 2019, representing 16 private research-funding organizations, with assets exceeding \$100 billion
- A group of [226 US sociologists](#) signing a [petition](#) to eliminate embargoes on federally funded research, c. December 20, 2019
- A [group of nine](#) nonprofit public-interest research advocacy organizations, January 8, 2020, representing the American Library Association, the Association of College & Research Libraries, the Association of Research Libraries, the Association of Southeastern Research Libraries, the Coalition of Open Access Policy Institutions, Creative Commons, Electronic Frontier Foundation, PeerJ, and the Scholarly Publishing and Academic Resources Coalition
- A [group of nine](#) nonprofit academic publishers and scholarly societies, January 17, 2020, representing the Association for Research in Personality, the California Digital Library, eLife Sciences Publications, F1000 Research, Frontiers Media, MIT Press, PeerJ, the Public Library of Science, the Society for the Improvement of Psychological Science, and Ubiquity Press
- The [Coalition of Open Access Policy Institutions](#) (COAPI), January 17, 2020, representing 100 signatory US colleges and universities. Also see the [second COAPI response](#), April 22, 2020.
- [U.S. Public Interest Research Group](#) (US PIRG), January 16, 2020)
- [21 Nobel Laureates](#) (January 24, 2020), building on the [history](#) of US Nobel laureates supporting strong OA policies in the US (2004-2012)

Sincerely,

Peter Suber, Director, Office for Scholarly Communication, Harvard University

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bit.ly/petersuber

May 4, 2020

Dr. Lisa Nichols
Assistant Director for Academic Engagement
White House Office of Science and Technology Policy (OSTP)
725 17th Street NW
Washington, DC 20460

RFI RESPONSE: PUBLIC ACCESS

Dear Dr. Nichols,

Thank you for this opportunity to provide input into your policy process. This is an incredibly important topic, and I appreciate that you have been taking time to solicit and consider different viewpoints.

Please note that the viewpoint expressed in this letter is entirely my own. While I do head an international network of research communication leaders who have been working on reforming open research since late 2014 (the Open Scholarship Initiative, or OSI), this group doesn't issue opinion letters because we rarely if ever agree on anything—a strength when it comes to debating policy, a weakness when it comes to writing letters.

The answers you are seeking in this RFI are contained in OSI's recently published "Common Ground" paper. I highly recommend that you read the first part if you can (skipping the annexes is okay). It's located under the resources tab at <http://Plan-A.world>. The summary, which I'm copying here largely verbatim over the next three pages, is that we need to seek common ground in our collective effort to bring about the future of open research, and that we need to do this for three main reasons: to understand the full scope of the challenges in this space; to identify the best possible, most effective, most sustainable solutions; and to avoid unintended consequences. Do we know enough about the challenges of open research, are we confident the solutions we're pursuing are the right ones and are we accurately gauging the potential risks and benefits of our action and inaction?

These are basic questions that every policy process tries to unearth. They are also, however, questions that have never been asked by the scholarly communication community in any global, inclusive, high-level, large-scale sense. Instead of working together to change the global future of open in a way that benefits everyone equally we have been led for the most part as factions, with each faction pursuing its own separate goals based on its own separate sense of reality.

Certainly the potential exists to create a world with vast troves of open research so we can accelerate discovery, improve education and public policy and help make the world a better place. This is the goal of all research and it's the goal of the open movement to help research succeed. But figuring out the right way to do this is key. Many challenges are involved and the consequences of our actions and inactions are real.

First and foremost among these challenges may be overcoming our own hubris. The open research debate has for years been driven by claims that we know with certainty that open access as envisioned by some is an absolute good that clearly conveys benefits to research and society. This certainty makes for a compelling sales pitch but at the moment it is founded more in ideology than hard evidence. Working to find common ground doesn't mean questioning the potential of open or questioning motives or solutions but it does mean being open to the possibility that we don't have all the answers, and that to get these answers we need to work together. With these answers in hand we can then build a stronger foundation for moving forward and for achieving the full potential of open. Our default position in OSI is that we need to be more willing to embrace the diversity of thought, evidence and practice in this space— there's a lot of it—and embrace all efforts that help create a more open world (at least to the extent they don't squash this diversity in the process).

There has also been hubris from many stakeholder groups—publishers who have at times seemed somewhat tone-deaf to complaints about embargo periods and profit margins; funders who think they understand enough about the scholarly communication ecosystem to reform the entire system in a way that everyone must follow; open advocates who can sometimes seem more concerned with punishing publishers than protecting the needs of interests of research; and so on. Our inability and unwillingness in this community to listen, learn and treat each other with respect has been more common than not.

Complicating this task, our scholarly communication tools and practices have been evolving for decades now and there are a large number of organizations in the scholarly communication space who are actively working on a wide variety of reforms. Some of these groups are working together, most are not. Overall our progress toward a more open research world has been growing steadily, although much progress remains to be made.

Or at least some people see it this way. Some groups are convinced that not nearly enough progress has been made to-date. They may also feel quite strongly that commercial publishers have no place in the future of research and that no reforms are complete unless publishers are excised from the picture. Others feel quite strongly that publishers have a centuries-long track record of serving the research community and that the tools and processes put in place by publishers are essential to retain because they facilitate good research and are valued by the research community. Still others are caught somewhere in between—yes publishing is valuable, but exactly what is “publishing” in the digital age, and can't we do things more efficiently today than in years past?

There is also a wide range of disagreement over how fast needed reforms can and should happen. “Right now” is too slow for some and “ten years from now” is too fast for others. On the fast side advocates see the need for immediately freeing research information that could cure diseases and reverse climate change. On the slow side advocates see the need to move with caution lest we damage research with rash and ill-considered widespread changes; and others—perhaps more realists than worriers—advise that universities in all their diversity are really the ones in control of these reforms and that short of global action by university provosts themselves, no other stakeholder group working alone is going to change the global scholarly communication system any time soon.

Aside from issues directly related to open research reform—what kind of open and how fast—there are also many persistent issues in this space that will require global cooperation to solve. The misuse of impact factors is one such issue, for instance. Other broad issues include making peer review demands

more sustainable, reforming the publish or perish culture of academia (which affects promotion and tenure practices everywhere in the world), understanding through controlled studies whether embargos can be reduced or eliminated, better understanding the impacts of open research so we can better target our reforms and innovations, and much more.

So what can we do right now? Many of the people who have contributed to OSI's efforts over the years believe there's a path forward. This path involves rebuilding our quest for open research on solid, common ground instead of on narrow and fractured ideological ground. Ample common already ground exists in this community and the need for a common ground approach to address this complex system's many challenges is compelling. Also, a future built on common ground will be far richer and stronger than the future we are currently pursuing.

Step one is to continue doing what your office has been doing—talk to different stakeholder groups and learn about their issues and concerns. OSI has been at this since late 2014, engaging with hundreds of the world's leading experts on open research, many in-depth and for a sustained period of time.

Step two is to begin looking for common interests and concerns on which we can build a strong foundation for reform, and work together on change. OSI has proposed a framework for how this work can advance—our “Plan A.” Other organizations are working on similar open roadmaps, including the National Academies, the National Science Foundation, and UNESCO. OSI is an advisor to UNESCO in their open roadmap effort (due to be completed by end-2021). We are also hoping to bring together at a high level the key organizations developing open roadmaps so they can compare notes as it were and see how they might be able to collaborate and cooperate on this global effort.

With regard to the specific questions you are asking, I think these can be answered as follows:

1. **What current limitations exist to the effective communication of research outputs (publications, data, and code)?** We know for certain that the current research communication system has a variety of inequities and inefficiencies. We also know there are many different communication needs and norms that vary by field, career stages, institution and region. We know circumstances like the COVID-19 and climate change crises demand a new and more effective model for research communication. And balanced against all this, we hear statements in the open advocacy space claiming that research communication limitations where they exist are the fault of commercial publishers and that by removing these publishers, the communication system will somehow improve. What we don't know for certain are facts: where exactly are these communication limitations, what exactly is missing (and for whom), what exactly do researchers need that they aren't getting now, and what realistic and sustainable reforms might be made in response. OSI's Plan A proposes to study these questions and come up with workable answers as a community. At the moment, we simply don't know enough to make policy decisions. We have a rough sense that the system is in disequilibrium, but beyond this we are only capable of randomly “tinkering.” As one OSI participant noted (a funding agency leader who has been actively involved in the open research funding effort), we haven't been at all scientific with our efforts to reform science communication.
2. **How might communications evolve to accelerate public access while advancing the quality of scientific research?** With all respect, I think this question is backwards. We can easily mandate new access requirements, but we shouldn't do this and then ask whether our changes are

advancing the quality of scientific research. The proper question to ask is “how can we improve the quality of scientific research by improving research communication and access”? This is a much harder question to answer, and one that needs to work forward from first developing a better understanding of what researchers actually need, what systems and processes they will accept, and what these systems and process will contribute to research.

3. **What are the barriers to and opportunities for change?** Many barriers exist, including the inertia of the existing culture of communication in academia; an utter lack of trust between key stakeholder groups in the scholarly communication space; a lack of meaningful engagement by researchers in reform efforts; confusion about what “open” means; and a persistent preference of researchers to prioritize high quality and high impact over all else, including “open.” Fortunately, there are equally as many opportunities for change in this space. All stakeholders recognize the same common issues, primarily centered around reducing costs, and improving access and impact. At a more fine-grain level, stakeholders commonly recognize the need to improve peer review, reduce the misuse of impact factors, control predatory publishing, and improve the ability of researchers from lower-resource regions and institutions to participate in research. Building a future based on our shared interests and concerns like these instead of on our ideological opinions about the proper role of commercial publishers and what form of copyright works best for everyone everywhere offers us an opportunity to move reform efforts forward in a rapid and robust way that hasn’t been experienced to-date.
4. **What more can Federal agencies do to make taxpayer funded research results... freely and publicly accessible in a way that minimizes delay, maximizes access, and enhances usability?** The first questions we should be asking are of a more foundational nature: What are our common goals and interests in improving access? Where do we need rapid and maximum access (where is this demand coming from and under what circumstances), what options exist for achieving this, what kind of usability are we trying to enable, and specifically what outcomes are we attempting to achieve? Just as there are no one-size-fits-all solutions in scholarly communication reform in general, there are also no one-size-fits-all solutions regarding issues like embargo periods, copyright licenses, and access formats. We need to dig deeper first and lay the proper foundation so we can be exacting and effective with our solutions. Attempting to overlay broad and sweeping solutions on a diverse and global ecosystem like research is setting us up for failure, and delaying our work on achievable approaches that can start paving the way toward a truly robust future of open research. So to answer your question, then, what Federal agencies can do and should do is precisely what you are doing right now: ask questions, gather facts and perspectives, bring people together, and try to develop policy approaches that are based on a complete understanding of the issue, that respond to needs, build toward future goals, and that will be effective, supportable, and sustainable.
5. **How can the Federal Government engage with other sectors to achieve these goals?** There is no coordinated federal-wide action plan at the moment. In addition to OSTP, several other US government agencies—including NAS, NSF, and NIH—are also currently engaged in developing an open roadmap. OSTP may want to consider trying to engage with these groups so the federal government’s open roadmap is unified. OSI is also working on a roadmap through Plan A, in addition to advising UNESCO in the development of this agency’s open roadmap on behalf of the UN. I think it would be helpful for UNESCO to be able see what US federal agencies are thinking, and vice versa, so all of these efforts can learn from each other. The goal isn’t necessarily policy alignment, but at least policy harmonization.

6. **How would American science leadership and American competitiveness benefit from immediate access to these resources?** It wouldn't. Open research holds tremendous potential to improve both research and society in ways we can only imagine, but only if it's developed together in a way that aligns incentives so researchers engage with open because it measurably helps their research and their careers. The current trajectory of open reform doesn't look like this at all. Research also depends on secrecy, prestige, and intellectual property rights. We can't simply declare that these fundamental factors no longer exist and that henceforth American science will lead by altruism instead. The outcome might be quite the opposite of what is intended. So, we need to be very circumspect with how we approach this challenge. Will an open future benefit research and society? Yes, but not just any open future. Can America lead the way? Yes. Will American science leadership and competitiveness benefit from immediate access to these resources? It depends what we mean by "these resources"—these haven't been developed yet. In theory, yes, of course, but quite possibly the answer is "no" as well—especially with regard to competitiveness—if we choose an open research "solution" that is quick and easy. After studying this issue at a high level for the last five years, I think the one thing the OSI group can agree on is that there is absolutely nothing about scholarly communication that is quick and easy. Real answers are going to take time and effort to develop.
7. **Analysis of options, models:** I encourage you to read our "Common Ground" paper for additional analysis (and our Plan S critique as well, if you have time). The Common Ground paper provides dozens of pages of analysis of various options and models discussed within OSI, as well as a more expansive argument for why developing options and models is really something that needs to come after a community-wide conversation has started, not before. The first step is to come together to discuss our common ground. This paper discusses what the foundation of our new collaboration might look like, and what we can achieve by working together. The fundamental argument is this: that at its root, the conversation we are having in this community is really about creating a better future for and through research. The research communication challenges of today will be solved and replaced with new challenges we can't even envision yet and that have nothing to do with open—evolving educational models, changing roles for universities, an increasing role for artificial intelligence and machine learning and much more. So in this broader perspective, open research is just a means to an end, not an end in itself. Our focus, therefore, should be directed toward what we are all trying to do for knowledge and society and how we can get there from here, even if this means changing our positions on what kinds of open strategies are "right" and "wrong." Our common devotion to this broad challenge of improving research and society is incredibly rich common ground, and as good a spot as any to begin building our new, stronger foundation for the future of scholarly communication, together.

Thank you again for providing this opportunity for feedback, and for reading this letter.

Most sincerely,



Glenn Hampson
Program Director, OSI



May 4, 2020

BY ELECTRONIC SUBMISSION

Dr. Kelvin K. Droegemeier
Director, Office of Science and Technology Policy
Eisenhower Executive Office Building
1650 Pennsylvania Avenue, NW
Washington, DC 20504

Response to OSTP Request for Information – FR Doc. 2020-06622 – “Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research”

Dear Dr. Droegemeier,

The National Kidney Foundation (NKF) is grateful for the opportunity to respond to this request for information. In particular, we write to caution OSTP against adopting a policy mandating the free distribution of peer-reviewed manuscripts earlier than one year after publication.

NKF, a major voluntary nonprofit health organization, is dedicated to preventing kidney and urinary tract disease, improving the health and well-being of individuals and families affected by kidney disease and increasing the availability of all organs for transplantation. Founded in 1950, our primary focus has centered around the improvement of clinical practice and patient outcomes. With over 5,000 members, NKF provides physicians, pharmacists, advanced practitioners, nurses, technicians, social workers, and dietitians who care for patients with, and at risk for, kidney disease with access to a variety of continuing education resources, evidence-based clinical practice guidelines, scientific grants and fellowships, and subscriptions to professional journals. NKF publishes four peer-reviewed journals that provide access to the latest in clinical research and patient care. Our journals include:

- ***American Journal of Kidney Diseases (AJKD)*** is recognized worldwide as the leading source of information devoted to clinical nephrology practice and clinical research. The journal publishes original investigations describing the latest findings related to kidney diseases, hypertension, dialysis therapies, and kidney transplantation
- ***Advances in Chronic Kidney Disease (ACKD)*** presents focused review articles devoted to a single topic of current importance in clinical nephrology and related fields.
- ***Journal of Renal Nutrition (JRN)*** is devoted exclusively to renal nutrition science and renal dietetics. Each issue contains state-of-the-art review, original research, articles on the clinical management and education of patients, a current literature review, and nutritional analysis of food products that have clinical relevance.
- ***Kidney Medicine*** is an open access journal focused on clinical medicine in nephrology and hypertension. The mission of *Kidney Medicine* is to disseminate knowledge relevant to the care of people with or at risk of kidney disease. Articles include original research, case reports, and review articles.

Ultimately, we strive to support the progress of science by producing and broadly disseminating the highest quality peer-reviewed journals possible. Publishers and societies have worked to strengthen

scholarly communication and promote open science. However, it is critical that these efforts take place within a framework that respects intellectual property rights and our ability to invest in high-quality publications, and that does not hinder researchers from communicating their discoveries.

As you are aware, federal agencies currently require that peer-reviewed manuscripts be made freely available online—within one year of publication—if they discuss research funded at least in part by a government grant.¹ This policy represents a significant compromise that balances our shared goals of providing broad access with the need for our organization to recoup the substantial investments we make in the publication and distribution of these articles. This one-year compromise contrasts with the length of a full copyright term of life-of-the-author plus 70 years. Importantly, this compromise reflects Congress' guidance (in the authorizing legislation for the current policy) that the Administration must "take into consideration the role that scientific publishers play in the peer review process in ensuring the integrity of the record of scientific research, including the investments and added value that they make."²

Reducing or eliminating the current one-year embargo would significantly jeopardize our organization's ability to invest in producing the high-quality peer-reviewed journals that our readers in the nephrology rely on. In so doing, such a policy would contravene Congress' clear guidance to take our role and investments into consideration. Furthermore, such a policy would directly result in a reduction in either the quantity or quality (or more likely, both) of peer-reviewed journal articles produced by hundreds of organizations like ours.

This would not only be harmful to the research enterprise, it would also be harmful to the clinicians, researchers, and patients who are the ultimate beneficiaries of the scholarly journals we produce.

We urge you not to disrupt our ability to support the advancement of research in nephrology, and we look forward to working together to identify solutions that advance the goals of open science without undermining the communication of research findings and analyses through peer-reviewed journals.

Thank you again for the opportunity to submit these comments.

Sincerely,



Kerry Willis, PhD
Chief Scientific Officer
National Kidney Foundation

¹These policies were developed pursuant to OSTP's requirement that agencies "shall use a twelve-month post-publication embargo period as a guideline for making research papers publicly available . . ." See OSTP Memorandum on "Increasing Access to the Results of Federally Funded Scientific Research" (Feb. 22, 2013).

² America COMPETES Reauthorization Act of 2010, Section 103(b)(9), *available at*: <https://www.congress.gov/111/plaws/publ358/PLAW-111publ358.pdf>.



CARDIOVASCULAR PATHOLOGY

May 4, 2020

BY ELECTRONIC SUBMISSION

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Response to OSTP Request for Information – FR Doc. 2020-06622 – “Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research”

Dear Dr. Droegemeier,

I am writing on behalf of the Executive Committee of the Society for Cardiovascular Pathology (SCVP). The SCVP is grateful for the opportunity to respond to this request for information. In particular, we write to caution OSTP against adopting a policy mandating the free distribution of peer-reviewed manuscripts earlier than one year after publication.

The Society for Cardiovascular Pathology (SCVP) was founded on March 12, 1985 when 31 individuals with an interest in the topic laid the groundwork for establishing a professional organization and community. The focus of the society is on all matters related to the pathological basis of cardiovascular diseases. The SCVP now has 250 members. The goals of this organization are to:

- Enhance identification of the specialty
- Facilitate communication among cardiovascular pathologists
- Connect cardiovascular pathologists with related subspecialists
- Foster collaborative investigations and mutual education

In 1990, the SCVP founded an official journal of the Society named Cardiovascular Pathology (CVP), and entered into an agreement with Elsevier to publish the journal on behalf of the SCVP. The journal has achieved great success, largely due to the outstanding efforts of the editors, with help from members of the editorial board, in publishing timely scientific articles on cardiovascular diseases as well as important position papers on practice and training in cardiovascular pathology. CVP is considered by the leadership of SCVP to be essential for the scientific development of the SCVP membership. CVP also serves as the window to the



CARDIOVASCULAR PATHOLOGY

world for the dissemination of scholarship of SCVP members and kindred physicians and scientists following the peer-reviewed publication of their work. The advancement of knowledge through the work published in CVP ultimately benefits patients with cardiovascular disease and society at large.

Ultimately, we strive to support the progress of science by producing and broadly disseminating the highest quality peer-reviewed journal possible. Publishers and societies have worked to strengthen scholarly communication and promote open science. For example, the current CVP Editor and Elsevier Publisher have worked together to create a Special Issues/Article Collections component of the journal which provides a site for the compilation of related articles on important topics for broad dissemination. This site is accessible from the CVP homepage (<https://www.sciencedirect.com/journal/cardiovascular-pathology/special-issues>). However, it is critical that these efforts take place within a framework that respects intellectual property rights and our ability to invest in high-quality publications, and that does not hinder researchers from communicating their discoveries.

Our organization is currently deeply engaged in efforts to respond to the COVID-19 pandemic. Cardiovascular pathologists are having a particularly important role in gaining knowledge of the underlying basis of COVID-19 since pre-existing cardiovascular disease is known to be a major contributing factor in morbidity and mortality of COVID-19. The CVP editor has already set up a Special Issue site for rapid dissemination of information regarding COVID-19. See COVID-19 publications in CVP (<https://www.sciencedirect.com/journal/cardiovascular-pathology/special-issue/10LS1SM3NG4>). We are concerned that OSTP's significant new regulatory proposal is a distraction from our ongoing efforts to respond to the current crisis and would undermine our stability and undercut our ability to respond to future health crises.

As you are aware, federal agencies currently require that peer-reviewed manuscripts be made freely available online—within one year of publication—if they discuss research funded at least in part by a government grant.¹ This policy represents a significant compromise that balances our shared goals of providing broad access with the need for our organization to recoup the substantial investments we make in the peer-review, editing, co-publication, and long-term stewardship of these articles. This one-year compromise contrasts with the length of a full copyright term of life-of-the-author plus 70 years. Importantly, this compromise reflects Congress' guidance (in the authorizing legislation for the current policy) that the Administration must "take into consideration the role that scientific publishers play in the peer review process in ensuring the integrity of

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CARDIOVASCULAR PATHOLOGY

the record of scientific research, including the investments and added value that they make.”²

Reducing or eliminating the current one-year embargo would significantly jeopardize our organization’s ability to invest in producing the high-quality peer-reviewed journal that our readers in the cardiovascular medical community rely on. In so doing, such a policy would contravene Congress’ clear guidance to take our role and investments into consideration. Furthermore, such a policy would directly result in a reduction in either the quantity or quality (or more likely, both) of peer-reviewed journal articles produced by hundreds of organizations like ours.

This would not only be harmful to the research enterprise, it would also be harmful to the scientists, medical professionals, patients and general public who are the ultimate beneficiaries of the scholarly journal we produce.

We urge you not to disrupt our ability to support the advancement of research and patient care in the field of cardiovascular disease and we look forward to working together to identify solutions that advance the goals of open science without undermining the communication of research findings and analyses through peer-reviewed journals.

Thank you again for the opportunity to submit these comments.

Sincerely,

RICHARD N. MITCHELL, MD

SOCIETY FOR CARDIOVASCULAR PATHOLOGY PUBLICATIONS COMMITTEE CHAIR

Professor, Department of Pathology, Harvard Medical School; Director, Human Pathology, Harvard-MIT Division of Health Sciences and Technology, Harvard Medical School; Staff Pathologist, Brigham and Women’s Hospital, Boston, MA

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² America COMPETES Reauthorization Act of 2010, Section 103(b)(9), available at: <https://www.congress.gov/111/plaws/publ358/PLAW-111publ358.pdf>.



CHORUS comments on Office of Science and Technology Policy RFI: Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting from Federally Funded Research

April 8, 2020

Dear Lisa Nichols, Assistant Director for Academic Engagement, OSTP,

CHORUS, is a US 501(c)(3) non-profit organization dedicated to increasing public access to peer reviewed publications reporting on federally funded research, related data sets and code. Because we share OSTP's commitment to advancing public access to these research outputs, we would be very interested in lending our support to your efforts and appreciate this opportunity to provide a response to Document 85 FR 9488, *Request for Information (RFI): Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting from Federally Funded Research*.

Fostering a vibrant scholarly communications ecosystem is critically important to the progress of science and the benefits it can bring to the American public. For that reason, policy decisions and the implementation plans following those decisions are best made with a full understanding of the research publication and data landscape. Estimating the costs and impact of public access policies will benefit from, among other things, a full analysis of the available data on the numbers of papers resulting from US federal funding, as well as current compliance levels. Because CHORUS has been a partner to 10 US agencies in their efforts around the 2013 OSTP memorandum *Increasing Access to the Results of Federally Funded Scientific Research*, we currently gather such data on an ongoing basis and would be happy to share it with the OSTP in your work to create effective and sustainable policies.

CHORUS has been very active in helping agencies realize the goals of the February 2013 OSTP public access memorandum and now works directly with the National Science Foundation (NSF), US Department of Energy (USDOE), US Department of Defense (USDOD), US Department of Agriculture (USDA), National Institute of Standards and Technology (NIST), National Oceanic and Atmospheric Administration (NOAA), US Geological Survey (USGS), US Agency for International Development (US-AID), Office of the Department of National Intelligence (ODNI), and Smithsonian Institution. In addition, we track papers reporting on federally funded research for all other agencies covered by the 2013 memorandum.

CHORUS counts over 40 not-for-profit and commercial and scholarly publishers among its members and covers over 11,400 journals; a total equaling 96% of the periodicals listed in the Web of Science Journal Citation Report. CHORUS monitors and audits each publisher member's content record in our system to verify public access, the availability of reuse license terms, relevant datasets and code, and long-term archival and preservation arrangements. We currently track over 700,000 US agency funded articles published by CHORUS member

publishers. This count increases daily as existing and new members add their content to CHORUS.

This year, CHORUS added the tracking of related data sets and code to our service to help funders, academic institutions, and publishers monitor and increase their rate of compliance with federal public access plans. Through this addition we aim to develop better interoperability between funder, publisher and university systems, and ultimately to further advance the discovery of and access to funded research.

We believe the need to develop and evolve data standards is critical to support researchers with their data management plans and help funding bodies with compliance tracking. We strongly encourage OSTP to actively partner with organizations which are already overseeing the development of standards that deploy existing tools (e.g., Enabling FAIR Data Repositories, DataCite, Research Data Alliance, Crossref Open Funder Registry, and ORCID).

In moving ahead, we urge OSTP to continue to develop and expand public-private partnerships. Such efforts will help the US agencies contain costs, reduce the burden on researchers and their institutions, and ensure sustainable, broad public access to scholarly communication. The RFI voices a welcome commitment to ongoing consultation and collaboration with the diverse array of stakeholders in the scholarly communications community. That commitment has been evident in CHORUS' discussions with the OSTP and the US agencies over the past seven years and we hope that we can open a new chapter in our work with the OSTP and other stakeholders to achieve our shared goal of advancing public access to peer-reviewed publications, data, and code, and would welcome the opportunity to discuss how our data, analysis, and support can help OSTP with the development of policies that will drive further progress.

Sincerely,

Howard Ratner
Executive Director, CHORUS
hratner@chorusaccess.org

Buenos Aires, April 6th., 2020

Lisa Nichols
Assistant Director for Academic Engagement
White House Office of Science and Technology Policy OSTP

Dear Ms. Nichols,

The Latin American Council of Social Sciences¹ -a network of 718 research institutions in 52 countries- would like to take the opportunity of the Request for Information of the White House Office of Science and Technology Policy, to thank OSTP for this consultation to stakeholders and for allowing us to highlight a Latin American perspective on public access to scholarly publications and research data from the United States.

Science is a global endeavor and collaborative research is of utmost importance. Collaboration among USA and Latin American social sciences researchers and research teams and institutions is reflected in co-authorship and co-publications, joint academic and research programs, and a long tradition of cooperation of Latin American Studies libraries at USA universities with social sciences research institutions from our region.

CLACSO has among its members 12 research institutions from USA² and we partner with research organizations and universities from USA to undertake collaborative initiatives. One of CLACSO's WG is dedicated to Studies on the USA. We are also working closely with the Latin American Studies Association (LASA). In addition, CLACSO enables all their investigation results in open access through its Library and virtual library (<http://biblioteca.clacso.edu.ar/>). One source of cooperation to make this possible is the support provided by the prestigious network of North American libraries which possess important deposits of Latin American studies, among which are: Harvard University, New York University, Texas AT University Austin, Pittsburg University, New York Public Library, Columbia University.

We here reply your questions:

Question 1: *“What current limitations exist to the effective communication of research outputs (publications, data, and code), etc. ?”*

¹ <https://www.clacso.org/wp-content/uploads/2020/02/Folleto-CLACSO-INGLES-2020.pdf>

² https://www.clacso.org/institucional/centros-asociados-2/?pag=pais&id_pais=27&ct=0

On our side, Latin America, in the past decade open access legislation/policies/initiatives have been implemented and researchers from USA can freely and immediately access online to peer-reviewed journals³ and institutional or subject repositories⁴ from countries in our region.

But when researchers and research institutions from our region need to access research outputs from USA, a great percentage of that research publications and research data is behind paywalls or pay-per-view systems, both too costly considering salaries and research budgets of our research community, or behind embargo periods in repositories, making it difficult to undertake collaborative research and for libraries to serve a growing number of researchers in Latin American countries interested on USA research publications.

Expanding access to research outputs from USA will help Latin American researchers and research institutions and their libraries advance collaborative Latin America-USA research projects and publications, in a region where we usually lack funds to update collections on research publications from the USA.

When researchers from USA publish research results in open access peer-review journals from Latin America those articles, and research data linked to the articles, are available in open access immediately, with no embargo period and no paywalls, and USA authors are usually not charged APCs (article processing charges) to publish in those journals in our region. But when researchers from our region publish in journals from USA, many times paywalls and embargo periods do not allow access to the articles, even for the institution in Latin America which has funded the research. And access to research data is even more difficult because authors have to hold onto to data, sometime for years without sharing it, while they wait for their article to be open access.

This creates an uneven playing field for researchers and their institutions from our region.

Expanding access to research outputs from USA will definitely increase Latin America-USA academic and research collaborative programs and projects.

Question #2: “What can Federal agencies do to make taxpayer funded research results, freely and publicly accessible? etc.”

³ <https://scielo.org/en> <https://www.redalyc.org/> and university open access journal portals

⁴ <http://www.lareferencia.info/en/> and institutional and subject repositories, e.g. CLACSO’s social sciences repository <http://biblioteca.clacso.edu.ar/>

To strengthen Latin America-USA research cooperation activities, initiatives from the Federal agencies that would help include:

- Eliminate embargo periods to access research publications and data.
- Research data should be FAIR (Findable, Accessible, Interoperable, Reusable).
- Journal articles, and supporting data, should be available in open access digital repositories. This would help Latin American researchers collaborating and co-authoring with USA researchers, and publishing in USA, so they can instruct their funding agency or university interoperable repository in Latin America to harvest the metadata of the journal article, with link to the full-text which remains in the original server in USA, to give visibility in our region to that collaborative research output, which today is invisible and unavailable because behind paywalls or embargoes.
- Provide support to promote the dissemination of research results in multiple formats, such as texts, audiovisuals, social networks, etc., for example, the result of the call for research that CLACSO is carrying out with the Collaborative Research Program on Crops (CCRP) of the Mcknight Foundation on Andean agroecological systems of Bolivia, Ecuador and Peru (<https://www.clacso.org/programa-de-investigacion-y-formacion-en-sistemas-agroecologicos-andinos-2/>) This would also allow dialogue with Similar experiences from other continents.
- In the past decade Latin America has made significant advances in open access legislation, policies and implementations of open access initiatives publicly-funded, non-profit and free of charge to publish and to read⁵. These initiatives benefit Latin American researchers, research institutions and libraries because they can access and publish free of charge in open access venues as peer-review journals and digital repositories. But these initiatives also benefit researchers and research institutions from USA which work with researchers or research outputs from our region. Those USA researchers can publish free of charge in our peer-review open access journals and can access free of charge research outputs from our region available in open access venues mentioned above.

⁵ Fischman et al. (2015)

<http://biblioteca.clacso.edu.ar/clacso/se/20150921045253/MadeInLatinAmerica.pdf>

- In times of open science and open knowledge, we want to highlight the public impact of the Latin American approach to open access⁶
- In past decades Latin American governments, universities and libraries have paid each year high research budgets to ensure subscriptions to journals published in the USA. It is estimated that the present pandemia will have devastating economic consequences for many years to come, which will not allow our countries to ensure access to those subscriptions.
- Another important issue that requires attention is career assessment. Researchers in USA and in Latin America are usually hired, evaluated and promoted based on publication-based metrics, mainly the impact factor (IF). This pressure to publish in journals with IF devaluates all publicly-funded and other non-profit research outputs published in other open access venues, as is the case of repositories and other scholarly-led publishing platforms. Open access to publications and research data needs to rebalance this focus on IF journals to a broader approach centered around the quality of researchers' work. With this objective in mind, CLACSO's FOLEC-Forum on Scientific Research Evaluation in Latin America and the Caribbean⁷ is promoting a Latin American discussion for a renewal of national science evaluation policies.

CLACSO thanks OSTP very much for this public consultation and encourages OSPT to expand public access to research outputs from USA in scholarly-led, publicly-funded, non-profit open access venues, as a way of strengthen and encourage worldwide adoption of those open access approaches.

Yours sincerely,



Karina Batthyány
Executive Secretary

⁶ Alperin (2015)

<https://stacks.stanford.edu/file/druid:jr256tk1194/AlperinDissertationFinalPublicImpact-augmented.pdf>

⁷ <https://www.clacso.org/foro-latinoamericano-sobre-evaluacion-cientifica/>



May 4, 2020

Lisa Nichols, PhD
Assistant Director for Academic Engagement
Office of Science and Technology Policy (OSTP)
1650 Pennsylvania Avenue, NW
Washington, DC 20504

Submitted via email to: publicaccess@ostp.eop.gov

RE: Request for Information on Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting from Federally Funded Research [985 FR 9488]

Dear Dr. Nichols:

The American Society of Hematology (ASH) appreciates the opportunity to provide comments on the Request for Information (RFI) on Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting from Federally Funded Research.

ASH represents more than 18,000 clinicians and scientists worldwide, who are committed to the study and treatment of blood and blood-related diseases. These disorders encompass malignant hematologic disorders such as leukemia, lymphoma, and multiple myeloma, as well as non-malignant conditions such as sickle cell disease, thalassemia, bone marrow failure, venous thromboembolism, and hemophilia. In addition, hematologists are pioneers in demonstrating the potential of treating various hematologic diseases and continue to be innovators in the field of stem cell biology, regenerative medicine, transfusion medicine, and gene therapy. ASH membership is comprised of basic, translational, and clinical scientists, as well as physicians providing care to patients.

ASH supports a high-quality, peer review system for our two journals, *Blood* and *Blood Advances*, and our annual meeting periodical, *Hematology ASH Education Program*, and is pleased to offer its perspectives on the following topics noted by OSTP in its RFI.

1. *What current limitations exist to the effective communication of research outputs (publications, data, and code) and how might communications evolve to accelerate public access while advancing the quality of scientific research? What are the barriers to and opportunities for change?*

The Society has seen no evidence that there is any limitation to the effective communication of research results and key papers from ASH's publications. Because of ASH's investment in its peer review, production systems, state-of-the-art website platforms and distribution channels, *Blood* was cited over 161,827 times in 2018, and ranked #1 in hematology in Google Scholar and Journal Citation Report.

The Society's flagship journal, *Blood*, has been at the forefront of electronic publishing since 1997, when the journal first went online. Earlier full-text content that is archived reaches back to the first issue published in 1946. It is important

2020

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Nathie Leggett, Esq.

to note that the entire back content of *Blood* is freely accessible to users worldwide: everything that is one year old or older has full and free public access.

Moreover, some of the most relevant content in *Blood*, as well as everything in *Blood Advances*, is accessible to the public at the moment of publication: clinical care guidelines are made freely available immediately, as are important, practice-changing research discoveries that improve our nation's health. Furthermore, if patients request access to breakthrough studies related to their blood disease, we also provide this resource to them immediately, at no charge. In addition, the content in our annual meeting periodical, *Hematology ASH Education Program*, will be made freely available online as part of the upcoming 2020 annual meeting.

As stated previously, given that 99% of our journal content is already publicly available, ASH does not believe that there are any limitations to accessing publication content, including data. This content can be “free and open to the public” predominantly because journal revenue from subscriptions, advertising, and licensing of the intellectual content supports these features. Any alterations to the current 12-month embargo policy, however, would make it difficult for ASH to maintain its strong peer review and curation system, impacting the Society's commitment to research integrity and authenticity. The Society balances optimal free public access with responsible management of financial resources. We feel that our approach of using a combination of revenue streams—subscription income, membership dues, advertising revenue, commercial reprints, and limited author fees—constitutes a reliable and sustainable business approach to publishing and is preferable to a solely “author-pay” model.

The Society's robust peer review and curation system plays a formative role connecting and fostering communities of research, scholarship, and practice. ASH publications are owned, edited, and managed by the hematology community that we support. ASH editors provide important oversight, ensuring that data are original, and conclusions are valid, all to help reproducibility to further the research. The support structure for publishing these high-quality journals requires 30+ editors, 160+ editorial board members, 3,725 reviewers, and 22 staff. This investment made by ASH allows us to develop manuscripts that improve the efficacy and accessibility of the research in support of patient care and treatment. Each submitted paper is reviewed by the Editor-in-Chief and on average, manuscripts published in the journals receive three reviewers that can lead to multiple revisions in support of accurate representation of the research.

To help accelerate public access, the journals' content – the papers along with supplemental data – are published on state-of-the-art platforms, disseminated to the community via email alerts, social media, press releases, and pushed to various indexing services like PubMed Central, and podcasts.

2. *What more can Federal agencies do to make tax-payer funded research results, including peer-reviewed author manuscripts, data, and code funded by the Federal Government, freely and publicly accessible in a way that minimizes delay, maximizes access, and enhances usability? How can the Federal Government engage with other sectors to achieve these goals?*

As noted above, the Society supports public access to important, practice-changing research discoveries that improve our nation's health. Our business model allows for certain

circumstances that warrant open access to articles that summarize important advances that build a bridge to clinical content or in response to patient requests for breakthrough studies related to their blood disease.

The analysis and presentation of the research is not funded by the Federal government. ASH fully funds the curation process, including peer review, the investment in the editorial process including the identification of experts in the field, and the submission and distribution platforms required to disseminate the research to the community. Because of ASH's continued investment for more than 70 years, researchers trust the *Blood* brand and its association with high quality, which in turn accelerates research by allowing the investigators to focus on validated results.

ASH's robust peer review system, as well as curation, publication, distribution, and long-term stewardship of research articles requires resources at no cost to taxpayers. Peer review allows the assessment of research findings by the leading researchers in the community, which can influence important details such as drug dosage. Not being able to fund a robust peer review system could ultimately endanger public health and patient care. Further, eliminating the current 12-month embargo would force the Society to shift the cost of maintaining its peer review and publishing services to authors, researchers, and institutions that are dependent on taxpayer financing for much of their scientific work. The Society is concerned that if the current embargo is eliminated, the author then would be responsible for paying increased article processing charges, which could greatly impact the amount of federal funding used on research. A strong peer review process to ensure quality, discoverable, and reproducible research, requires significant financial resources. A shift in this ecosystem may negatively impact the ability to collaborate with international investigators who may not have access to necessary funding.

For more than ten years for *Blood* and since *Blood Advances*' inception in 2016, supplemental data from federally funded research is already made publicly available upon the acceptance of a paper from ASH's journals. As previously stated in [ASH's response to OSTP](#) in its *Request for Public Comment on Draft Desirable Characteristics of Repositories for Managing and Sharing Data Resulting from Federally Funded Research [FR Doc. 2020-00689]*, as well as in [ASH's response to the National Institutes of Health](#) *Request for Public Comments on DRAFT NIH Policy for Data Management and Sharing and Supplemental DRAFT Guidance*, ASH's journals, *Blood* and *Blood Advances* currently mandate that datasets be accessible by reviewers and editors at the time of paper submission and must be publicly available as of the date of publication. We support efforts to improve the consistency of information that Federal Agencies provide to scientists on the long-term preservation of data resulting from federally funded research, along with the effort to improve and support the discoverability, management, and sharing of data.

If access to data generated by federally funded research is done appropriately, it will enhance research transparency and accuracy, as well as foster the reproducibility and reliability of the data. More importantly, it will provide an opportunity to analyze data in new ways that might further enhance scientific discovery and promote collaborative interactions.

3. *How would American science leadership and American competitiveness benefit from immediate access to these resources? What are potential challenges and effective approaches for overcoming them? Analyses that weigh the trade-offs of different approaches and models, especially those that provide data, will be particularly helpful.*

The U.S. leads the world in hematologic discovery and our journals are the record of that discovery; the intellectual property value is considerable. Undermining the distribution of copyrighted scholarly articles significantly devalues scholarly authors' intellectual property rights in their articles. Under a full open access policy with no embargo period, research articles would be freely available as soon as they are published, and copyright protection removed. Removing copyright protection equates to giving U.S. intellectual property away. These property rights are designed to further free market transactions that contribute greatly to the U.S. economy. Allowing open access articles without the protection of copyright devalues the American science leadership enterprise and erodes our international competitive edge. Any change to the current model, as mandated by the 2013 Holdren [memo](#), would render these critical property rights near-worthless and would essentially give away the government's financial investment into therapies and cures for cancer and other diseases and disorders. This would be detrimental to the scientific enterprise; proposals that remove copyright protection (as for example by encouraging CC-BY) give permission for the taking of US intellectual property by any commercial entity, anywhere, for any purpose.

We are also concerned that the reliance on preprints may negatively impact scientific advancements because it does not embrace the value of peer review and allows scientists to work without protection against potentially erroneous information.

Again, ASH appreciates the opportunity to provide comments on public access to peer-reviewed scholarly publications, data and code resulting from federally funded research. Please use Suzanne Leous, ASH Chief Policy Officer, as your point of contact at sleous@hematology.org or 202-292-0258, if you require additional information from the Society on this matter.

Sincerely,



Stephanie J. Lee, MD, MPH
President

Name: Raleigh L. Martin, Ph.D.

Organizational Affiliation: Self

Primary Scientific Discipline: Geosciences (Physical Sciences)

Role: Researcher / Administrator (Policy)

Date: April 6, 2020

Re: “Request for Information: Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research”

Response:

This Request for Information (RFI) response is my personal opinion alone, and it does not reflect the official opinion of my current or previous employers. Nevertheless, these comments build on years of experience working as a research geoscientist, as the co-leader of a small disciplinary data repository, and as an AAAS Science & Technology Fellow hosted in the Directorate for Geosciences at the U.S. National Science Foundation (NSF), where I worked on improving data sharing and public access to research generated by NSF grantees in the geosciences. In addition, I am currently a Congressional Geoscience Fellow sponsored by the American Geosciences Institute (AGI) and hosted by the House Select Committee on the Climate Crisis; in this capacity, I regularly seek access to peer-reviewed scholarly publications to inform recommendations for Congressional policy actions on climate change.

Below, I provide answers to the specific questions considered in this RFI.

What current limitations exist to the effective communication of research outputs (publications, data, and code) and how might communications evolve to accelerate public access while advancing the quality of scientific research? What are the barriers to and opportunities for change?

Outside of scholarly communities, the primary need is to access the end results of scientific research, which are mostly contained in peer-reviewed scholarly publications. However, non-scholarly communities typically lack journal subscriptions that would enable access to these publications. An increasing fraction of journal articles are publicly accessible, either because they are published in open access journals, or because articles are released after a certain embargo period. However, a substantial fraction of articles remains inaccessible to the general public, either because they are held behind paywalls, or because federally-mandated repositories (e.g., NSF’s Public Access Repository) remain mostly unknown. For example, in my current work for a Congressional committee, I frequently cannot access scholarly articles of interest, because my committee does not maintain access to journal subscriptions.

Solving the publication issue is primarily a business problem. The operation of scientific journals costs money, which is currently paid both as article processing charges (APCs) and as subscription fees. Journal revenues also support the work of non-profit scientific societies.

However, these business challenges should not be excuses preventing the transition to a world of full open access to scholarly publications. Instead, these concerns about business models and financial viability must be given serious consideration in designing a plan to gradually transition scholarly research into a fully open access world. The appropriate path to this transition should not be enforced as a rigid top down mandate, such as the European Union’s “Plan S.” Instead, the transition should occur gradually through a participatory stakeholder-driven process. Journals and university systems are currently experimenting with a variety of promising approaches to drive this transition. The 2018 National Academies report, *Open Science by Design*, provides a full consideration of these issues.

Within scholarly communities, access to journal articles is not the main concern, because most universities and research institutions maintain reasonably comprehensive journal subscriptions. Instead, the issue for scholarly communities is public access to data, code, and other scholarly products, for which the primary obstacles are related to technical capacity. Most researchers are not trained on practices for managing, curating, and publishing their data. Systems for review of research proposals and scholarly publications typically place very little weight on data management plans and data sharing, even when official policies clearly state otherwise. Furthermore, there remain difficult questions about which data and code are even worth the effort and cost of sharing, especially as datasets become extremely large and expensive to curate and host indefinitely on computer servers.

There are no easy answers to promoting greater public access to research data and code. Each research community faces its own unique challenges, depending on the nature of the research performed. Nonetheless, as with scholarly publications, the difficulty of the challenge should not be an excuse for inaction. Federal sponsors of scientific research should push their communities to engage in serious and sustained conversations to determine community standards and norms over appropriate expectations for sharing of data, code, and other scholarly products. These federal sponsors should then hold these communities accountable to their own standards. They should also dedicate a significant fraction of research funding support to the training and infrastructure needed to sustain data and code sharing to meet community expectations.

What more can Federal agencies do to make tax-payer funded research results, including peer-reviewed author manuscripts, data, and code funded by the Federal Government, freely and publicly accessible in a way that minimizes delay, maximizes access, and enhances usability? How can the Federal Government engage with other sectors to achieve these goals?

As described in my response to the previous question, Federal responses for public access to peer-reviewed manuscripts need to be considered distinctively from public access to data and code. Actions to enhance public access to manuscripts need primarily to consider the needs of the general public to access the results of scholarly articles, and the limitations of existing business models that depend on subscriptions to closed-access journals. In contrast, access to scholarly data, code, and other research products is primarily an issue internal to research communities. Therefore, Federal agency engagement should primarily be with stakeholders across the research data lifecycle, including research funders, universities, libraries, and academic journals. The perspectives of commercial providers of big data services should also be

included in these conversations, but caution should be exercised to ensure that commercial entities are acting in the long-term public interest.

How would American science leadership and American competitiveness benefit from immediate access to these resources? What are potential challenges and effective approaches for overcoming them? Analyses that weigh the trade-offs of different approaches and models, especially those that provide data, will be particularly helpful.

Research is an international endeavor. Publications, data, and code made publicly accessible to American audiences will inherently also be accessible international audiences. In certain cases, such openness may be perceived as giving an unfair advantage to researchers in other countries, who may not reciprocate America's spirit of openness. Nonetheless, specific instances of open science conveying a slight advantage to foreign rivals will be far outweighed by the great advancements in American productivity and scientific leadership that will be conveyed by an open approach to research and innovation. Protections for proprietary, personal, and classified information must be considered, but these should not be used as excuses for limiting access to the preponderance of scientific research that is unaffected by such concerns. Even in cases where protecting personally identifiable information is a significant concern, there are innovative approaches that are in development to provide some measure of public access to these restricted datasets.

Any additional information that might be considered for Federal policies related to public access to peer-reviewed author manuscripts, data, and code resulting from federally supported research.

I urge serious caution in actions by certain federal agencies to weaponize the cause of public access toward restricting the availability of scientific information to inform public policy. The so-called "Strengthening Transparency in Regulatory Science" rule, currently under consideration for supplemental notice of proposed rulemaking by the Environmental Protection Agency (EPA), manipulates the language of open science to perversely restrict access to high-quality scientific information for regulatory actions (see 40 CFR 30). Open access to publications, data, and other scientific products is a laudable goal, but credible scientific findings should not be summarily rejected simply because they do not meet some arbitrary standard for "transparency" as determined by a politically-appointed Federal agency administrator. Though I fully support efforts by the Office of Science and Technology Policy and Federal science agencies to broaden public access to research publications, data, code, and other products, I strongly oppose Federal agency activities that seek to censor the consideration of certain scientific findings according to certain arbitrary standards of "transparency."

From: Sharon Yeager <yeagersb1@verizon.net>

Sent: Sunday, April 5, 2020 3:17 PM

To: MBX OSTP Public Access <MBX.OSTP.PublicAccess@ostp.eop.gov>

Subject: [EXTERNAL] RFI Response: Public Access

Dear Ms. Nichols:

I agree that taxpayer-funded research should not be kept behind paywalls (Elsevier, etc.); however, this legislation should specify that any commercial product created through use of such research findings (particularly a drug or medical intervention) must be priced to ensure access to all who may benefit. That is, taxpayer-funded information cannot be turned into private profit without equal or greater benefit to the taxpayers.

Sharon Yeager
Allegheny County
Pittsburgh, Pennsylvania



April 6, 2020

To: The White House Office of Science and Technology Policy (OSTP)

On behalf of the Cholangiocarcinoma Foundation Board of Directors and the global patient community, I would like to thank the White House Office of Science and Technology Policy for taking time to consult with stakeholders about open access to publicly funded research assets. We appreciate the opportunity to provide recommendations on approaches for ensuring broad public access to peer-reviewed scholarly publications, and digitally formatted data resulting from federally funded scientific research. We are eager to engage with federal agencies and other like-minded entities and hope that sharing our perspective will help the Administration form a more balanced view of all stakeholders interested in this topic.

I am the Chief Executive Officer and Founder of the Cholangiocarcinoma Foundation (CCF). Established in 2006, CCF is a global 501(c) (3) non-profit organization whose mission is to find a cure and improve the quality of life for those affected by cholangiocarcinoma (bile duct cancer).

I also serve as a Founding Member of the International Cholangiocarcinoma Research Network (ICRN). The ICRN is a global consortium of research groups that are working in concert to improve knowledge about cholangiocarcinoma etiology, prevention, early detection, treatment and prognosis with an expectation to accelerate scientific and medical progress on an international level, expedite delivery of innovative care and treatments, and improve health outcomes for patients.

I regularly engage with members of the scientific, medical, and academic communities; policymakers and regulators; industry and biotech; advocates, patients, and caregivers to advance scientific research to benefit patients with cholangiocarcinoma. My efforts focus on increasing knowledge and understanding about key issues central to the prevention, diagnosis, treatment, and cure; promoting, strengthening, and supporting global collaborations in this field; nurturing a dedicated team of young investigators who will forge new alliances, stimulating dialogue and inspiring innovation in the study of cholangiocarcinoma; and advocating for those affected by this rare and aggressive form of cancer.



Positions and Honors

- Founder, President, Advocate – Cholangiocarcinoma Foundation
- Founder, International Cholangiocarcinoma Research Network
- Society for Surgery of the Alimentary Tract (SSAT) Public Service Award
- Global CCA Alliance – Steering Committee Member
- Patient Advocate, MGH Hepatobiliary SPORE, 2017- present
- Executive Committee Member, GI Cancers Alliance, 2016- present
- Patient Advocate, Mayo Clinic Hepatobiliary SPORE, 2014- present

Speaking Engagements:

- Cholangiocarcinoma Foundation Annual Conference - Salt Lake City, Utah 2019, 2018, 2017, 2016, 2015, 2014
- Asia-Pacific Cholangiocarcinoma Conference - 2019, 2018, 2017
- AHPBA Annual Meeting – Miami, Florida 2019, 2018
- Keynote Speaker, MD Anderson 2nd Annual Sawyer International Pancreatobiliary Symposium, Houston, Texas 2017
- Hepatobiliary Cancers: Pathobiology and Translational Advances - Glen Allen, Virginia 2017
- FDA Symposium on Cholangiocarcinoma - Silver Spring, Maryland 2017
- Mayo Clinic SPORE Hepatobiliary Cancer Retreat - Rochester, Minnesota 2016, 2015, 2014
- Houston Methodist Liver Symposium - Houston, Texas 2016, 2014
- World Orphan Drug Congress - Washington, DC 2014

In October of 2005, my family gathered at our brother's request. Mark and his wife, Marianne, expecting their fourth child a few weeks later, told us that he had been diagnosed with inoperable, incurable cancer. Stunned silence was immediately followed by confused tears.

When my husband and I got home that night, I immediately got to work on the computer and began what would become 15 months of intense research, networking and soul-searching. My family made a plan. Mark would look after his well-being; Marianne would take care of their newborn son, Lucas, and their other three children: Patrick, Chase, and Tessa. My mother, father, two sisters, and I would divide and conquer everything else.

Bit by bit, information was cobbled together from the dozens and dozens of conversations I had with physicians across the country willing to hear our story and take a look at Mark's medical records. Pieces of information and additional research from other patients were assessed and integrated where applicable. False hope and miracle cures abounded, but we were willing to take a look at everything, without restriction.



We worked long hours trying to provide hope for Mark, his family, and ourselves. In the end, my family did not receive what it had hoped and worked for, but we did receive comfort in answer to prayer, clear direction from above, and abundant love from the many professionals, patients and friends we had connected within the process.

As heart-wrenching as this journey was for us, we were determined that no one else should have to invest the time and effort we did to gather information and surround themselves with an empathetic community. Somehow, we would find a way to endow others with hope and support. Out of this desire came the Cholangiocarcinoma Foundation.

This Foundation was born out of love, and every hour that has gone into it has been volunteered by board members, each one having lost a loved one to cholangiocarcinoma or suffering from cholangiocarcinoma and surviving. Many others have volunteered their time and energy to fill a need. Our vision for the Foundation expands every day but our ultimate goal is to find a cure.

As is the case in most families when faced with a health crisis, the first thing I did was go online to search for the latest and best information available. Those first weeks and months of research were overwhelming as I realized there wasn't much information to be found. Much of the information was in the form of articles in scientific journals. Some of the data was buried in PubMed but I soon realized the only way to see all of the information was to subscribe to expensive journals or pay a hefty sum every time I wanted to read an individual article. Data was even more difficult to access as it was often found difficult to understand formats or on sites that were hard to use. Fast forward 15 years later and the paradigm is still the same. There is an uneven playing field for rare disease organizations like CCF who have limited budgets and even more so for individuals trying to save their loved one's life.

Having information and data generated by federally funded research more readily accessible to academia, researchers, clinicians, biotech, and the general public who support these investments would undoubtedly accelerate scientific knowledge and innovation. It would allow researchers to make much needed progress, in a more rapid fashion, which is crucial for a rare and deadly disease like cholangiocarcinoma. The flow of new information and data would open a breadth of knowledge that could inform other specialties and offer a more level playing field.

Further, having access to this information is vital for a mission-based organization like ours as it will inform decision-making for short-term and long-term strategic planning. It is nearly impossible to forecast the future trajectory of cholangiocarcinoma research when access to vital information is available, but completely inaccessible.



To address these challenges, federal agencies could create an online repository similar to the DOAJ that offers free, unrestricted access to research outputs such as articles and books, including peer-reviewed and non-peer-reviewed academic journal articles, conference papers, theses, book chapters, and monographs. This tool would address the current limitations that exist to the effective communication of research outputs.

The federal government could engage with the technology sector to bring this new platform to fruition in a timely manner. Social media and educational materials could be used to inform the global scientific community about the availability of this new service.

Open access to research outputs will improve the public trust in science by providing more transparency and accountability. It will help to inform public policy and increase the government's return on investment in research. It will allow small rare disease organizations like CCF to target funding on the most promising research areas.

Having open access to research will speed up the pace of research saving valuable time that we need to get to new treatments, therapies, and cures.

The biggest challenge to overcome will be taking down the silos that are so prevalent now in the scientific community. The scientific community will need to learn how to collaborate and competition will need to step aside to allow and encourage this new mode of information sharing.

In closing, thank you again for facilitating discussion of this vital issue. We encourage you to follow through by swiftly implementing a robust open access policy for the results of publicly funded research.

Sincerely,

A handwritten signature in black ink that reads "Stacie Lindsey". The signature is written in a cursive, flowing style.

Stacie Lindsey
Cholangiocarcinoma Foundation
CEO and Founder

From: Risenhoover Dr. Paul Maas <americansteamtargetofficer@gmail.com>

Sent: Monday, April 6, 2020 8:32 AM

To: MBX OSTP Public Access <MBX.OSTP.PublicAccess@ostp.eop.gov>; FN-OSTP-Engagement <Engagement@ostp.eop.gov>; OSTP Press Office <MBX.OSTP.Press@OSTP.eop.gov>; Paul Maas Risenhoover <nationalsteamtargetofficer@gmail.com>; formosacivilgovernment <formosacivilgovernment@gmail.com>

Subject: [EXTERNAL] Comments re OSTP-2020-0005-0001 Request for Information: Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting from Federally Funded Research

Comments re OSTP-2020-0005-0001 Request for Information: Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting from Federally Funded Research

Dr. Kelvin K. Droegemeier
Director, White House Office of Science and Technology Policy
c/o Lisa Nichols
Assistant Director for Academic Engagement, OSTP
at publicaccess@ostp.eop.gov
and for Sean Bonyun,
Chief of Staff, Office of Science and Technology Policy

Dear Director Droegemeier and Asst. Director Nichols,

A twelve month embargo stifles our global scientific collaboration.

Also, use of the global WIPO and USPTO and proprietary patent machine translation software should be applied to Open Source Scientific Information and to all Federally sponsored Research and Data.

Data visualization efforts should also be a key focus of the OSTP initiative.

Also, OSTP should establish a COVID-19 Global Bioinformatics Working Group in addition to the HPC Consortium, Formosa's National Health Insurance Database should be represented by an Ambassador for Global Public Health on the Working Group.

Moreover, it is imperative that OSTP support 25 USC 2902 and 2904 Native American language initiatives, including the native Formosan languages: Thus, the native Formosans are similar in status to Palauans, Marshalese, Chamorros, and Carolinians:

><https://history.state.gov/historicaldocuments/frus1944v05/d1218><

Non-Japanese Inhabitants of Formosa

Although Chinese-Formosans and the aborigines, in a legal sense, are enemy nationals, in a political sense, the Chinese-Formosans should be treated as "liberated peoples", and the tribal aborigines as wards of the military government (PWC-19463).

><https://history.state.gov/historicaldocuments/frus1944v05/d1208><

Formosa has been under Japanese sovereignty for half a century. Although technically all Formosans, therefore, are enemy nationals, the State Department looks upon the Chinese Formosans and the Formosan aborigines as quite apart from the persons of Japanese blood who

live on the island. It anticipates that the Military Governor will act generally on the assumption that the Chinese Formosans, who speak Chinese and are of Chinese or of mixed Chinese and aborigine origin, are to be restored to Chinese citizenship after the war, and that the tribal aborigines, who are akin to the non-Christian peoples of Northern Luzon, are neither Japanese nor Chinese, but more properly to be considered as wards of whatever government has control of the island.

The Marshall, Caroline and Marianas Islands, on the other hand, have been held by Japan only under mandate and the natives of these islands have never become Japanese nationals. They should be treated as wards of the military government. A number of Koreans may be found in the islands. If so, special consideration should be given them.

We also hope OSTP will sponsor Global Teleconferences during this unique period of challenge, to help spread the latest advances in international public health best practices and information.

Respectfully,

Dr. Paul Maas Risenhoover
Tainan, FORMOSA, the island of Taiwan

Comments of the Medical Library Association and Association of Academic Health Sciences Libraries

In response to the Office of Science and Technology Policy [Request for Information: Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research](#)

Document Citation: 85 FR 9488

Page: 9488-9489 (2 pages)

Document Number: 2020-03189

Submitted April 2, 2020

These comments are submitted by Mary M. Langman, Director, Information Issues and Policy, on behalf of the Medical Library Association (MLA) and Association of Academic Health Sciences Libraries (AAHSL) and were written by health sciences librarians who are members of these organizations.

The Medical Library Association (MLA) and Association of Academic Health Sciences Libraries (AAHSL) continue to support legislative and federal initiatives that increase public access to the results of federally funded research. MLA and AAHSL also continue to emphasize the importance of funding the development and support of infrastructure that enables access to these results and supports compliance with these legislative and federal initiatives.

To improve public access to the results of federally funded research, MLA and AAHSL strongly encourage the OSTP and the NSTC's SOS to consider a "zero-embargo" open access policy, which would require the products of federally funded scientific research (i.e., articles, data, and code) to be publicly available immediately upon publication. This change to the existing policy, which dictates a 12-month embargo on the public availability of federally funded research outputs, has been adopted by other countries ([i.e., Plan S](#)) as well as foundations, such as [the Bill & Melinda Gates Foundation](#) (1,2). As recent world events related to COVID-19 have demonstrated, immediate access to high quality scientific literature and data can fundamentally impact the ability of a nation to respond decisively and effectively in the face of an international crisis. [This immediate access also allows for innovation and collaboration to occur in ways that benefit the country as well as the world, as demonstrated by the creation of the machine-readable COVID-19 dataset](#) (3).

When the standard of immediate access (i.e., zero-embargo) is established, providing guidance and workflows to ensure that standard is met will be of utmost importance. Existing platforms, such as PubMed Central, have moved to better connect articles with associated data, which provides a more holistic view of scientific research. Continuing to pursue this connected infrastructure will further accessibility efforts as well as broadly disseminate information necessary to validate and reproduce scientific research. In the case of data and software code, providing clear guidance as to which repositories are appropriate for housing such materials

would be extremely beneficial. Additionally, [as recommended by MLA/AAHSL in their comments on the “Draft NIH Policy for Data Management and Sharing and Supplemental Guidance”](#), in recognition of the extra effort required to provide access - and properly maintain - such materials, federally funded research should allow for costs associated with providing timely access to research outputs to be included in budgets (4).

Both MLA and AAHSL are committed to furthering immediate public access to peer-reviewed scholarly publications, data, and code that result from federally funded scientific research. We encourage the OSTP and the NSTC’s SOS to adopt such a position, provide necessary guidance as to how such a requirement will be enforced, and invest in the development of infrastructure to encourage compliance.

References

- (1) <https://www.coalition-s.org/about/>
- (2) <https://www.gatesfoundation.org/How-We-Work/General-Information/Open-Access-Policy>
- (3) [h https://sparcopen.org/wp-content/uploads/2020/01/SPARC-White-House-Letter-1.pdf](https://sparcopen.org/wp-content/uploads/2020/01/SPARC-White-House-Letter-1.pdf)
<https://www.whitehouse.gov/briefings-statements/call-action-tech-community-new-machine-readable-covid-19-dataset/>
- (4) <https://www.mlanet.org/p/cm/ld/fid=1122&&blogaid=2812>

Organizational Profiles

[The Medical Library Association \(MLA\)](#) is a nonprofit, educational organization with 3,500 health sciences information professional members worldwide. Founded in 1898, MLA provides lifelong educational opportunities, supports a knowledgebase of health information research, and works with a global network of partners to promote the importance of quality information for improved health to the health care community and the public.

[The Association of Academic Health Sciences Libraries \(AAHSL\)](#) supports academic health sciences libraries and directors in advancing the patient care, research, education, and community service missions of academic health centers through visionary executive leadership and expertise in health information, scholarly communication, and knowledge management.

From: Smits, R.J.H.M. <r.j.h.m.smits@tue.nl>
Sent: Sunday, April 5, 2020 11:53 AM
To: MBX OSTP Public Access <MBX.OSTP.PublicAccess@ostp.eop.gov>
Subject: [EXTERNAL] OSTP - RFI Response: Public Access

Dear Dr. Nichols,

The Corona crisis has shown us once more, how important it is that the results of publicly funded research, be it scientific publications or data, after a robust peer review, are shared and made available immediately, without delay for the benefit of society as a whole.

Unfortunately, however, there still exist a number of barriers that hamper the above mentioned policy objective to be achieved. The most important of these barriers are the ‘ embargo periods ‘ often up to 12 months. I have never understood why embargo periods are good for science and no one has ever been able to explain that to me. The second barrier are the legal impediment related the reuse of scientific output. As third barrier, I would mention fact that scientific data are often unstructured, of mixed quality and not stored in high quality repositories.

To address these barriers requires that: embargo periods are abolished, full reuse rights are applicable and a culture of data stewardship is created whereby data management has to adhere to the FAIR principles (Findable, Accessible, Interoperable and reusable) and data are stored in high quality repositories.

Given the strength of the American culture of entrepreneurship, there is no doubt whatsoever that an Open Access policy of scientific publications and data where there are zero embargo periods, will accelerate and boost US competitiveness. 12 months can be gained !

Yes, the above mentioned measures will require the commercial publishers to change their business model. Society at large will, however, understand that the objective of federally funded research is not to lock the results of this research behind high paywalls for the happy few to have access to, but to make these results available to the American taxpayer and to the American society as a whole.

Kind Regards.

Robert-Jan Smits

Voorzitter College van Bestuur TU/e
President of Eindhoven University of Technology
Atlas 1.501 / De Zaale / 5612 AJ / Eindhoven
PO box 513 / 5600 MB / Eindhoven
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><http://www.tue.nl><



April 3, 2020

Mr. Sean Bonyun
Chief of Staff, Office of Science and Technology Policy
Executive Office of the President
1650 Pennsylvania Avenue
Washington, DC 20504

Lisa Nichols, Ph.D.
Assistant Director for Academic Engagement
Office of Science and Technology Policy
Executive Office of the President
1650 Pennsylvania Avenue
Washington, DC 20504

RE: Request for Information: Public Access to Peer-Reviewed
Scholarly Publications, Data and Code Resulting from Federally
Funded Research

Dear Mr. Bonyun and Dr. Nichols:

As the nation's oldest and largest voluntary organization dedicated to building healthier lives free from heart disease and stroke, the American Heart Association (AHA) would like to respond to the Office of Science and Technology Policy's Request for Information (RFI) regarding public access to peer-reviewed scholarly publications, data, and code that result from federally funded scientific research. We recognize the importance of ensuring U.S. taxpayers have access to timely, accurate information and we view the RFI as a welcome opportunity for the scholarly and society community to comment on numerous changes occurring in the scientific publishing industry.

AHA is in a unique position because it both funds and publishes research—and not just our own research, but research done by people all over the world. The 12 AHA Journals are a combination of hybrid and open access journals that cover a range of topics related to cardiovascular and cerebrovascular diseases. In addition to original research, our journals publish reviews, editorials, commentaries, case reports, educational articles, news, and summary content—such as text synopses, infographics, podcasts, and videos—to serve time-constrained professionals, clinicians, students, journalists, policy makers, and the lay public. A stable

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mix of subscription and article publishing charge (APC) revenue enables AHA Journals to publish this important, unfunded content. As detailed in this letter, an abrupt policy change to an APC-only revenue model could have severe impacts on our ability to publish and disseminate peer-reviewed articles and support the cardiovascular and stroke research community through research, education, guideline development, and other vital activities that fulfill the AHA's mission to be a relentless force for a world of stronger, healthier lives.

Protecting the Integrity of Scientific Research

Our research funding supports approximately 2,000 active awardees at any time. They produce 5,000 to 7,000 publications each year. AHA Journals are committed to publishing high-quality research and upholding accepted standards of methodological rigor, reproducibility, and transparency. Editors are the curators of science that drives fields forward, ensuring the validity of the science through peer review, technical review, statistical review, and other review mechanisms. AHA and its editors invest in this process, including selection, editing, curation, and distribution of articles that represent key advancements in research. AHA and its editors devote significant time and effort in ensuring that published articles meet the standards of reproducibility and transparency mandated by government funders, such as the National Institutes of Health. AHA and its publishers provide a service to the scientific community by maintaining an accurate record of published content and maintaining its overall integrity. As a professional society, AHA invests significant resources in reviewing, distilling, and translating scientific literature into clinical guidelines and patient resources that are essential in helping clinicians provide consistent and reliable care to patients across the United States.

Stewardship of research outputs beyond just the publication—including data and program code—are also important to the transparency and reproducibility of research. Journals, societies, and publishers have an essential role in helping to enforce appropriate and consistent standards. In recent years, the AHA Journals have adopted numerous community initiatives centered around promoting greater transparency, data availability, and sharing of research outputs. These include, but are not limited to, the following: adoption of Transparency and Openness Promotion (TOP) Guidelines and requiring the publication of data sharing statements and proper citation of data, program code, and research materials; support for posting of manuscripts to pre-print servers prior to submission; encouraging research materials, data, program code, and protocols be posted to publicly available repositories; adoption of common research and reporting guidelines and checklists, such as those established by the EQUATOR network, to standardize the reporting of research results; and increased use of technical and statistical editors whose sole role is to help ensure that published results are clear, thorough, and valid.

Our current data sharing policy for funded researchers requires non-exempt applicants to include a data sharing plan with the application. Any factual data that is needed for independent verification of research results must be made freely and publicly available in an AHA-approved repository within 12 months of the end of the funding period (and any no-cost extension). Data deposits are required whether or not they ever publish. They can select approved data repositories that meet our standards or suggest other repositories which we then vet. Our experience has found that researchers lack skills to share data in a way that is efficient and effective. Improved infrastructure support for open repositories would allow them to make data available quickly and seamlessly. Another area that requires attention is the lack of existing incentives for awardees to share all the data needed to replicate their research data. Incentives should be better designed to reward researchers through the promotion, recognition, and rewards related to academic appointments.

Facilitating Access to Quality Data and Evidence

Our public access policy for funded research requires that all journal articles resulting from AHA funding be made freely available in PubMed Central (PMC) and linked to an AHA award within 12 months of publication. It is the responsibility of the awardee to ensure journal articles are deposited into PMC. This has been well received and PMC provides discoverability that searching publisher's sites would not provide.

The overall goal of these initiatives at our journals is to support and encourage the sharing of researcher materials, data, program code, and results to promote reproducibility and rigorous research without unnecessarily overburdening researchers. By issuing this RFI, the OSTP appears to have a similar goal and we support this effort. As both a funder and publisher, the AHA recognizes the importance of funders, societies, and journals working in collaboration with a common goal of producing rigorous, impactful, and sustainable research that drive new developments and continually improve patient care and outcomes. We support the efforts of the OSTP in that direction.

In 2013, the Holdren memorandum directed federal agencies (\$100 million and up) to make the results of research they support publicly available within a year of publication. This one-year mandate is now the industry standard within science, technology, and medical publishing, allowing professional societies such as AHA to recoup the expenses involved with supporting a rigorous peer review system with editorial boards of the highest academic excellence. This one-year mandate ensures the highest quality research is disseminated to the cardiovascular clinician and researcher in a timely manner and protects the public health.

Preventing Disruptions to the Research Ecosystem

The costs publishers and societies experience for publishing the articles must be balanced with the needs of the public to have the articles available in a timely manner. A potential barrier to advancing the quality of scientific research is upsetting the research ecosystem in which scholarly societies and journals participate. The AHA Journals are renowned for their emphasis on, and investment in, scientific rigor and relevance. Any policy change that abruptly forces a move to an APC-only revenue model could have negative ramifications that would limit our ability to publish and disseminate rigorous peer-reviewed articles and support the cardiovascular and stroke research community.

As referenced in our letter of January 16, 2020, moving to a fully open access model from a hybrid model moves fixed publishing costs associated with rigorous peer review to the researchers and authors through article publishing charges (APCs), imposing significant financial burden to researchers and authors publishing manuscripts of clinical importance. It could also be another factor that negatively influences the number of researchers who pursue an academic career, including increasing the disparities faced by less-funded researchers, such as early-career individuals and underrepresented racial and ethnic groups, consequently impacting the viability and diversity of the research enterprise and discoveries that improve population health. Another anticipated effect is an increase in the amount of grant monies requested of public funders, such as the National Institutes of Health, and organizations such as AHA, to cover the cost of publishing in a fully open access environment. Such a shift would effectively diminish the amount of funding available to the research and scientific community in the United States.

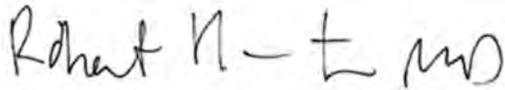
Efficiently Sharing Data in a Sustainable Manner

Federal agencies can support further transparency and sharing of materials, data, and results by providing essential infrastructure, such as ClinicalTrials.gov, and continuing to support new and established industry standards, such as ORCID (Open Researcher and Contributor ID) researcher IDs. Policies should encourage globally unique and persistent identifiers for research outputs such as data and program code, as well as provide for vetting of open repositories and guidelines and support for curation and maintenance of data. These efforts and others would maximize interoperability. Effective data sharing leads to less redundancy, less waste, and the more rapid coherence of team science. Journals and societies in turn can support these infrastructure and standards by helping to ensure compliance and adoption and through member support of standards organizations such as ORCID and CrossRef.

It must be recognized that there is a cost to such efforts, and the entire structure of scientific review maintained by journals and societies. An APC-only revenue model is not sustainable for high impact journals. Significant resources go into producing high quality articles and publications, but the percentage of original research articles can be low in these journals. APC revenue would not cover these journals or provide motivation to include unfunded content. The current 12-month embargo period represents a successful arrangement that supports societies, journals, and researchers, allowing them to publish in the best venue for their research while also ensuring timely access to science.

The American Heart Association appreciates the consideration of our views regarding improving public access to federally funded research. We are encouraged by a future in which funders, journals, and societies are in close collaboration to ensure a consistent, reliable, interoperable, and accessible framework for researchers to sustainably share all their research outputs. We look forward to working with your office to make this goal a reality. If you need any additional information regarding our research enterprise or publications, please contact Heather Goodell, AHA's Vice President of Scientific Publishing at heather.goodell@heart.org or Glenn Dillon, Director, Research Operations at glenn.dillon@heart.org.

Sincerely,

A handwritten signature in black ink that reads "Robert Harrington". The signature is written in a cursive style with a horizontal line through the middle of the name.

Robert Harrington, MD, FAHA
President, American Heart Association



American Society of Transplant Surgeons®

Saving and improving lives with transplantation.

April 6, 2020

Lisa Nichols
Assistant Director for Academic Engagement
Office of Science and Technology Policy
1650 Pennsylvania Ave NW
Washington, DC 20504
publicaccess@ostp.eop.gov

Re: 85 FR 9488; Request for Information: Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting from Federally Funded Research

Dear Assistant Director Nichols:

On behalf of the American Society of Transplant Surgeons (ASTS), I am pleased to have the opportunity to comment on the Office of Science and Technology Policy Request for Information. ASTS is a medical specialty society representing approximately 1,900 professionals dedicated to excellence in transplantation surgery. Our mission is to advance the art and science of transplant surgery through patient care, research, education, and advocacy.

Together with the American Society of Transplantation (AST), we publish the American Journal of Transplantation, which disseminates peer-reviewed, cutting-edge basic, clinical, and translational scientific research regarding solid organ transplantation. It plays a key role in advancing this life-saving field.

ASTS supports the ideals of making research data widely available where appropriate. However, lowering the current 12-month embargo could severely impact our ability to invest in publishing and disseminating peer-reviewed articles, actually impeding the goals of advancing American innovation and competitiveness.

Such a model would force researchers to pay to publish; however, existing grants do not usually cover such costs, so these funds would take away from those available to support actual research. This could slow the pace of research in the United States.

ASTS hopes to find opportunities to partner with OSTP on developing ways to make research more widely available while avoiding unintended consequences. If you have any questions, please contact Executive Director Dan Garrett at Daniel.garrett@asts.org or 703-414-7870.

Sincerely yours,

Lloyd E. Ratner, MD, MPH
President
American Society of Transplant Surgeons

President

Lloyd E. Ratner, MD, MPH
Columbia University

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ASTS.org

American Transplant Congress

May 30 – June 3, 2020
Philadelphia, Pennsylvania

From: Sheehan, Laura W. <LSheehan@mednet.ucla.edu>

Sent: Thursday, April 2, 2020 11:34 PM

To: MBX OSTP Public Access <MBX.OSTP.PublicAccess@ostp.eop.gov>

Subject: [EXTERNAL] OSTP Request for Information: Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research

To The Office of the President for the Office of Science and Technology Policy (OSTP):

This letter is in response to your request for feedback on how to broaden public access to research publications, datasets, and software code that arise from federal funding.

Access to publicly-funded research is extremely important, and since billions of taxpayer dollars are spent on research each year, the public has a right to access and use those results. Therefore, I strongly support the zero-embargo policy for author-accepted manuscripts. The government should implement a national open-access policy to ensure that the public has immediate access to the results of scientific research that their tax dollars have funded and to foster the transmission of research and knowledge.

Countries in Europe, Asia and South America are adopting Open Access policies to accelerate scientific research, and the United States is falling behind. Our scientists need to quickly access critical research articles and data to continue being leaders in their fields. Not even the most well-funded campus libraries at major Universities such as my own home campus (UCLA) can afford to continue to pay subscription fees for all of the journals that their researchers require.

Thank you,

Laura Wennstrom Sheehan
Manager of Research Administration
Department of Family Medicine
University of California Los Angeles
10880 Wilshire Blvd., Suite 1800
Los Angeles, CA 90024
Phone: 310-794-8298
Email: LSheehan@mednet.ucla.edu

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The Plan S footprint: Implications for the scholarly publishing landscape

Nandita Quaderi, James Hardcastle,
Christos Petrou and Martin Szomszor

March 2019

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8 How does Plan S affect research areas?	21 Responsibility for costs
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12 How does Plan S affect countries and regions?	24 Annex – Data Sources

Dr Nandita Quaderi is Editor-in-Chief of *Web of Science* at the *Institute for Scientific Information*, responsible for the editorial selection of content indexed in the *Web of Science*. Prior to joining the *Web of Science Group*, Dr Quaderi was Publishing Director of Open Research at Springer Nature where she had responsibility for the portfolio of open access Nature Research journals. Before joining the STM publishing sector she was a EU-funded Marie Curie post-doctoral fellow at the Telethon Institute of Genetics and Medicine in Milan and a Wellcome Trust-funded Principal Investigator at the MRC Centre for Developmental Neurobiology at King's College London. She has a BA in Chemistry from the University of Oxford and a PhD in Molecular Genetics from Imperial College.

James Hardcastle is a Senior Business Analyst at *Web of Science Group*. Prior to this he was Head of Business Development for wisdom.ai, and the Senior Manager for Product Analytics at Taylor & Francis.

Christos Petrou is Head of Strategic Analytics at the *Web of Science Group*. Previously, he was Director of Strategic Analytics at the Open Research Group of Springer Nature. He has worked as a management consultant at A.T. Kearney, and he holds an MBA from INSEAD.

Dr Martin Szomszor is Head of Research Analytics at the *Institute for Scientific Information*. He was Head of Data Science, and founder of the Global Research Identifier Database, at Digital Science. He was named a 2015 top-50 UK Information Age data leader for his work with the Higher Education Funding Council for England (HEFCE) to create the REF2015 Impact Case Studies Database.

About the Global Research Report series from the *Institute for Scientific Information (ISI)*

Global Research Reports from *ISI* is a new publication series to discuss and demonstrate the application of data about the research process to management issues in research assessment, research policy and the development of the global research base. *ISI* is the 'university' of the *Web of Science Group* at *Clarivate Analytics*: it maintains the knowledge corpus upon which *Web of Science* and related information and analytical content, products and services are built; it disseminates that knowledge internally through reports and recommendations and externally through events, conferences and papers; and it carries out research to sustain, extend and improve the knowledge base.

About *Web of Science*

Web of Science is the world's most trusted and largest publisher-neutral citation index, powering global discovery and citation analytics across the sciences, social sciences and art & humanities. With more than 1.4 billion cited references going back to 1900 and millions of users per day — from leading government and academic institutions and research-intensive corporations — *Web of Science* citation network serves as the foundation for the *Journal Impact Factor*, *InCites* and other powerful and trusted citation impact measures. *Web of Science* helps researchers, research institutions, publishers and funders discover and assess the citation impact of over a century of research papers found in the most prestigious journals, books, and conference proceedings.

Summary

This report provides background analysis for debate about a research system in transition. Plan S, launched by Science Europe on 4 September 2018, is intended to increase Open Access (OA) to research data and reports produced through publicly-funded academic research. OA is expected to enable and accelerate discovery and innovation. Plan S requires research funded by signatory organisations to be published in open repositories or in journals where all papers are publicly accessible. This report looks at recent patterns of papers funded by Plan S supporters using perspectives related to funders, subjects, countries, publishers, and journals. It focuses on analysis and variances rather than scenarios.

Funders

Some research funders have already endorsed the Plan S proposals to widen OA. The research they support led to *circa* 6.4% of 2017 papers indexed in the *Web of Science*; the EU funded about half of this. Although OA compliance is already substantial, the proportion varies by funder.

Research areas

Existing mandates in research areas well-funded by Plan S organisations have led to relatively high OA compliance. Other research areas, such as Social Sciences, receive relatively less Plan S funding and have lower compliance. Research areas significantly challenged by Plan S are those which currently demonstrate low OA compliance plus relatively more Plan S funded papers, such as Mathematics. Journals that are currently Plan S compliant are not evenly distributed, either across or within research areas.

Citation frequency

On 2017 citation counts, Plan S funded papers are cited more frequently on average than other papers, and this is true in all research areas.

Countries

Under Plan S, some European countries would publish more than 40% of their output as OA. This could reach 50% where the national funder is also a Plan S supporter. About 19% of European

international collaborative papers are supported by Plan S funders and therefore involve non-Plan S researchers. The USA is (in absolute terms) the second largest producer of papers that acknowledge Plan S funding and a high proportion of some institutions' output is Plan S supported. But the USA government has yet to endorse the plan.

Publishers

Across the landscape of publisher data, it is possible to typecast and populate a number of scenarios among the 200 larger houses (which collectively publish 95% of papers acknowledging a Plan S funder). There are those: not heavily affected; affected a little; a few (including some big houses) affected significantly; and OA-adopters who are well-positioned. Smaller houses, including some learned societies, are diverse and less readily categorised.

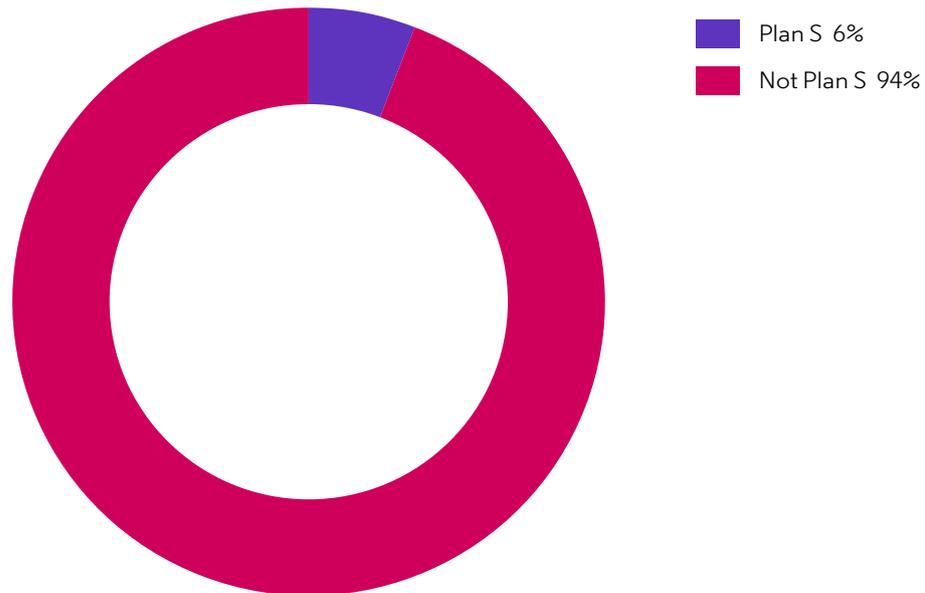
Journals

Plan S funded outputs make up less than 7% of global papers but they are well cited, published in high impact journals and, often, in journals from major publishing houses. They will influence the publishing landscape. Some 90,000 Plan S papers published as part of Hybrid or Subscription journals will need to be 'rehoused' if the journals do not change to fully OA. There are few Hybrid journals with a medium to high percentage of OA that might readily change. This implies challenging business decisions.

Some leading multidisciplinary journals contain as much as one-third Plan S content but are not Plan S compliant. Learned society journals have a central communication role in their research field but are not always OA. The relocation of content to OA titles would represent a 29% overall movement in the volume of well-cited papers to existing compliant venues, could be disruptive in some subjects, and suitable compliant venues are not always available.

Resources

The cost of publishing will shift, *ex post*, from the reader or their library, typically via a subscription charge, to an *ex ante* obligation on the author or their institutional proxy to pay via an APC. This would require a redirection of around €150 million. Meeting these costs will fall on research funders. It is not evident whether marginal resources are available to support all affected authors.



The share of papers indexed in *Web of Science* that contain an acknowledgment to one or more research funding agencies signed up to Plan S at December 2018. Plan S funders account for about 6% of papers indexed on the *Web of Science*. They are concentrated in around 10,000 of the 20,000 journals indexed.

Papers funded by Plan S organisations

Open Access (OA) is expected to enable and accelerate research and discovery. Some research funders have already endorsed an EU proposal (Plan S) to widen OA. The research they support led to circa 6.4% of 2017 papers indexed in *Web of Science*; the EU funded about half of this. Although OA compliance is already substantial, the proportion varies by funder.

"Open access" (OA) to research literature, as an enabling and accelerating factor for better outcomes, is a long-held ambition formalised in the early 2000s through the Budapest OA Initiative (2002), the Bethesda Statement on OA Publishing (June 2003) and the Berlin Declaration

on OA in the Sciences and Humanities (October 2003). OA has spread rapidly and now constitutes about one-fifth of research output indexed in *Web of Science*. Plan S is a proposal to increase the spread of OA papers produced through publicly-funded academic research. It was launched by Science Europe on 4 September 2018 and is an initiative of "cOAlition S": a consortium of the European Research Council and national research agencies and funders, initially in Europe and then more widely. Plan S requires researchers who benefit from state-funded projects and institutions to publish in open repositories or in journals where all papers are publicly accessible. Papers are usually made accessible by Article Processing Charges (APCs) to the author, whereas conventional access is by subscription charges to the reader, or to their institution's library.

Paper, in this report, is used to include scholarly journal articles and reviews; it excludes conference proceedings and other papers. **Open Access (OA)** refers to scholarly research papers made available online and free at point of readership, usually using a Creative Commons license to promote reuse. **Gold OA** is content made freely available on publication frequently including an article publication

charge (APCs) levied by the journal.

Hybrid, in the OA sense, refers to a journal that publishes some Gold OA papers and also charges a subscription for access to the full non-Gold journal content.

Green OA is where an author self-archives a copy of a journal paper in a freely accessible institutional or specialist online archive (repository) or on a website.

Plan S has stimulated many discussions and consultations and its likely implementation is evolving in response. As background information for this, we draw on data and metadata in *Web of Science* index to analyse the pattern of Plan S funded papers with respect to publishers, subject groups and other stakeholders in scholarly communication. Data sources and methods are described in an Annex.

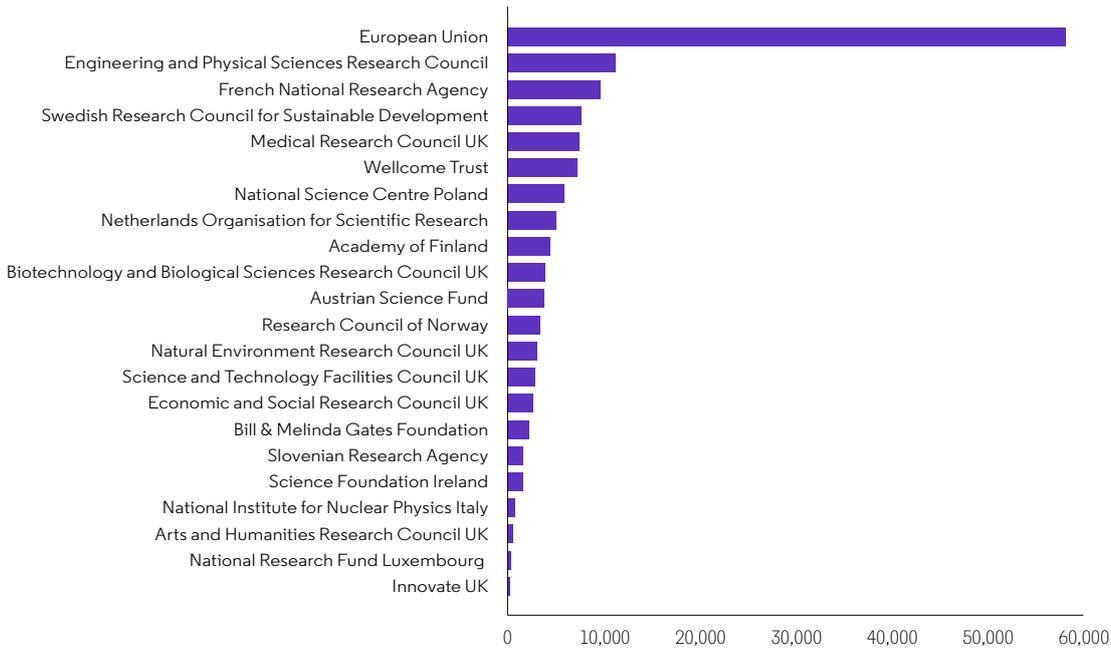
Plan S principles differ from existing OA policies and mandates: for example, Gold OA papers in a Hybrid journal may only be considered 'compliant' under specific circumstances; other exceptions may include circumstances where a paper is Green OA. For the purposes of this report, we assume that publishing in a journal listed in the Directory of Open Access Journals (DOAJ-listed) will be the main route to Plan S compliance. Such details remain to be worked through and the precise pathway of Plan S will likely change further. Some journals may convert to fully OA; additional funders may join Plan S; and other routes to compliance may appear.

We outline only the more obvious consequences. Plan S takes effect at journal level. Our analysis is mostly about papers, whether they are Plan S funded and whether they are OA. We discuss generic effects at journal level, but we have explicitly avoided carrying the analysis to specific titles.

As of December 2018, 20 funders were signed up to Plan S. The volume of 2017 papers acknowledging their funding varies across two orders of magnitude, from the EU with over 58,000 papers to the UK based Arts & Humanities Research Council with around 600 papers (Figure 1).

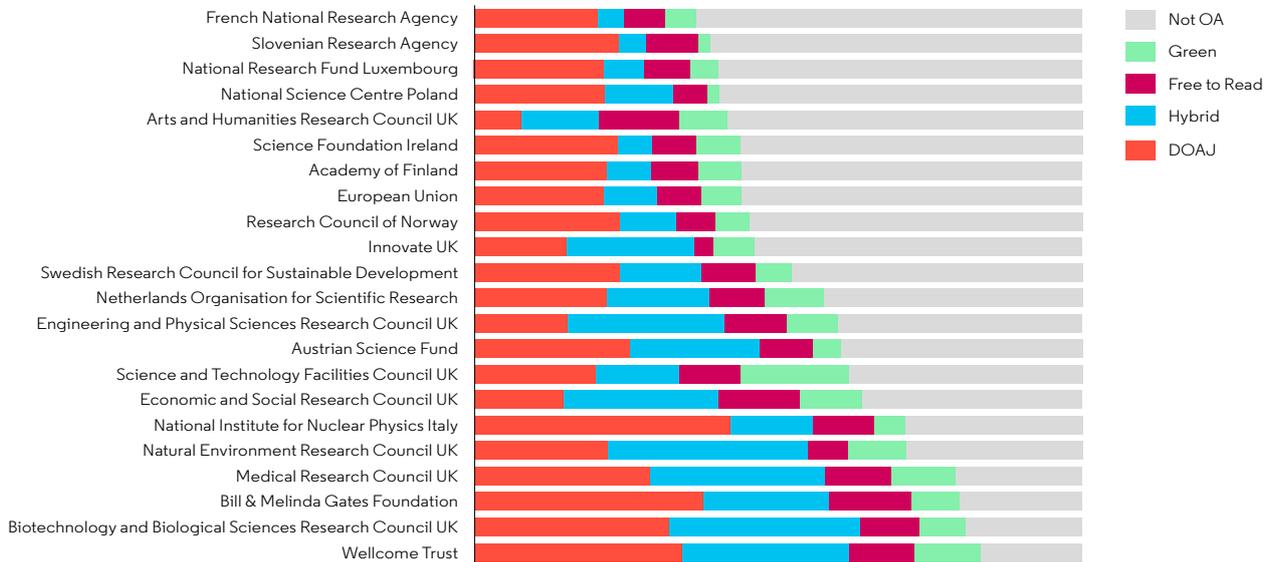
The use of OA by authors supported by Plan S funders is far from uniform (Figure 2). Some national figures may hide significant agency (and subject) diversity. The Wellcome Trust and the Bill & Melinda Gates Foundation have strong existing OA mandates and Gold OA uptake of 60%. National funders such as the National Science Centre of Poland, Slovenian Research Agency and French Research Agency have OA uptake at around half of these levels. Granular diversity can be seen among subject-based Research Councils supported from the UKRI Science Budget: the biomedical BBSRC and MRC have fairly high levels of Gold OA uptake but in social sciences (ESRC) and humanities (AHRC) Gold OA coverage is lower.

Figure 1.



Count of papers published in 2017 and indexed in *Web of Science* that acknowledge one or more funding organisations that have indicated support for Plan S.

Figure 2.



The proportions of papers published in 2017 that acknowledge one or more funding organisations that have indicated support for Plan S grouped by Open Access status.

How does Plan S affect research areas?

The papers funded by Plan S that are not currently published in Gold DOAJ-listed journals might be described as ‘papers at risk’.

Existing mandates in research areas well-funded by Plan S organisations have led to relatively high OA compliance. Other research areas, such as Social Sciences, receive relatively less Plan S funding and have lower compliance. Research areas with low current OA compliance and relatively more Plan S funded papers, such as Mathematics, are significantly challenged by Plan S. The availability of journals that are currently Plan S compliant is not evenly distributed, either across or within research areas.

Data can be disaggregated by main research areas, using the 22 broad categories established in the Essential Science Indicators (ESI). These are science-based, covering the Science and Social Science Citation Indexes, so an Arts & Humanities category was added to include journals indexed only in the Arts & Humanities Citation Index. The ESI categories are primarily allocated at the journal level. The exception is for multidisciplinary journals such as *Nature* or *PLOS One* where paper-level classification is applied, using the references cited in each paper to associate them with a subject category.

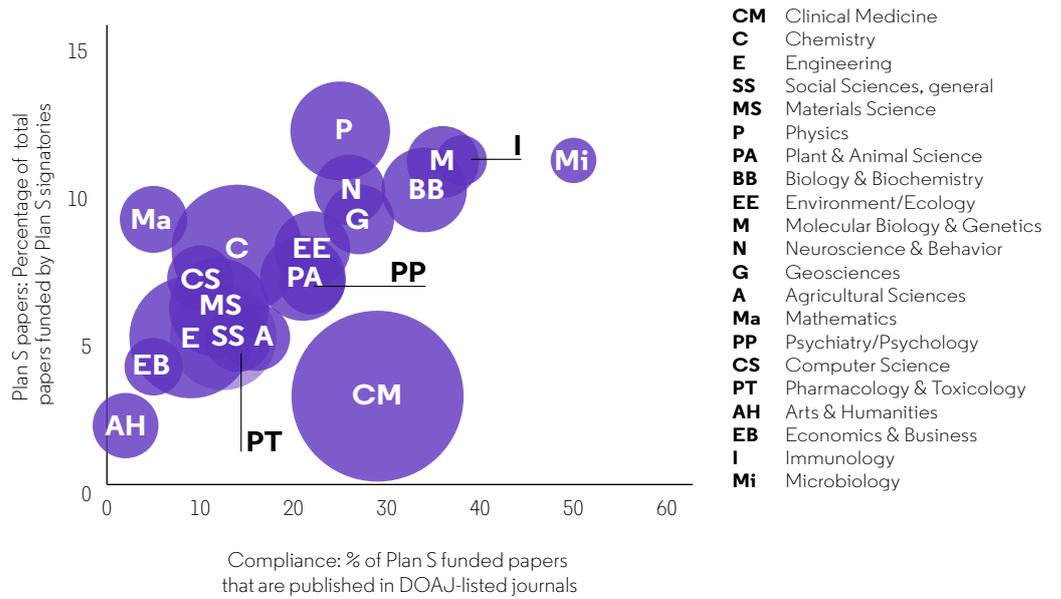
Around 3,000 papers published in 2017 (0.2% of all indexed papers) could not be assigned to a specific ESI category: these are excluded from further analysis in this section. Fewer than 2% of the papers indexed in the Emerging Sources Citation Index (ESCI) were by authors who acknowledged Plan S funding. These have also been excluded from this part of the analysis, because ESCI journals are not assigned to ESI categories and Plan S coverage was small.

Arts & Humanities has both the lowest proportion of papers acknowledging Plan S funders with 2.4% and the lowest share of Plan S funded papers in DOAJ-listed journals. Microbiology is at the other extreme. More than 11% of Microbiology papers acknowledge one or more Plan S funding agencies and more than 50% of the funded papers are published in DOAJ-listed journals. The other outlier is Space Science, where 26% of papers are funded by Plan S but less than 1% are published in DOAJ-listed journals.

There is a broad association between a greater rate of Plan S funding and a greater likelihood of publication in a DOAJ-listed journal. Clinical Medicine is a major outlier from this pattern, with a high rate of OA publication but a low likelihood of Plan S funding. (Figure 3)

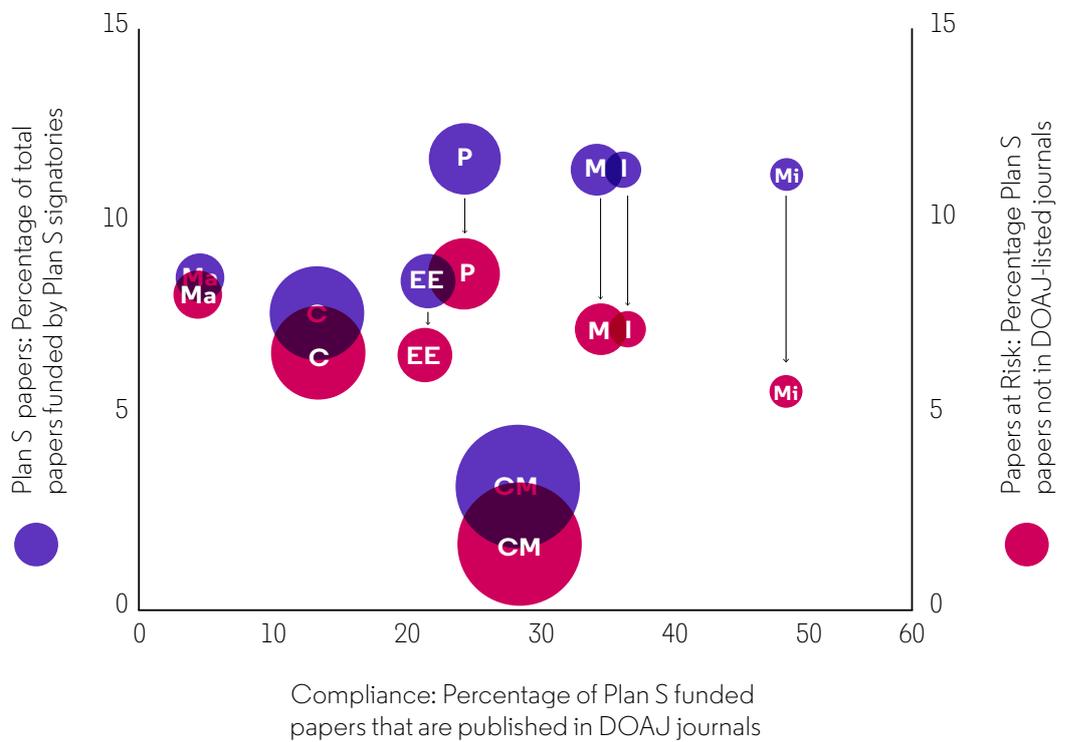
The papers funded by Plan S that are not currently published in DOAJ-listed journals might be described as ‘papers at risk’. An analysis of the balance of such papers by research area suggests that areas like Mathematics and Chemistry may find Plan S particularly challenging. This is because a relatively large share of papers in these areas acknowledge Plan S funders, but a relatively small percentage are currently published in DOAJ-listed journals: there is little difference between the count of Plan S funded papers and ‘papers at risk’. By contrast, research areas like Immunology and Molecular Biology & Genetics have much greater current compliance. The share of papers funded by Plan S that are not in compliant venues is similar to Chemistry but they have many other papers that are already in DOAJ-listed journals. This implies, in these Life Science research areas, both that suitable venues exist and that they are widely used by Plan S funded researchers. By contrast, this appears not to be the case for Mathematics or Space Science. (Figure 4)

Figure 3.



Analysis by main research area of the percentages of papers acknowledging Plan S funding and the percentage of those funded papers that are published in DOAJ-listed journals. Space Science is outside the plot with 26% funding and <1% compliance. Each bubble is scaled to the number of papers.

Figure 4.



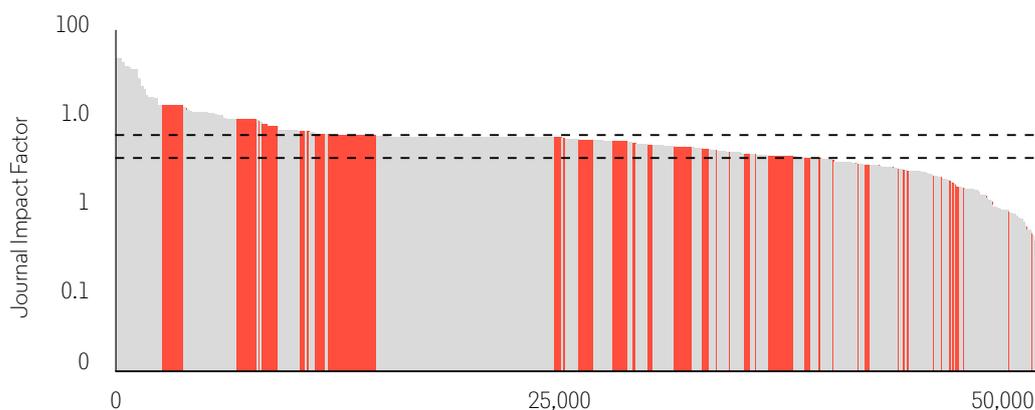
Analysis by select research areas of the percentages of papers that are 'at risk' under Plan S, because they are Plan S funded but not in a journal that is Plan S compliant. Life Science areas have many Plan S papers but a relatively high level of current compliance so are less 'at risk' than Mathematics where few Plan S funded papers are in DOAJ-listed journals. Each bubble is scaled to the number of papers.

There is evident variation in the availability and use of DOAJ-listed journals in different research areas. We can analyse the distribution of Plan S funded papers across journals to assess the association with journal characteristics. One such characteristic, which allows us to present the data in a simple, grouped and structured way, although it should not be taken to imply any information about the quality of the individual papers, is the *Journal Impact Factor (JIF)*.¹ In Figures 5 and 6, 2017 papers are ranked by the *JIF* of the journal in which they were

published. Papers in a DOAJ-listed journal are highlighted in red against a grey background for all other papers.

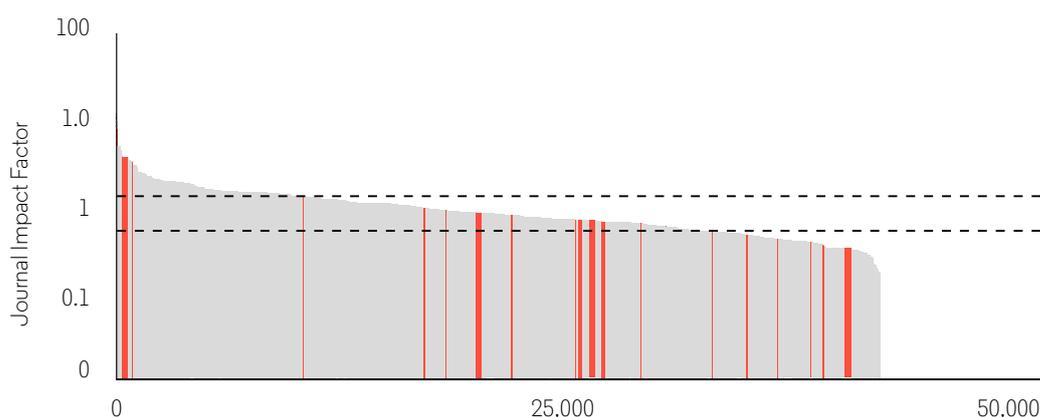
Molecular Biology & Genetics (Figure 5) has many DOAJ-listed journals. These tend to be substantial in volume (i.e. the relevant block is fairly broad within the distribution) and are distributed across the range of *JIF* values. Within Mathematics (Figure 6) there is only a limited pool of DOAJ-listed journals and these account for only a relatively small proportion of the published papers.

Figure 5.



Molecular Biology & Genetics: 2017 papers ranked by descending *JIF*. DOAJ-listed journals shown in red. There are about 52,000 papers in this ESI category published in journals with a *JIF*, of which 35% are in DOAJ-listed journals spread across the *JIF* range. About 6,200 papers acknowledge a Plan S funder. Upper and lower *JIF* quartiles are shown with a dotted grey line.

Figure 6.



Mathematics: 2017 papers ranked by descending *JIF*. DOAJ-listed journals shown in red. There are 43,000 papers in this ESI category published in journals with *JIF* of which 8% are in DOAJ-listed journals. About 4,100 papers acknowledge a Plan S funder. Upper and lower *JIF* quartiles are shown with a dotted grey line.

1. *JIF* is defined as the ratio of citations in one year to content published in the journal in the prior two years to the count of scholarly works published in those two years.

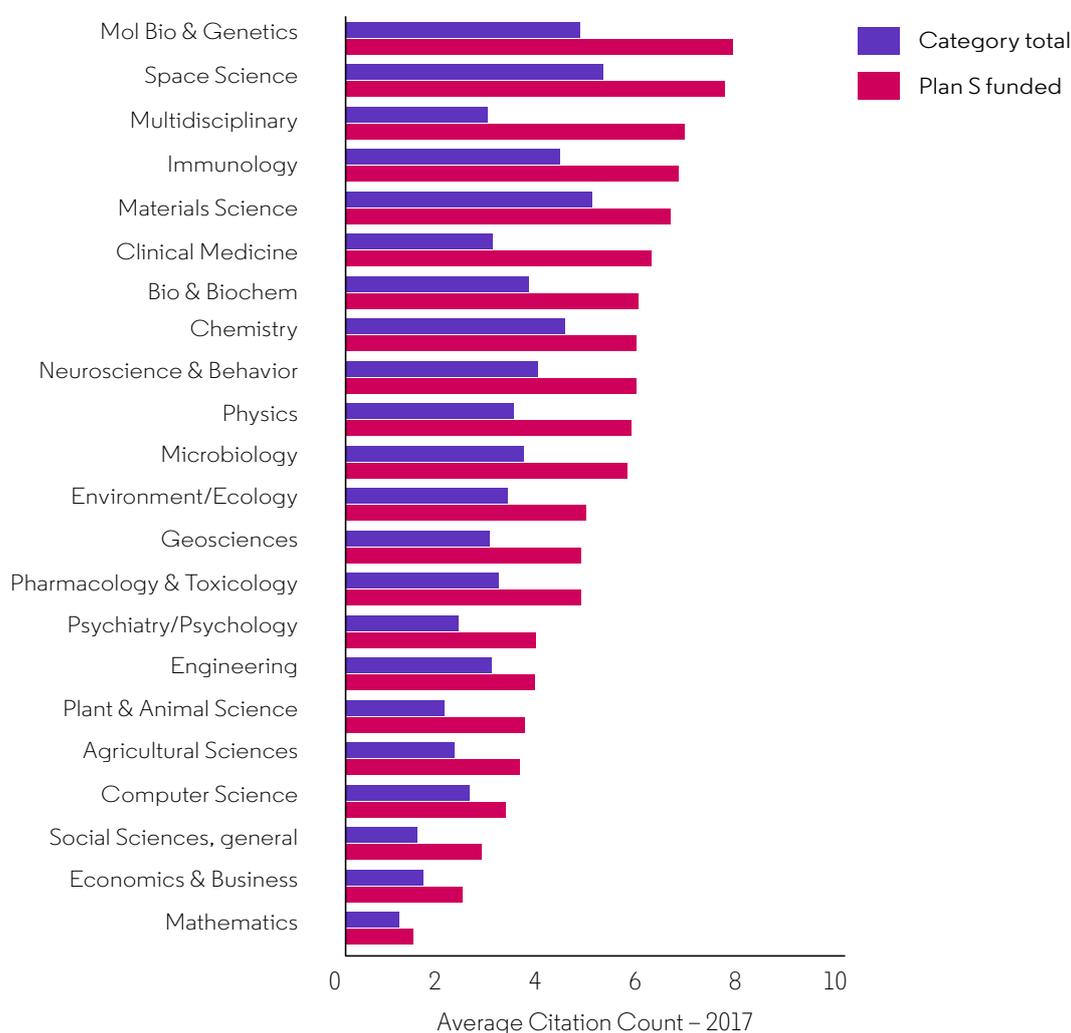
How frequently are Plan S papers cited?

On 2017 citation counts, Plan S funded papers are cited more frequently on average than other papers, and this is true in all research areas.

A differential distribution across journals could be associated with other differences; papers published in 2017 have had little time to be cited and those published late in the year will likely be cited less often

than those published early in the year. Nonetheless, the total batch of papers in a broad ESI category represents a reasonably large sample for indicative if not for statistical purposes. Comparing the average citation counts of Plan S funded papers within each category with the overall population we can see that the average Plan S funded paper is cited more frequently than the global benchmark. (Figure 7)

Figure 7.



Average citation counts for papers published in 2017, grouped by ESI research categories, comparing those funded by Plan S agencies with overall *Web of Science* content.

How does Plan S affect countries and regions?

The effect of Plan S elsewhere in Europe is much smaller, but it still could increase the percentage of OA papers by more than 10%.

Under Plan S, some European countries would publish more than 40% of their output as OA. This could reach 50% where the national funder is also a Plan S supporter. About 19% of European international collaborative papers are supported by Plan S funders and therefore involve non-Plan S researchers. The USA is (in absolute terms) the second largest producer of papers that acknowledge Plan S funding and a high proportion of some institutions' output is Plan S supported. But the USA government has yet to endorse the plan.

There is significant variation in population size, GDP and research investment across countries so direct comparisons are not always informative. For each country, we tallied the numbers of papers that were or were not in journals in the DOAJ list and the share that did or did not acknowledge a Plan S funder. Then, to enable equitable comparisons for reporting purposes, countries were allocated to one of three functional groups.

Some European countries have a national funder that has already endorsed Plan S (Figure 8). Such funders in the UK are acknowledged in 30,000 'at risk' papers that are not currently published in a DOAJ-listed journal. In Sweden, Finland, Slovenia and Luxembourg the percentage of 'at risk'

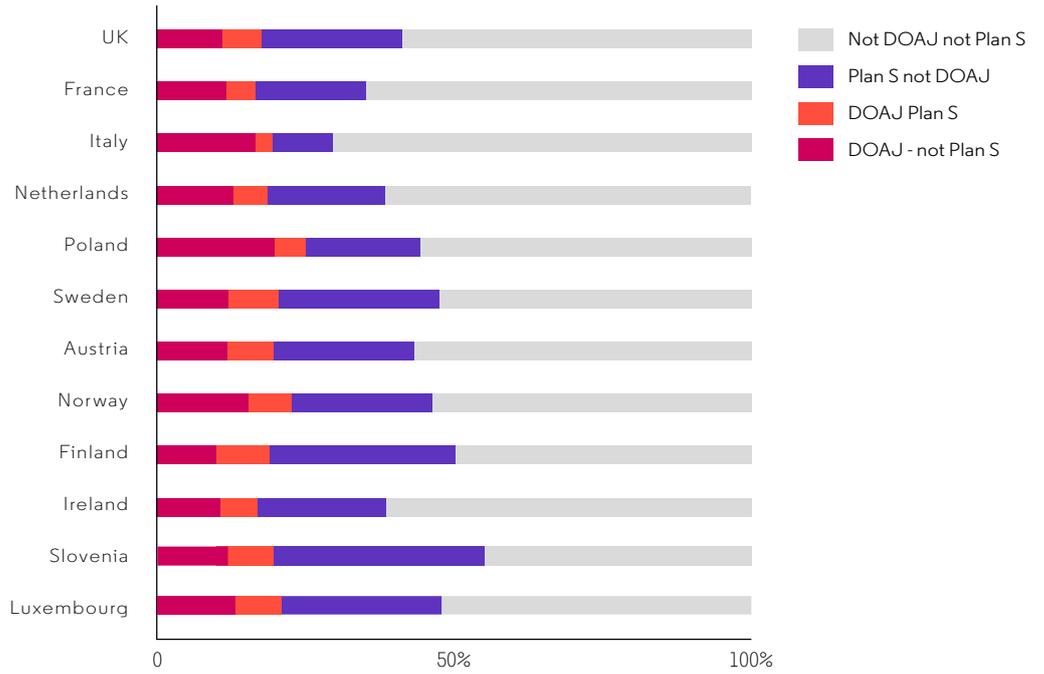
papers is over 25%. If these authors were to comply with Plan S then there would be an increase of papers in DOAJ-listed journals in these countries to over 40%.

The effect of Plan S elsewhere in Europe is much smaller, but it still could increase the percentage of OA papers by more than 10%. (Figure 9)

In 2017, approximately 215,000 papers indexed in *Web of Science* were the product of collaboration between a European country and the rest of the world. Of these papers, 40,000 (19%) acknowledged support from a Plan S funder. Europe's most prolific collaborative partner is the United States - 80,000 papers co-authored between European and American researchers and 20,000 (25%) of these listed a Plan S funder. Thus, half of all Plan S acknowledged collaborative research implicates co-authorship with researchers in the United States. (Figure 10)

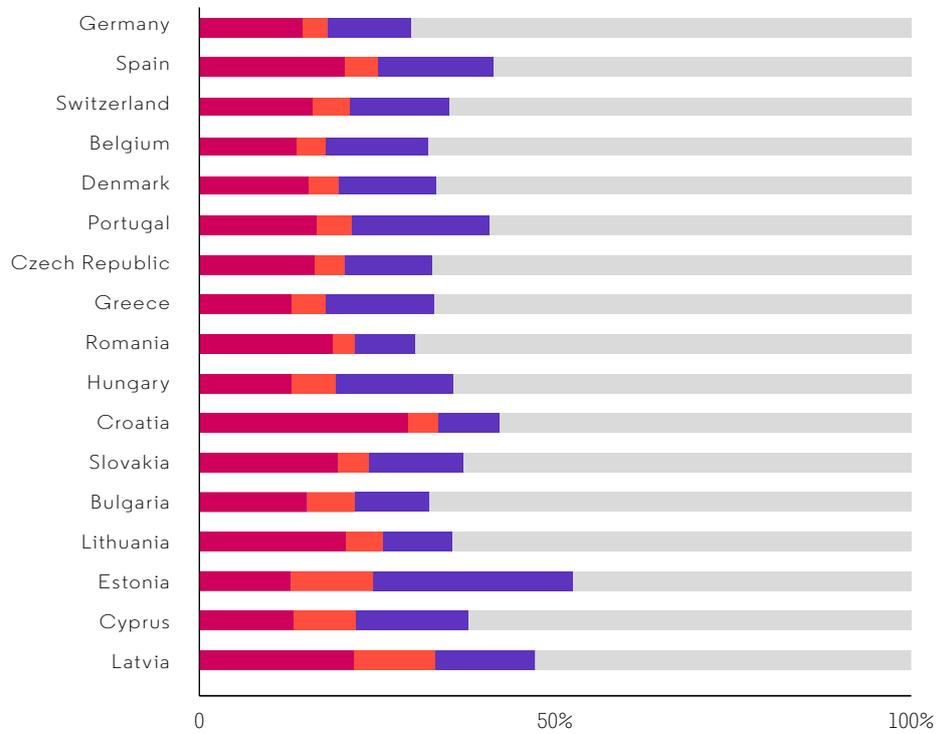
In absolute terms, the papers with a United States co-author make the United States the 2nd largest producer of Plan S funded work after the United Kingdom. There are several American institutions, including MIT and Caltech, that have over 15% of papers that list Plan S funding, which is primarily driven by their high levels of international collaboration.

Figure 8.



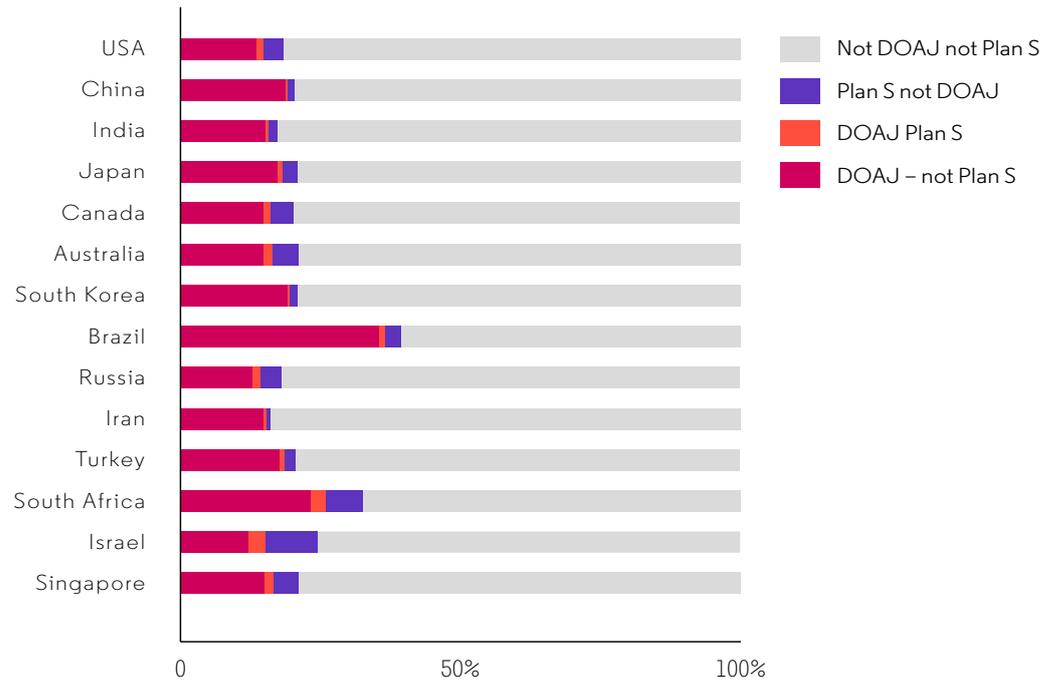
The balance of OA papers and research funding in European countries in which a national funder has endorsed the principles of Plan S, ranked by volume of output.

Figure 9.



The balance of OA papers and research funding in European countries that had not endorsed Plan S by December 2018, ranked by volume of output.

Figure 10.



The balance of OA papers and research funding in selected countries and regions outside Europe, ranked by volume output.

How does Plan S affect publishers?

Across the landscape of publisher data, it is possible to typecast and populate a number of scenarios among the 200 larger houses (which collectively publish 95% of papers acknowledging a Plan S funder). There are those not heavily affected; affected a little; a few (including some big houses) affected significantly; and OA-adopters who are well-positioned. Smaller houses, including some learned societies, are diverse and less readily categorised.

To analyse the spread of Plan S funded papers across journals issued by different publishers, the various imprints were grouped together under their parent: for example, Routledge and Taylor & Francis appear as parts of Taylor & Francis. Following this aggregation, there are 4,900 publishers in *Web of Science* that have one or more journals in the data used for analysis. There is significant variance in scale with the largest 20% of publishers accounting for more than 90% of papers. More than 3,500 publishers had no Plan S papers and a further 550 published only one paper acknowledging Plan S funding.

Analysis focused on the largest 200 publishers: each published more than 420 papers in 2017, which accounts for more than 85% of the overall count of papers and includes more than 95% of papers that acknowledged Plan S funders. Among the 200 largest publishers, about one-quarter have less than six Plan S funded papers and none have more than 30% of their papers Plan S funded.

The largest 200 publishers could be grouped by considering the percentage of Plan S funded articles and the volume that is already published in DOAJ-listed journals. It is possible to distinguish six, somewhat arbitrary but usefully indicative, groups. This grouping is illustrated in Figure 11.

The groups represent a range of 'scenarios' (situations and challenges) that publishers will encounter in responding to a requirement for Plan S compliance. Table 3 summarises a spread of relevant parameters, in terms of volume and current compliance. Group (a) contains mostly regional publishers that have less than 1.5% of their papers funded by Plan S; (b) is those publishers that are already >35% compliant, including those with a large number of DOAJ-listed journals that host Plan S content; (c) are publishers that have good compliance, but also a significant volume of 'at risk' papers that are Plan S funded but non-compliant; (d) are publishers with a limited amount of Plan S funded work, primarily Social Science or Humanities focused.

Groups (e) and (f) contain those publishers that have a large proportion of papers 'at risk' and it is in these groups that a need for greater adaption may be implied. For some such publishers, a majority of Plan S manuscripts are concentrated in a small number of journals. For example, in the area of Space Sciences we identified one journal which accounts for nearly 95% of non-compliant papers for its publisher.

Table 1.

Publisher size, based on papers indexed in <i>Web of Science</i>				
All papers in 2017	Publisher count	% of publishers	Paper count	% of all papers
0-99	4,000	83%	140,000	7.4%
100-999	750	15%	180,000	10%
1,000-9,999	80	1.6%	220,000	12%
10,000-99,999	16	0.3%	425,000	22%
>100,000	4	0.1%	915,000	49%

(Numbers rounded for reporting purposes: total differs between tables)

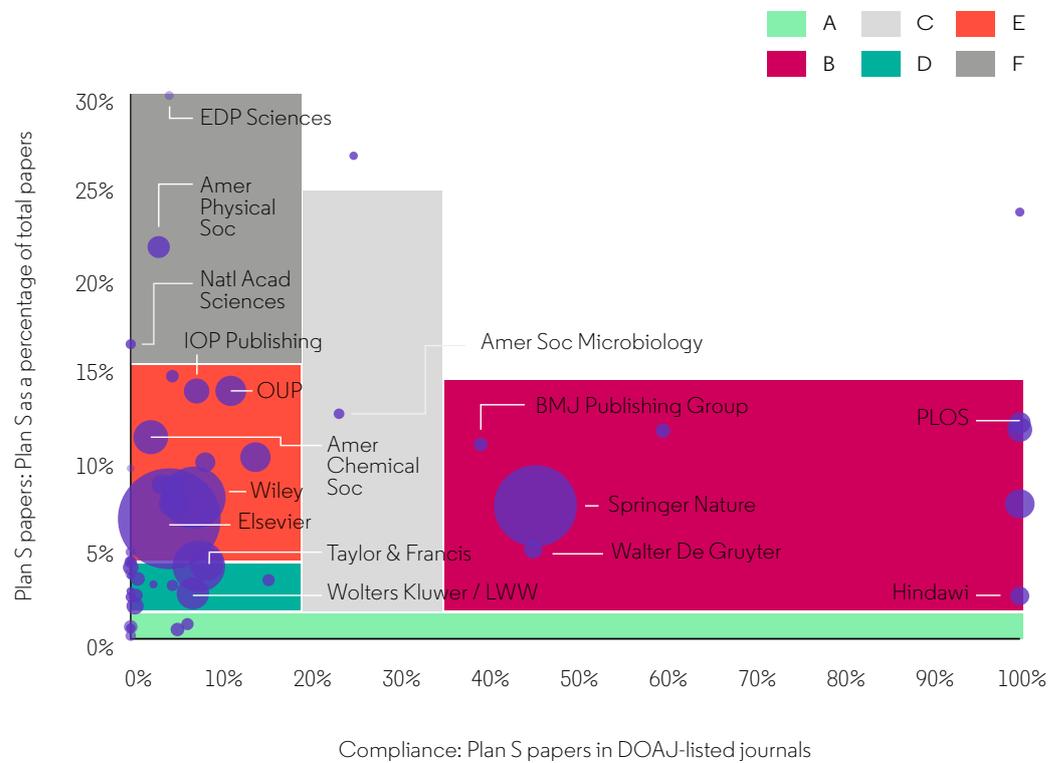
Table 2.

Papers acknowledging Plan S funding		
Papers funded by Plan S	Publisher count	Paper count
0	3,600	175,000
1	550	35,000
2-5	450	31,000
6-10	120	25,000
>10	210	1,500,000

Table 3.

Characteristics of the publisher groups illustrated in Figure 11							
Group	Criteria	Number of publishers	Total papers	Total Plan S papers	Plan S non-compliant papers	Plan S papers: Percentage of total papers funded by Plan S signatories	Compliance: Percentage of Plan S funded papers that are published in DOAJ journals
a.	1.5% or less under Plan S	74	83,000	430	390	1%	11%
b.	At least 35% compliance	25	393,000	30,000	11,500	8%	62%
c.	20% to 35% compliance	6	13,000	2,500	1,800	18%	25%
d.	Up to 4% Plan S	32	256,000	8,750	8,200	3%	7%
e.	4% to 15% Plan S	53	830,000	65,000	61,000	8%	6%
f.	At least 15% Plan S	10	32,000	6,600	6,500	21%	3%

Figure 11.



Comparison for the 50 largest publishing houses of Plan S papers (as a share of total papers) with the percentage of those papers published in DOAJ-listed journals. Each bubble represents one publisher, scaled by volume of papers.

What could change under Plan S?

Plan S funded outputs make up less than 7% of global papers but they are well cited, published in high impact journals and, often, in journals from major publishing houses. They will influence the publishing landscape. Some 90,000 Plan S papers published as a part of Hybrid OA or Subscription journals will need to be 'reboxed' if the journals do not change to fully OA. There are few Hybrid journals with a medium to high percentage of OA that might readily change. This implies challenging business decisions.

Some leading multidisciplinary journals contain as much as one-third Plan S content but are not Plan S compliant. Learned society journals have a central communication role in their research field

but are not always OA. The relocation of content to OA titles would represent a 29% overall movement in the volume of well-cited papers to existing compliant venues, could be disruptive in some subjects, and suitable compliant venues are not always available (Figure 12c).

As noted, this report focuses on information about the significance of Plan S funded papers in the publishing landscape. It is not intended as a deconstruction of possible scenarios. Some likely effects stand out, however, and are summarised here.

In 2017, Plan S funders were acknowledged in more than 120,000 papers indexed in *Web of Science*, accounting for about 6.4% of papers across more than 10,000 journals. However, an analysis restricted to journals with six or more papers acknowledging a Plan S funder would cover just 3,700 journals. 3,200 of these are not presently listed by DOAJ and are therefore not Plan S compliant.

Figure 12 a.

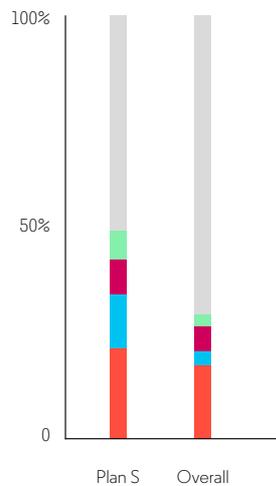


Figure 12 b.

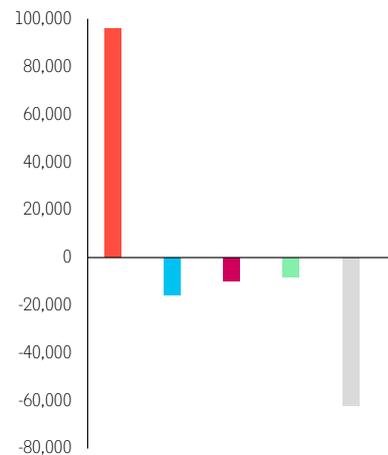


Figure 12 c.

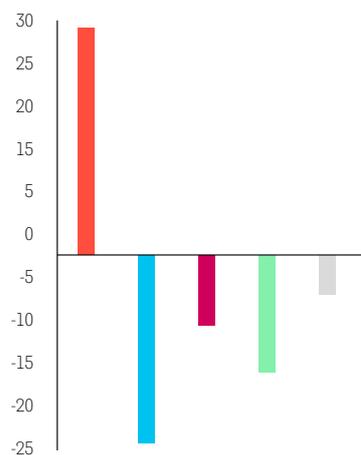
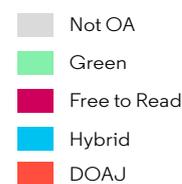


Figure 12 a. Current OA spread

Figure 12 b. Change in OA types driven by Plan S (absolute shift)

Figure 12 c. Change in OA types driven by Plan S (relative shift percentage)



Many large publishers offer Hybrid OA options across a range of journals, but the use of OA by authors has been uneven. While 20% of around 20,000 journals indexed in the *Web of Science Core Collection* published 100% of their papers as Gold OA, 50% of journals published no OA papers in 2017. Of the remaining journals, most published fewer than 5% of their papers as Hybrid OA with relatively small numbers between 20% and 99% OA level. (Table 4)

Table 4.

Journals grouped by the percentage of Open Access (OA) papers.

OA papers % in journal	Count of journals	Count of papers		Share of total papers	
		Total	Plan S	OA only	OA or Plan S
No OA papers	10,600	573,930	17,150	0%	3%
0-5%	2,600	617,000	44,000	2%	8%
5-20%	2,100	265,000	26,000	10%	18%
20-40%	300	32,000	4,000	26%	37%
40-60%	80	8,000	350	48%	55%
60-80%	70	4,000	150	69%	74%
80-100%	230	26,000	700	92%	94%
Fully OA	4,000	354,000	25,433	100%	100%

It is difficult to model scenarios where journals gather an increasing OA share and then ‘flip’ to fully Gold OA because the data indicate that relatively few journals publish an equal mix of OA papers and non-OA papers.

Papers authored by Plan S funded researchers are not evenly distributed across the publishing landscape:

- They appear more often in higher *JIF* journals that are frequently not DOAJ-listed.
- The distribution and availability of compliant journals varies markedly between disciplines. (Figures 5 and 6)

- Plan S funded papers appear to be of above-average significance to other researchers because they are cited relatively frequently. (Figure 7)

Some widely respected multidisciplinary journals (*Nature*, *Science* and *Proceedings of National Academy of Sciences*) are over-represented, if one compares the relative volume of papers acknowledging Plan S funding with the global share (6.4%) but are not Plan S compliant. (Table 5)

Table 5.

For three leading cross-disciplinary journals, the number and percentage of papers published in 2017 that acknowledged a Plan S funder.

Journal	Total papers	Plan S papers	Plan S percentage
Nature	836	290	35%
Science	769	235	31%
Proc US National Academy of Sciences	3,261	639	20%

Plan S compliance implies an effect of around 95,000 additional papers would need to be published in DOAJ-listed journals every year, which would be a 6% decrease in non-OA papers. Two widely discussed responses are that: existing journals change their content to become fully OA; or Plan S papers are redirected to journals that are DOAJ-listed. (Figure 12)

We could assume that no journal changes its status and that all papers that acknowledge a Plan S funder move to a DOAJ-listed output. Such a shift would represent a 29% overall increase in the volume of well-cited research published in the existing compliant venues and an equivalent decrease in such research in non-compliant venues.

This shift is only possible where authors have the opportunity to submit to a fully Gold OA journal appropriate for their research, which is not universally the case. There are research areas, such as Mathematics, where current OA journal coverage is limited (Figure 6). The few existing compliant journals will face a substantial challenge to scale up to manage the quantity of submissions and papers within the current timeframes assuming that authors are willing to publish in them.

It is unlikely that movements would be balanced by subject or time. Some existing fully Gold OA venues may well find themselves inundated with submissions. Others may see little change. It is likely that new venues will appear. In some subjects there will either be a significant lag as the landscape shifts to accommodate change or, in extreme cases, there could be a temporary dearth of compliant publication venues.

Responsibility for costs

The cost of publishing will shift, ex post, from the reader or their library, typically via a subscription charge, to an ex ante obligation on the author or their institutional proxy to pay via an APC. This would require a redirection of around €150 million. Meeting these costs will fall on research funders. It is not evident whether marginal resources are available to support all affected authors.

Plan S implies a change in the responsibility for publishing costs. As noted at the outset, most current journals are paid for by, and accessible only to, subscribers. Many Gold OA journals require payment via an APC, so the paper can be freely accessible to all. Authors, or their institutional proxies, must therefore find the resources at the point of publication instead of readers at the point of use.

The charges made by publishers for an OA paper vary, but we can base a representative analysis using £2,401 as the average APC in a Hybrid journal and £1,943 as the average DOAJ-listed APC (as reported by the Wellcome Trust). Based on these figures current Plan S OA outputs are linked to £86 million of OA publishing support through APCs. If all 120,000 2017 Plan S funded papers were published in DOAJ-listed journals this would increase to £230 million, an increase in research funds committed to publication support of £144 million. However, if this shift to

100% Gold OA were to happen under the current DOAJ-listed/Hybrid ratio that cost would rise even further. There are other factors that would drive the total costs within the system.

The change in the funding of academic papers will happen whether authors redirect papers to Gold OA journals or the existing journals change their business model, so research-producing organisations (such as universities, institutions, corporations, and laboratories) will need to plan to distribute resources to researchers either directly or indirectly to enable them to maintain their current capacity to choose where to publish.

Funding at the point of accepting a publication may constrain those individuals, organisations and emerging research economies that do not have access to sufficient resources, irrespective of the quality of the work they submit for publication. There could also be an issue for those charities that support research, particularly in the health and medical sector. Many charities have research spend in the range from £1 million to £10 million, so a marked increase in costs for publication would be significant in Biomedical fields where publication rates are relatively high.

Tasks for a system in transition

It has been more than 15 years since the Budapest (2003), Berlin and Bethesda (2004) declarations were published. There has been a significant expansion in OA publishing and a more general awareness of and support for open research policies. There is also recognition that not all disciplines are ready for OA under current funding structures and journal availability.

Plan S was announced with a set of principles that implied very significant, even disruptive, change for some stakeholders. That led inevitably to positive and negative reactions, then dialogue and an invitation to comment, and then both shifts in Plan S narrative around routes to and the timing of implementation and shifts in stakeholder perceptions.

Commentary has been widespread and from diverse sources.

- The 300-member Association of Learned & Professional Society Publishers (ALPSP) raised concerns about Plan S' indicative pace of change compared to business planning and asked for clarity regarding transformative agreements, since these would have serious implications for large publishers over 'collection' contracts with clients and for small publishers with limited room for negotiation.
- An initial reaction from some publishers was to consider 'mirror' journals, where a new OA sister would share editorial process with an existing Hybrid or Subscription journal, but these are not likely to be considered compliant.²
- Researcher-led open letters attracted many signatories. Kamerlin et al³ highlighted concerns about the imposed choice of publishing venue, the cost of Gold OA and the lack of distinction between subject areas. Eisen's⁴ open letter strongly supported the right of funders to mandate specific OA options. Willighagen and Tennant⁵ believe that the focus on publishing models missed an opportunity for funders to focus on open science more widely.
- Institutions broadly agreed with Plan S's overall goals but had concerns over the indicative timeline. University College London (UCL)⁶ had queries on clarity regarding compliance and sought more engagement with universities as research-producing organisations. The University of Oulu⁷ highlighted compliance costs as a challenge. The European Federation of Academies of Sciences and Humanities⁸ focused on the IP issues which may be created by mandating CC-BY, along with the current lack of global signatories. The Global Young Academy⁹ expressed concerns that Plan S might lead to a two-tier system between those with funding and those without.
- The International Association of Scientific, Technical and Medical Publishers (STM), in a statement of February 2019, built on UCL's position and described key factors it suggested would drive global OA including flexibility in academic publication choices and commercial publishing models.
- New 'Read and Publish' deals, such as Wiley's recent agreement with Projekt DEAL, have been described as a compliant transformation by members of cOAlition S.¹⁰ For Wiley the effect of various deals already publicly signed would increase their compliance to 30%.

The likely path of change continues to evolve. There appear to be some nuances of policy among cOAlition S members, which may translate into different approaches by region, agency and - perhaps - discipline. There is also movement amongst publishers in creating imaginative deals, supportive of research, while drawing attention to constraints, necessarily safeguarding a heritage valued by their research communities. Among researchers, there is also a diversifying debate, with advocates pointing to OA benefits while the more cautious point to the benefits of an established publishing structure.

The data and analyses in this report are intended to provide material to scope parameters for these discussions. There are no dramatic conclusions, and the responsive approach of the stakeholders suggests that no drama need be expected, but some considerations suggested by the data should be borne in mind.

These include, but are not limited to:

- Some research areas have very few journals that are currently Plan S compliant (Figures 3-6). Without carefully paced transition to allow for the emergence of new titles, is there a risk of unusual constraints and disjunctions in publishing opportunities in affected subjects?

- The disparity of citation impact between Plan S funded outputs and others is likely to be a factor in the subsequent reshaping of the publishing landscape (Figure 7). Citations are not a defining metric of quality, but might the restructuring of the spread of well-cited papers have unplanned contingent consequences?
- Plan S funded papers include many authors who publish in leading subscription journals and in many currently Hybrid journals. Not all such authors are in countries endorsing Plan S. Some are G20 countries; many are in the Global South (Figure 10). How can the shift to Gold OA and associated APCs be managed equitably to protect the positions both of unfunded researchers in G20 economies and of a wider spread of authors in emergent research regions?
- The large publishers, with a diverse stable of titles, will be influential in discussions, (Tables 1 and 2, Figure 11) but there are many small publishers, including those linked to learned societies, who publish an important part of the Plan S funded output in serials central to their discipline. Will transition be more difficult for them and, if so, can this be managed effectively but flexibly?

Increased and more open access to research outcomes is a public good. If an accelerated shift towards this can be balanced with careful implementation and the retention of those features of the research publishing system that have been of such benefit to society and the economy over the last century then the debate and the effort will be amply repaid.

2. <https://www.coalition-s.org/implementation/>
3. <https://sites.google.com/view/plansopenletter/open-letter>
4. <http://michaeleisen.org/petition/>
5. <https://docs.google.com/forms/d/e/1FAIpQLSc4dWYFnGI-RoZlZYLnQ8tPyMANSeVruY35kBrMMzJyTGshag/viewform>
6. <http://blogs.ucl.ac.uk/open-access/files/2019/01/UCL-response.pdf>
7. <https://www oulu.fi/sites/default/files/186/Plan%20S%20final%20feedback.pdf>
8. https://www.allea.org/wp-content/uploads/2018/12/ALLEA_Response_PlanS.pdf
9. <https://globalyoungacademy.net/ec-in-person-meeting-2018/>
10. <https://www.projekt-deal.de/faq-wiley-contract/>

Annex – Data Sources

Publication records were drawn from *Web of Science Core Collection* (Science Citation Index Expanded, Social Science Citation Index, Arts & Humanities Citation Index and Emerging Sources Citation Index). These records were filtered for content published in 2017 and, from this annual tally, we selected documents classified as articles or reviews. Proceedings papers are not identified as a document type under the Plan S proposals. Articles and reviews are the primary forms of original scholarly output in journals and are collectively referred to in this report as papers.

Document records in *Web of Science* contain ‘acknowledgments’, which include funding sources. These are indexed and can be used to identify papers sponsored by Plan S funder organisations, by cross-reference to a manually curated list of funder variants. This enables broad capture of papers that would be affected by Plan S mandates. Some authors will have failed to identify Plan S funding and there will also be papers not included because of missing data or obscure name variants. The Plan S funded records analysed here therefore represent a minimum estimate of Plan S papers published and of those indexed in *Web of Science*.

Web of Science integrates data from Impactstory’s Unpaywall Database which is one of the widest sets of data on article level OA information. *Web of Science* augments this with a direct journal level feed from the Directory of Open Access

Journals. Unpaywall data are translated by *Web of Science* into a set of OA statuses. Two represent Gold OA: DOAJ Gold represents content published in journals listed in DOAJ; Gold Other represents content that is identified as having a Creative Commons license on the publisher platform but is not in a DOAJ-listed journal. Free to read is content that has been identified as freely available, but with no identified Creative Commons license. Because papers in *Web of Science* may be both Gold & Green Open Access, a single status is allocated to each paper to avoid duplicate counting. The following priority order is used: Gold DOAJ-listed; Gold other; Free to read; Green.

The data for this report were extracted from *Web of Science* on 10 January 2019.

To learn more, visit: webofsciencegroup.com
Follow us on Twitter: @webofscience #InstituteScilInfo

**Submission in response to the U.S. Office of Science and Technology Policy (OSTP)
Request for Information (RFI) regarding [Public Access to Peer-Reviewed Scholarly
Publications, Data and Code Resulting From Federally Funded Research](#)**

Filers

Melissa Day, PhD
Joshua Schnell, PhD
Anand Desai, PhD
Ann Beynon

Organizational Affiliation

Web of Science Group, Clarivate Analytics

Organizational Relevance

Clarivate Analytics™ is a global leader in providing trusted insights and analytics to accelerate the pace of innovation. The Web of Science Group at Clarivate Analytics includes the following products relevant to this RFI:

- **Web of Science:** a platform of 17 databases covering scientific and scholarly journals, conference proceedings, patents, websites, datasets, and chemical structures, compounds, and reactions. It has a unified structure that integrates all data and search terms together and therefore provides a level of comparability not found in other databases. One of these databases, Web of Science Core Collection, is widely acknowledged to be the world's leading source of citation and bibliometric data. Web of Science is used in the United States by over 100 government agencies, labs, or contractors and over 800 academic and corporate institutions. These products play an important role in the accessibility of peer-reviewed author manuscripts and data funded by the federal government. While the Web of Science platform is a contracted service and is not free, it is part of the workflow at these institutions to access journal articles and datasets. The Web of Science integrates an API called Unpaywall, which links users directly to free-to-read articles from both publisher websites and repositories. There are currently over 13.5 million records which link to an open access/free-to-read PDF.
- **Kopernio:** a free browser plug-in that helps researchers to easily and legally read the full text PDFs of scientific journal articles. This free service connects researchers to subscription content from their home institution, as well as open access publications. Over 250,000 researchers, librarians and academic professionals currently accelerate their research with Kopernio.

Perspectives

What current limitations exist to the effective communication of research outputs (publications, data, and code) and how might communications evolve to accelerate public access while advancing the quality of scientific research? What are the barriers to and opportunities for change?

- **Open access classification:** The US government should endorse a unified classification system for open/public access across all executive branch agencies, and endorse consistent repository standards, or propose its own requirements for each. Instead, Web of Science currently assigns open access classifications pulled from <https://unpaywall.org/sources> (including Directory of Open Access Journals Gold/Green/Bronze ratings and CrossRef classifications) to publications. Researchers and funders have already begun to use Web of Science and Kopernio to identify open access papers and/or establish compliance with open access initiatives. If the current open access standards are insufficient or incompatible with preferred US government open access standards, the community would be better served by using a different scale. Funding agencies should also ensure that the repositories in which they require their grantees to deposit full-text articles are covered by the Unpaywall API (<https://unpaywall.org/sources>) because a growing number of data providers are using this tool. Additionally, US researchers who coauthor with researchers receiving funding from a Plan S funder must comply with the mandates described by <https://www.coalition-s.org/>. Any rule changes in the US should take into account that researchers face complicated decisions about where to submit their articles based on the sometimes conflicting requirements of the authors' funders, as well as institutional requirements. Meanwhile, publishers are increasingly adjusting the business models across their journal portfolio to accommodate these changing funder mandates, creating an ever-changing publishing landscape for researchers to navigate.
- **Open access fees:** Funders must consider if and how to help researchers pay article processing charges (APCs) to publish in open access journals. Ideally, the increase in public access by removing barriers to *read* publications does not restrict publishing ability by increasing barriers to *publish* open access research.
- **Funding text:** Consistently formatted funding acknowledgement text across funder agencies would facilitate easier disambiguation of government funders, which leads to more obvious attribution and easier evaluation of public access compliance. There is currently little standardization between executive branch agencies that fund research regarding how researchers should acknowledge their federal funding in the body of the journal publication. Web of Science has developed lists of the variety of ways that funder names appear in funding acknowledgements and applies disambiguation where possible, but these lists are still subject to human error. Government funders could clarify their acknowledgement text phrases in grant Terms & Conditions and/or do a better job making standardized phrases for funding more visible. Additionally, new standardization in acknowledgement metadata (e.g. CrossRef is adding a funder field, and funders may receive GRID IDs or other persistent identifiers) presents new opportunities for government funders to ensure that they are building accurate profiles and engaging their researchers to use them.

- **Funding and grant information:** A unified format for research spending and final reports, with proper precautions for privacy and embargo, should be adhered to government-wide. There are currently several places (including MEDLINE, Federal and NIH RePORTER, and Foreign Aid Explorer) that report what grant money was spent on what activities, and many individual agency and grant websites have their own information. It would be easier to identify and quantify what was done if spending and the end products of that spending (including final reports, likely after embargo to protect unpublished research at the end of a grant) were centralized and consistently formatted.
- **Data citations:** US government funders should encourage the practice of citing datasets in a standardized way, ideally including a persistent identifier such as a Direct Object Identifier (DOI). Assigning DOIs is a growing but not yet standard academic practice that enables research data to be used and made visible regardless of whether it is associated with a journal publication. Citing data directly is an indicator of use and accessibility. To improve this practice, providing suggested data citation formats in each science.gov entry would be recommended, and/or making researchers aware that they should both cite research data directly and make their research data citable. Our organization supports the FORCE11 joint declaration on data citation (<https://www.force11.org/datacitationprinciples>), as well as the FAIR principles. Additional responses have been submitted separately in response to the OSTP “Request for Public Comment on Draft Desirable Characteristics of Repositories for Managing and Sharing Data Resulting From Federally Funded Research”.

How would American science leadership and American competitiveness benefit from immediate access to these resources? What are potential challenges and effective approaches for overcoming them? Analyses that weigh the trade-offs of different approaches and models, especially those that provide data, will be particularly helpful.

- **Analyze unintended consequences:** Providing immediate access to research outputs may speed up discovery, but there also are likely to be some unintended consequences for competitiveness and research integrity. One recommended step to more deeply understand the benefits and consequences would be to initiate a study, potentially through the National Academies, of immediate/embargoed access and how to implement a structure to bolster excellent, available science while limiting undesirable consequences. Potentially relevant here is analysis of the implications of Plan S; see attached for a copy of the 2019 Global Research Report on this subject from the Institute for Scientific Information at Clarivate Analytics. Furthermore, later in 2020 Clarivate Analytics intends to use publication data to analyze intended and unintended consequences of implementing public access to research output in the US.



MINERALOGICAL SOCIETY OF AMERICA

3635 Concorde Pkwy Ste 500 • Chantilly VA 20151-1125 • USA
Tel: 1 (703) 652-9950 • Fax: 1 (703) 652-9951 • Internet: www.minsocam.org

April 1, 2020

Dr. Lisa Nichols
Assistant Director for Academic Engagement
Office of Science and Technology Policy
1650 Pennsylvania Avenue, N.W.
Washington, DC 20504

Dear Dr. Nichols:

The Mineralogical Society of America (MSA) understands and supports increased access by the public to the results of peer-reviewed scholarly publications, data, and code that result from federally funded research, as described in the 2013 memorandum, Increasing Access to the Results of Federally Funded Scientific Research.

The Importance of Peer Review

MSA's position is that scientific professional societies that publish scientific journals and make scientific information available to the public in various formats and delivery modes have as their top priority to ensure the quality of scientific results and their analysis through rigorous peer review. Author surveys report that the reputation of the journal is the top factor in choosing where a scientist publishes his or her work. The scientific community must have the time to undertake rigorous peer review as part of the process of making information widely available. The *American Mineralogist*, MSA's scholarly monthly journal, maintains the highest quality of peer-reviewed publishing through a complex human infrastructure of authors, reviewers, editors, and professional staff. The review process ensures that the science is accurate, current, and a contribution to the field. Rushing this process, or worse, omitting it completely, opens the door to bad science.

MSA's Position on Open Access

MSA provides several options for authors who are required to publish open access articles. *American Mineralogist*, primarily a subscription-based publication, is a hybrid journal, with an option for authors to pay for open access. MSA also provides complete open access to *American Mineralogist* articles in press on its website. In addition, MSA is a founding partner of the fully open access geoscience community journal *Lithosphere*.

The transition from subscription-based to author-paid publishing is a fundamental shift that requires scientific professional societies to completely transform their financial and operating models. This is anticipated to require on the order of five to 10 years to complete.

Recommendations to OSTP

- Whether fully open access or hybrid, journals require article processing charges, or APC. Some countries have established agreements to provide those APC on behalf of their researchers. *The US should not require immediate open access without also providing the funding for APC for its researchers.*
- In addition, not all research results are complete during the period of federal research funding. *Any requirement on the part of the US that results be made available through open access should include funding for APC of past holders of federal research funds.*
- Much research is not federally-funded, but is valuable and deserves peer-reviewed publication. *No OSTP action should deprive the US public this avenue of vibrant and important research results. In the short term, the US should preserve subscription-based publications along with open access journals to enable publication and public access to research that is not federally funded.*
- MSA agrees that scientific data should be accessible. *Repositories must ensure the quality of these data with careful archiving of data and metadata. Both data from federally-funded research and from non-federally-funded research should be available, and Federal agencies should accept well-curated data from both sources.*

Sincerely,



Carol D. Frost, Ph.D.
President, Mineralogical Society of America
3635 Concorde Parkway, Suite 500
Chantilly, VA 20151-1110
frost@uwyo.edu



N83 W13410 Leon Road
Menomonee Falls, WI 53051
United States of America
www.socmucimm.org

January 27, 2020

President Donald J. Trump
The White House
1600 Pennsylvania Avenue NW
Washington, D.C. 20500

Dear President Trump,

We write today on behalf of the Board of the Society for Mucosal Immunology (SMI) and our members to express our strong concerns regarding a potential change in US federal policies regarding open-access publishing, which poses a direct and significant threat to scientific societies, such as the SMI, which support the advancement of scientific research and education.

Mucosal Immunology is the official journal of our society, having been created by us as part of our vision to develop this important area of science. Our members invest significant energy in ensuring high quality peer review and scrutiny of the science to be published in the journal. Currently, journals such as *Mucosal Immunology* allow scientists and researchers the option to choose how their submitted articles are published with the ability to choose either a traditional subscription model or open access model. Under the subscription model, the costs associated with publishing these peer-reviewed articles are borne by the subscribers, largely through institutional site-licenses, making the publication of research more open to those with restricted research funding, particularly scientists from low- and middle-income countries. Alternatively, scientists and researchers are able to choose to pay to have their submitted articles published by providing the funds up front for the peer-review and publication costs, which is then published open access for immediate access to the public, as may be required by their funders or institutions.

In *Mucosal Immunology* published articles are currently subject to a 12-month embargo period by the publisher, as well as with automatic deposition in PubMed Central for research funded by the US government, which ensures all articles are available publicly at no cost one year following publication. This holds true for those articles published for both the traditional subscription model, as well as those which are immediately published in the open access model.

Importantly, requiring immediate OA publication of all publicly funded research would substantially affect a large number of scholarly societies that rely on income from their respective publications to support their essential scientific education and training programs. For the SMI, this includes funds to subsidize membership for young investigators and those from low and middle income countries, convene major international scientific meetings for our field, provide travel scholarships to those meetings for young investigators, provide initiatives to develop the careers of our scientists and travel support for technique and scientific exchange between laboratories. To fund such activities without income from society publications is unfeasible, since it would require a dramatic increase in OA publication charges or society membership fees, which would overburden and discourage prospective authors from publishing their manuscripts with a society journal. This would also decrease society membership, especially by young scientists and trainees with limited funds, precisely the members who we need to be active society members in order to ensure the quality of future scientific research. Alternative mechanisms of funding grants from governments, academic institutions, or industry could help offset the loss of publishing income, however such funding mechanisms are currently non-existent.



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Until alternative funding programs are in place to support scholarly scientific societies, a requirement for immediate OA publication will have a significant negative impact on the quality of scientific research in the United States with effects on millions of researchers, scientists and medical professionals who rely on the multiple benefits society membership brings to them for their careers, collaborations and quality of science .

In conclusion, changes to the current model provide a substantial threat to the viability of societies such as ours. With this letter we implore the administration to perform an in-depth assessment of the wide ranging implications of the proposed changes on the broader scientific community, including academic institutions, industry and government prior to making decisions on open-access publishing, and as part of this process engage with all stakeholders, including specialist scientific societies such as ours, to positively move forward toward the goal of openness, reliability and access to scientific research and development, together with the fostering of high quality science.

Sincerely,

A handwritten signature in blue ink, appearing to read "M. McGuckin".

Michael McGuckin, PhD
President, Society for Mucosal Immunology

A handwritten signature in black ink, appearing to read "Brian J. Kelsall".

Brian Kelsall, MD
Editor-in-Chief, *Mucosal Immunology*

On behalf of the Society for Mucosal Immunology Board of Councilors and membership.

CC:

The Honorable Kelvin Droegemeier, Director, Office of Science and Technology Policy



American College of Neuropsychopharmacology

March 27, 2020

Dr. Kelvin Droegemeier
Office of Science and Technology Policy
Executive Office of the President
Eisenhower Executive Office Building
1650 Pennsylvania Avenue
Washington, DC 20504

Dear Dr. Droegemeier:

Founded in 1961, the American College of Neuropsychopharmacology (ACNP) is a professional organization of more than 1200 leading scientists, including four Nobel Laureates. The mission of ACNP is to further research and education in neuropsychopharmacology and related fields. Neuropsychopharmacology is an international scientific journal and the official publication of ACNP. The College has closely followed the changes occurring in academic publishing and supports all models and approaches that have the potential to lead to a more open scholarly communication environment and a greater empowerment of researchers. Our College supports building a future where quality, rigor, replicability, reproducibility, and integrity of research can be sustained while meeting the access needs of researchers and the public in an open and collaborative manner.

We were alarmed to learn that the Administration may be considering a precipitous move to require immediate access to any article that reports on federally funded research, without due consideration of the impact of such a policy on research and discovery and the costs to the taxpayer of a shift to open access. Such a step runs counter to Administration goals across the government. The academic publishing industry is built around an infrastructure of editors and reviewers who use their scientific expertise to review responsibly the work described in manuscripts, supported by federal funds, to ensure that quality and ethical standards are met. The discoveries made through these federal funds are critically evaluated for their value and then made available throughout the world to national and international groups. If this industry's business model is disrupted without a sound and sustainable alternative business plan, then the foundation for the review, editorial and publication process will be undermined, and the quality of publications, as well as the rigor in the science, compromised, because the infrastructure supporting these no longer exists. This disruption would undermine the agency's goals to support the best research and catalyze discovery.



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Our College is in strong opposition to any such proposal. Existing policies that require free access to articles no later than 12 months after publication were a carefully considered, collaboratively developed compromise intervention in the market, and any further changes must also be carefully considered. Uniform and unilateral reductions in the embargo that fail to identify sufficient funding for open access publishing would threaten investments in the research communication system. Under a regulatory framework that mandates immediate access to articles, our journal and other scholarly publishers would be unable to continue their work to advance science, health, and innovation, because they will be financially compromised and non sustainable. Their work includes managing the peer review process, revision, and copyediting; preparing manuscripts; creating extensive links to related research outputs; providing electronic and print distribution; and ensuring discovery and deposit into long-term archives. It is often the case, as it is for our own College, that the publication process includes support for research communities and the American scientists who are key to future generations of discovery and innovation. This system will be severely compromised by undermining the support for the publication business model. We urge you to continue conversations with leaders in the academic publishing field to find a solution that will benefit all constituencies.

Sincerely,

A handwritten signature in blue ink, appearing to read 'MAO', enclosed in a thin black rectangular border.

Maria A. Oquendo, M.D., Ph.D.
President, ACNP

From: Think Computer Foundation <info@thinkcomputer.org>
Sent: Tuesday, March 31, 2020 5:54 PM
To: MBX OSTP Public Access <MBX.OSTP.PublicAccess@ostp.eop.gov>
Subject: [EXTERNAL] RFI Response: Public Access

To Whom It May Concern:

On behalf of Think Computer Foundation, I write to offer the following comments:

All medical and scientific research, but especially federally-funded research, should be freely available to the general public at no charge and with no access barriers. The COVID-19 pandemic proves conclusively that the lack of free access to such information not only is a hindrance to scientists and patients, but actually endangers lives. No matter which journal an article is published in, if a single penny of taxpayer dollars supported the underlying research, that research output should be 100% freely available. To the extent not already implemented, all journals should have some mechanism to share content freely via the NIH PubMed website (presently ><https://www.ncbi.nlm.nih.gov/pmc/><).

The President should encourage the passage of legislation that broadens "fair use" under 17 U.S.C. § 101 et seq. to include the publication of any scientific research paper, whether in a journal or otherwise. Profit should simply not be part of the calculus for scientific publication.

Furthermore, the federal government should rely on published, peer-reviewed research conducted by trained scientists when offering responses to public safety threats. Donald Trump has done just the opposite, ignoring scientific fact and spreading lies on a near-daily basis in pursuit of better television ratings, while Americans die of COVID-19. He should immediately resign and turn himself in for criminal prosecution before he kills more of the Americans he swore an oath to protect.

"American science leadership" and "American competitiveness" would each benefit the most by the resignation and criminal prosecution of Donald Trump and Mike Pence. Potential challenges are the facts that Donald Trump and Mike Pence are both treasonous criminals unfit for office and will likely refuse to resign. Therefore, as an alternative, the cabinet should invoke the 25th Amendment, which would also enhance American science leadership and American competitiveness, as science cannot flourish under the leadership of a mentally ill, profoundly ignorant, narcissistic fool such as Donald Trump.

Regards,

Aaron

Aaron Greenspan
President
Think Computer Foundation

><http://www.thinkcomputer.org><

AMERICAN ACADEMY OF CHILD & ADOLESCENT PSYCHIATRY

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April 1, 2020

Lisa Nichols

Assistant Director for Academic Engagement

Office of Science and Technology Policy (OSTP)

1650 Pennsylvania Ave, NW

Washington, DC 20504

publicaccess@ostp.eop.gov

Subject: RFI Response: Public Access

Dear Ms. Nichols,

On behalf of the American Academy of Child and Adolescent Psychiatry (AACAP), a national medical specialty society representing more than 9,500 members, I am writing in response to the "Request for Information on Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research," published in the Federal Register on March 5, 2020, page 12949.

AACAP is the leading national professional medical organization dedicated to treating and improving the quality of life for children, adolescents, and families affected by emotional, behavioral, developmental, and mental disorders.

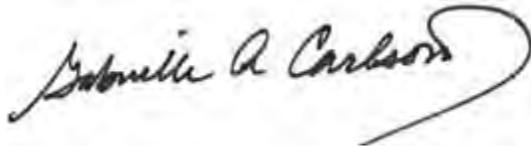
AACAP's flagship scientific publication, the *Journal of the American Academy of Child and Adolescent Psychiatry (JAACAP)*, is the leading journal focusing exclusively on today's psychiatric research and treatment of the child and adolescent. *JAACAP* is the #2 ranked journal in the field of pediatrics and #14 in psychiatry.

The proposed policy by the Office of Science and Technology Policy (OSTP) to mandate the immediate and free publication of peer-reviewed journal articles would undercut the ability of societies like AACAP to recoup the investments made in peer review, curation, and assuring the quality of scientific research content by charging for reader access to those articles. Like many journals, *JAACAP* accommodates the 2013 OSTP policy mandating that research created with public funds be made publicly available within a 12-month period. The existing policy allows AACAP and organizations like it to meet the needs of researchers and US taxpayers while also funding not just the peer review and publication of scientific research results, but also research grants, educational opportunities, and workforce development initiatives that benefit the medical and scientific community.

AACAP supports the statements that have already been made by other organizations on this topic^{1,2,3} and urges OSTP to retain the current policy of a 12-month embargo period for free distribution of peer-reviewed journal articles reporting federally funded research.

Thank you for the opportunity to comment on the proposed policy and its far-reaching implications. If you have any questions, please direct them to Heidi B. Fordi, CAE, AACAP Executive Director.

Sincerely,

A handwritten signature in black ink that reads "Gabrielle A. Carlson". The signature is written in a cursive style and is enclosed within a large, sweeping, handwritten flourish that extends to the right.

Gabrielle A. Carlson, MD
President
American Academy of Child & Adolescent Psychiatry (AACAP)
3615 Wisconsin Avenue, NW
Washington, DC 20016-3007
O: (202) 966-7300
F: (202) 966-5894
www.aacap.org

¹ Letter from 60+ scientific societies: <https://www.acs.org/content/dam/acsorg/policy/publicpolicies/science-policy/highqualityscience/science-orgs-opposing-proposed-embargo-change-letter-121819.pdf>

² Letter from 140+ organizations (including AACAP): <https://presspage-production-content.s3.amazonaws.com/uploads/1508/lettertothepresidentfrom140researchandpublishingorg2.pdf?10000>

³ ASAE letter: <https://www.thepowerofa.org/2020/01/asae-opposes-white-house-research-access-policy/>



Author: Robert M. Harington

Date: 23rd March, 2020

To: Lisa Nichols, Assistant Director for Academic Engagement, OSTP

Send to: publicaccess@ostp.eop.gov

RFI Response: "Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research" (RFI posted February 12, 2020)

Introduction:

The American Mathematical Society (AMS) is a member society (30,000 members), supporting the mathematics research community.

The AMS does not want to burden researchers in any way with complexity, or at least any more complexity, around the publishing process. Researchers need to be able to focus on research and their careers and societies such as the AMS need to be able to support those researchers.

The AMS supports openness, and is sympathetic to establishing an open research ecosystem as long as it remains financially viable for the AMS to operate in the ecosystem. The AMS produced a [Primer on Open Access](#), which has been made available to the mathematical community. Much like academic institutions, public funding and taxpayer dollars are inextricably linked as a part of this ecosystem that extends from research to publishing to support of researchers themselves.

The AMS supports all mathematicians, not just AMS members. The AMS supports considering a path to more immediate access of articles from federally funded authors, but it needs to be achieved in a way that simultaneously allows the society to continue to gain financial support for publishing activities.

It is worth noting that all AMS final published articles of record are publicly available to the global mathematical community online after a five-year window. Through [CHORUS](#), Federally funded content is publicly available after 12 months.

The AMS is keen to collaborate with the OSTP, funding agencies, and sister societies to explore open access experimentation:

1: Work with the [arXiv](#) preprint server to experiment with allowing federally funded authors to openly post the pre-publication, peer reviewed version of their article.

2: Launch a diamond open access journal across all of mathematics as an open gift to the mathematical community.

3: Investigate transformative approaches to open access that are not based on Article Processing Charges (APCs), reflecting the need for equity across funded and non-funded mathematicians and institutions.

4: Enhance AMS [Open Math Notes](#) as an open resource for mathematical works in progress.

5: Promote a mixed economy of open access and other business models for all types of content that balances openness with financial sustainability for the AMS.

6: Continue to develop innovative publishing tools, preferably in an open source environment, to provide accessible content for a diverse population of mathematicians.

Q&A

Q: What current limitations exist to the effective communication of research outputs (publications, data, and code) and how might communications evolve to accelerate public access while advancing the quality of scientific research? What are the barriers to and opportunities for change?

A: Public access to research outputs refers to the making available of published scholarly content (such as journal research articles, and books) in online digital copies, free of charge at point of use, free of most copyright and licensing restrictions, and free of technical or other barriers to access (such as digital rights management or requirements to register to access).

The AMS publishes a broad portfolio of high-quality journals. When considering the benefits and risks of incorporating open models of publishing journals, it is important to note that there are significant costs associated with publishing journals. For existing journals, or when launching new journals, the AMS must consider all costs of publication including editorial office management, peer review management, technical manipulation of LaTeX files, workflows for tools such as [AMS Math Viewer](#), systems for processing, presentation and sale of print and online products, marketing and strategic journal development, public awareness etc.

A recent report from ([Digital Science – January 2019](#)) indicates countries that have invested in open publishing over the last decade have typically increased their level of international collaboration.

Important to note is that mathematics is a field that is culturally different from many scientific fields. Mathematicians work differently to those in other fields. Mathematicians often produce 50-60-page mathematical proofs as articles, and consume research differently – perhaps in a more contemplative setting than in a fast-paced lab environment. Mathematicians consider their field as open already given that

the arXiv is culturally embedded in the research workflow for many, albeit for deposit of early versions of unrefereed articles.

- a. Approximately 25% of AMS authors receive research funding from a federal agency, with the result that there are limited funds available for gold OA publishing.
- b. The intellectual property of a mathematics article lies in the article itself, rather than the article being a report of an experimental study, and these articles are as valid today as they will be in 30, or even 300, years.
- c. The article of record, published in a journal of record is important for a mathematician's progress in the field, for example in securing tenure and further grant funding. The article of record coexists with preprints in progress hosted on arXiv,¹ and mathematicians value the complete ecosystem of preprint-to published-article-of-record.
- d. Advances in mathematics occur more slowly than in many other science fields. According to a recent study on journal usage,² mathematics is at the extreme for the life of journal articles. Across all subject disciplines, journal half-lives peaked between two and four years.³ However, 17% of all journals had usage half-lives that exceeded six years, with mathematics journals at the extreme – 36% of the mathematics journals examined had usage half-lives exceeding six years.
- e. AMS provides [Mathematical Reviews](#) - an important, subscription-based discovery database for mathematicians, with a host of tools available to support mathematicians in their research and teaching endeavors. This curated database for mathematicians by mathematicians is a key tool used by research mathematicians around the world.
- f. Revenues from publications are used to create opportunities for mathematicians to engage in their research, namely, our conferences and meeting, which are crucial to keeping the research enterprise alive.

In mathematics, Gold Open Access Article Processing Charges are not viable. Fewer than 25% of articles published by the AMS journals are from federally funded authors. Many mathematicians are not funded. The AMS feels strongly that this will create undesirable inequity among those researchers who have federal funding and those who do not.

The AMS relies on publishing business models to provide services directly to all in our community – not just those who are paid-up members. Communities of scholars are able to come together under society structures and plan for development of the next generation of scholars, and indeed often how those that touch their field may enter public and commercial life and thrive – stimulating the wider economy.

¹ <https://arxiv.org/help/general>

² <http://www.publishers.org/usagestudy/>

³ *Usage half-life* is defined as the time taken for a group of articles to reach half of their total number of downloads.

If a significant portion of content is immediately available to the wider public as a part of the journal, there is a risk that institutional customers who purchase journal content will no longer need to do so, and revenues will likely decline. The ability of the AMS to perform an important role in the academic ecosystem will be weakened.

Q: What more can Federal agencies do to make tax-payer funded research results, including peer reviewed author manuscripts, data, and code funded by the Federal Government, freely and publicly accessible in a way that minimizes delay, maximizes access, and enhances usability? How can the Federal Government engage with other sectors to achieve these goals?

A: From the perspective of the AMS and the field of mathematics, Federal agencies can initially collaborate with societies to devise communication on models of access that do not further burden researchers with complexity. Authors remain unaware of the subtleties of copyright law, especially when considering the implications of reuse of content, and potential abuses, through Creative Commons licensing. Federal agencies can collaborate societies such as the AMS to help educate researchers on the value of copyright in a public access setting, be it articles published in journals or in preprint servers.

Federal agencies could work closely with societies such as the AMS, to track and make publicly available versions of research outputs before and after peer review to allow a public window into the research itself, and to allow tracking of outputs. At the same time, society publishers, including the AMS could retain the rights to publish final versions of record of Federally funded articles in journals, some of which may be immediately open and some of which may be behind subscription paywalls, allowing the AMS to provide a mixed publishing economy for society sustainability, and enhanced public access to content.

Q: How would American science leadership and American competitiveness benefit from immediate access to these resources? What are potential challenges and effective approaches for overcoming them? Analyses that weigh the trade-offs of different approaches and models, especially for those that provide data, will be particularly helpful.

A: American science leadership and competitiveness is enhanced by immediate access to research outputs. In fact, in mathematics an open ecosystem currently exists as demonstrated by the flow of open research into the preprint server, arXiv, and then the final published versions of record published by the AMS and other math publishers. The AMS would suggest that preserving this successful ecosystem for mathematics would allow for continued American science leadership and competitiveness, and that by disrupting the ability of the AMS to publish parts of their portfolio behind a paywall, may adversely affect this open ecosystem.

March 24, 2020

Lisa Nichols, Ph.D.
Assistant Director for Academic Engagement
White House Office of Science and Technology Policy

Re: Office of Science and Technology Policy Request for Information on Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting from Federally Funded Research

Via: publicaccess@ostp.eop.gov

Dear Dr. Nichols:

The International Association for Dental Research (IADR) and its American Division, the American Association for Dental Research (AADR), appreciate the opportunity to share our thoughts on public access to peer-reviewed scholarly publications resulting from federally funded scientific research. We are responding to this Request for Information (RFI) both as scientific non-profit 501(c)(3) associations and as co-owners of the *Journal of Dental Research (JDR)* and *JDR Clinical & Translational Research (JDR CTR)*.

IADR and AADR appreciate that the Office of Science and Technology Policy (OSTP) is exploring new mechanisms and opportunities to disseminate the information generated by federally funded research. We recognize that is not enough to generate data and information; we must use and continually build upon that knowledge in a way that benefits society. Therefore, it is important that we continue to regularly engage in conversations surrounding scholarly communication.

As OSTP considers new opportunities surrounding scholarly communication, IADR and AADR would like to provide feedback on the potential challenges with a change in federal policy to provide immediate free access to all published federally funded research, including data and code.

To provide some background, our journals, the *JDR* and the *JDR CTR*, are both specialized and highly regarded scientific journals that serve the oral health and dental research community. The *JDR*, which in 2019 celebrated its 100-year anniversary, is the leading journal in the Dentistry, Oral Surgery & Medicine category, as determined by its Eigenfactor™ Score, and ranks second according to the Thomson Reuters 2-year impact factor. Both *JDR* and *JDR CTR* contain research supported by federal research agencies, including the National Institutes of Health (NIH). From 2016-2019, the average percentage of accepted research manuscripts that contained some funding from NIH was 30 percent for *JDR* and 23 percent for *JDR CTR*.

1

IADR and AADR fully support and are compliant with the current 12-month embargo period, which was established following multiple conversations between stakeholders, including scientific societies, publishers and open access advocates. We believe that model, which was carefully deliberated and collaboratively crafted, has proven to be a successful one. Indeed, a recent analysis concluded that the carefully balanced NIH policy did not harm journal publishing as measured by death and birth rates of biomedical journals.¹

The current embargo period allows us—and other American publishers—to not only support manuscript copyediting, layout and publishing the *JDR* and *JDR CTR* online, all of which are supported by offering individual and institutional subscriptions, but it also allows us to support the peer-review process and drive scientific innovation and advancement through activities, including but not limited to scientific meetings. A move to shorten or remove entirely the current embargo period would not only affect the financial stability of our journals and other critical research publications, but it could undermine larger cooperative efforts to ensure the U.S. scientific enterprise remains a leader on the world stage.

Additionally, an open access model has financial consequences that must be considered. While a movement toward open access would make information free to the public, someone—whether a university, the federal government, the scientist who produced the work, etc.—would still have to pay for the editorial and production costs associated with putting out a journal. Therefore, immediate free access to research outputs could easily move the cost burden from the reader to individual researchers, who would have to pay fees to publish their work. Such a shift would place the financial burden disproportionately on students and early career scientists, which could cause a significant ripple effect within the research enterprise. While federal grants may include funding for publishing, there is often a limit on how much of that grant can be spent on publishing fees.

IADR and AADR are grateful that OSTP is seeking ways to maximize access and enhance the usability of federally supported research and believe that there are new frontiers to discover in publishing. However, we are concerned that the move to make research results immediately available could have negative and unintended consequences for research and discovery. We see the current 12-month embargo period as an appropriate compromise between the desire for a public access model and the recognition of the value that publishers provide to research.

¹ Peterson AT, Johnson PE, Barve N, Emmett A, Greenberg ML, et al. (2019) The NIH public access policy did not harm biomedical journals. *PLOS Biology* 17(10): e3000352. <https://doi.org/10.1371/journal.pbio.3000352>

To: publicaccess@ostp.eop.gov

From: Margaret C. Levenstein, Director, Inter-university Consortium for Political and Social Research (ICPSR)

Subject: RFI Response: Public Access

Date: March 9, 2020

Thank you for this opportunity to comment on the Office of Science and Technology Policy (OSTP) Request for Information: Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting from Federally Funded Research. This is a key moment in federal conversations on openness. As the director of the Inter-university Consortium for Political and Social Research (ICPSR), the largest archive of digital social and behavioral science data in the world, I am deeply interested in providing recommendations on approaches for ensuring broad public access to the peer-reviewed scholarly publications, data, and code that result from federally funded scientific research.

For over fifty-five years, ICPSR has distributed and preserved data, as well as championed data sharing. ICPSR strongly supported the 2013 OSTP memorandum issuance, stating in our [public comments](#) that the memorandum would "promote re-use of scientific data, maximize the return on investments in data collection, and prevent the loss of thousands of potentially valuable datasets." To help our federal agency [partners](#) fulfill the mandate to provide open access to results of federally funded research, we created a [Guidelines for OSTP Data Access Plan](#) web page that provided an overview of the requirements, why they mattered, and the key issues for federal agencies to consider when formulating plans.

While our general guidance remains the same in 2020 as it did in 2013 (i.e., encouraging federal agencies to make research data discoverable, meaningful & usable, persistent, trustworthy, and citable, while protecting confidentiality), we would like to emphasize three persistent barriers to providing public access to the results of federally funded research, as well as opportunities for change.

First, infrastructure to manage, preserve, and disseminate data is costly, especially when the data are large and complex. Likewise, preparing data for reuse requires significant investment -- often by domain or specialty repositories. In the ecosystem of repositories that exist, "free" data often do not include the necessary metadata for reuse and long-term preservation. ICPSR advocates for the federal government to "commit to sustaining institutions that assure the long-term preservation and viability of research data. Agencies supporting research must back up the new open-access requirements with funding to ensure their success....These are modest costs to assure a strong

return on public investments in research and to enable uses of data unanticipated by the original investigators” ([Sustaining Domain Repositories for Digital Data: A White Paper](#)).

One of the best ideas for supporting long-lived infrastructure is to set aside a percentage of federal research funding for digital data archiving and preservation. Barend Mons’s February 2020 [Nature article](#), “Invest 5% of research funds in ensuring data are reusable,” summarizes the idea succinctly: “It is irresponsible to support research but not data stewardship.” This financial investment needs to support human, organizational, *and* hardware infrastructure for data stewardship, including “trained professionals, organizations with the capacity to persist over time, and community standards for metadata and preservation” ([Sustaining Domain Repositories for Digital Data: A White Paper](#)).

We strongly encourage funding for data archiving and preservation be provided directly to data repositories, rather than the current OSTP memorandum allowance for the “inclusion of appropriate costs for data management and access” in proposals; “PIs should not be faced with a tradeoff between accomplishing their scientific objectives and sharing their data” ([Sustaining Domain Repositories for Digital Data: A White Paper](#)).

Second, a growing number of studies include sensitive and confidential data. Stringent protections must be in place to guard and provide access to these data. Protecting the confidentiality and personal privacy of human subject data requires technological, social, and regulatory dimensions. Perfect and permanent anonymization is essentially impossible for many important use cases. The amount of data already available about individuals and the low cost of computational capacity make re-identification easier than at any previous time.

In order to balance the utility of data with privacy protection, repositories need to manage and provide tiered access to data of different levels of sensitivity and the credentialing of data users to create a culture of responsible data management and privacy protection. Repositories can be characterized by their ability to ensure differential and effective consequences for breaching responsible data use and to deploy different technologies for both making data safe and/or making safe the technological platforms where the data are analyzed. Tiered access should balance safe people, safe places, and safe data.

Trusted repositories like ICPSR provide safe tiered access, and have done so for several decades. Thousands of researchers use restricted, confidential data through the Inter-university Consortium for Political and Social Research (ICPSR), either under

a restricted data license that allows them to download encrypted data to a safe, local computer, or in a physical enclave, a virtual enclave, or a secure query system. We strongly encourage federal agencies to utilize these trusted repositories to share sensitive and confidential data, alleviating the challenge of balancing sensitive information with public access.

Third, maximizing access involves far more than simply uploading a dataset and registering a persistent identifier. Repeating our 2013 [public comments](#) about the OSTP memorandum, “Meaningful and usable access involves not just finding data, but also knowing how to use and interpret the data. Incomplete, incorrect, or messy data limit use and reuse. Proprietary or obsolete data formats can be unreadable or limit access. Repositories ‘curate’, or enhance, data to make it complete, self explanatory, and usable for future researchers. This includes adding descriptive labels, correcting coding errors, gathering documentation, and standardizing the final versions of files. Curation is crucial to maximizing access.”

One of the best ways to ensure solid curation is to enforce common standards, including repository, data management plan, and metadata and machine readability standards. The Government Accountability Office’s November 2019 [report](#) (page 37) noted a current absence of common standards by federal agencies. We strongly encourage federal agencies to work with trusted repositories to implement and enforce common standards -- many of which have existed for several years, if not decades.

Thank you again for this opportunity to comment on the Request for Information: Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting from Federally Funded Research.

Margaret C. Levenstein, Ph.D.

Director, [Inter-university Consortium for Political and Social Research](#)

Research Professor, [Institute for Social Research](#) and [School of Information](#)

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From: Sonja Petrovic <sonja.petrovic@iit.edu>
Sent: Thursday, March 19, 2020 9:50 AM
To: MBX OSTP Public Access <MBX.OSTP.PublicAccess@ostp.eop.gov>
Subject: [EXTERNAL] RFI Response: Public Access

I think it is very important to support access to scholarly publications!

Not so long ago, European funding agencies mandated that ***all*** government-funded research be published **only** in diamond-open access journals. This was *meant* to be a blow for big profit-making publishers. But diamond open access means immediate online access for free; and this has also *inadvertently* spurred the terrible industry of fake science publications and predatory publishing, where authors pay to get their articles online. (That's the short story.)

The green open access model, followed by many reputable journals, is also a great option, and something I would urge the Federal funding agencies to mandate.

- *Basically it says:* do not paywall research publications. But, if you run (say) a non-profit publishing company (I can give you an example run by mathematicians: [>https://msp.org/<](https://msp.org/)), then all articles will be free online after five years.

- *Why I support it:* Five years is a relatively short delay, particularly given that we have (1) ArXiv.org and (2) institutional repositories such as IIT-IR where authors can put all of their copyrighted and paywalled work out for the public to see -yes, even Elsevier offprints!. This delay ensure the publisher can still recover the cost of (editing, managing, typesetting, and) publishing a journal through library subscription fees, which are in turn kept to be low enough to actually be affordable.

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Sonja Petrović

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" Success is a staircase, not a doorway. Climb. "



2020 ASCB Statement on Proposed Open Access Executive Order

The American Society for Cell Biology (ASCB) supports open access to scientific research results. It strongly believes that artificial barriers to scientific communication slow scientific progress. The sooner findings are shared, the faster they will lead to new scientific insights and breakthroughs. For that reason, since 2001 the ASCB has provided free access to all articles in its basic research journal *Molecular Biology of the Cell* two months after publication.

The ASCB believes that publishers of research articles should move as quickly as feasible toward making them freely available to the scientific community and the public. However, scientific publishing and the research community it supports comprise a complex ecosystem, and there are many paths toward open access. Arbitrary deadlines and highly prescriptive mandates for achieving open access can be destructive. Critical to science is the preservation of a fair peer review and publications process which is currently supported in part by library subscriptions. Care must also be taken not to shift the burden of paying for publication from libraries to individual researchers who may not have the resources to pay publication fees or to pay such fees would need to redirect funds from their research activities.

Along with serving as the publishers of research findings, scientific societies play other unique roles within the research community, and these activities are often supported in part by revenue from publishing. For example, many research results are presented at society-sponsored scientific meetings, societies sponsor important career development programming that helps nurture the next generation of researchers, and they promote diversity, inclusivity, and equity in science. Many of these services have been provided to the scientific community at low or no cost because societies have used revenue from publications to give back to the community. A sudden shift in this approach will jeopardize these important services.

Any federal open access Executive Order should not only support access to the results of scientific research but should also invest in the scientific societies that are so critical to making the American biomedical research enterprise the envy of the world.



SCHOOL OF SOCIAL SCIENCES, HUMANITIES AND ARTS

UNIVERSITY OF CALIFORNIA, MERCED
5200 NORTH LAKE ROAD
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To: Lisa Nichols, Assistant Director for Academic Engagement, OSTP
From: Dr. Maria DePrano, Chair, Library and Scholarly Communications Committee (LASC),
Academic Senate, UC Merced
Dr. Michael Scheibner, Chair, Committee on Research (COR), Academic Senate, UC
Merced
Re: RFI Response: Public Access
Date: March 16, 2020 - Corrected March 17, 2020

Dear Lisa Nichols and the Office of Science and Technology Policy (OSTP):

The members of the Library and Scholarly Communications Committee (LASC) and the members of the Committee on Research (COR) of the Academic Senate at UC Merced affirm that the public should have free and immediate access to peer-reviewed findings of publicly-funded research. Open access to scholarly research publications is a broadly-held value at the University of California (UC). The UC Faculty have demonstrated our strong support of open access through our [2013 Academic Senate Open Access Policy](#). UC faculty lead our system's open access initiatives in partnership with the University Libraries and are critical leaders of UC's pursuit of open access transformation of scholarly publishing.

With respect to the OSTP Request for Information, we write in strong support of the reduction of the current twelve-month post-publication embargo period to a zero-embargo policy for author-accepted manuscripts. We also affirm that such a policy represents a deliberate step forward in alignment with UC's mission to serve society and to provide long-term benefits through the transmission of research and knowledge.

We stress that the financial onus of making articles open access should not be on the Principle Investigator's grant. We recommend that the federal granting agencies implement solutions such as the National Institutes of Health (NIH) has done with the Consolidated Appropriations Act of 2008 (H.R. 2764) in which electronic copies of peer-reviewed research and findings from NIH-funded research are deposited in open PubMed Central database.

Another solution is for federal granting agencies to implement a "pay for publishing performance" program in which publishers should demonstrate to the funding agencies and public research institutions how effective they have been in disseminating research funded by the taxpayer. In other words, for federally funded research the federal funding agencies should pay the publishers to disseminate the research.

Thank you for the opportunity to comment.



Office of Science and Technology Policy (OSTP)

Request for Information: Public Access to Peer-Reviewed Scholarly
Publications, Data and Code Resulting from Federally Funded
Research

Submitted To:

Lisa Nichols, Assistant Director for Academic Engagement

Tyler Point of Contact:

Contact Name: Michael Donofrio

Phone: 703-403-3373

Email: michael.donofrio@tylertech.com

Socrata is the national leader in software-as-a-service (SaaS) for self-service data management, analytics, and information sharing for governments, with over 400 customers Nationwide. Socrata is the flagship solution in the Data & Insights division of Tyler Technologies, the largest software company in the U.S. exclusively focused on software for the public sector.

We power some of the largest data sharing and analytics platforms across Federal, State, County, and City governments including:

- Federal - Department of Transportation, Department of Commerce, Department of Veterans Affairs, US Agency for International Development, Centers for Medicare and Medicaid Services (CMS), Centers for Disease Control and Prevention (CDC), NASA, etc.
- 31 States - California, Texas, Washington, New York, Pennsylvania, Maryland, Michigan, etc.
- Counties - Los Angeles, San Diego, King (WA), Fulton (GA), Montgomery (MD), etc.
- Cities - New York, Chicago, Los Angeles, San Francisco, Seattle, Dallas, Miami, Austin, etc.

We look forward to collaborating and adding value to this important asset; data. Below is our response to the questions:

What current limitations exist to the effective communication of research outputs (publications, data, and code) and how might communications evolve to accelerate public access while advancing the quality of scientific research? What are the barriers to and opportunities for change?

In our opinion, the biggest barrier to change is rationalizing how to effectively consolidate a massive cobweb of distributed mechanisms for finding and accessing research outputs, that so many depend upon every day, and cost the government billions, yet impedes our collective ability to advance research.

Government has created countless mechanisms for finding and accessing research outputs both in public and secure environments. Some mechanisms are good, some bad, and some non-existent. Providing a common catalog and metadata to index all the existing mechanisms, and the research outputs within them, would greatly improve discovery.

Once a user discovers the research outputs they are looking for, there remains opportunities to improve their ability to access the publications, data, and code. Data is commonly locked behind query tools, presented as text in a website, or embedded in a PDF table or chart. This makes access to and reuse of data inconsistent, time consuming, and often times impossible. This approach is also costly to government to maintain all the search and query tools that are preventing users from accessing the raw data.

Research outputs should be discoverable in a machine-readable way and leverage application programming interfaces (API) to facilitate search across all the distributed mechanisms. Government should leverage a common catalog that can securely govern access to research outputs, or appropriately redacted versions thereof, for diverse stakeholders including programs, internal teams, other government organizations, grantees, research partners, private sector, the public, and others. Users should be able to access all data, not just the filtered results of query, in an interoperable API format.

Stakeholders should be able to leverage the research outputs, and in particular the data, to continue the effort to improve the quality of scientific research. Future stakeholders should be

enabled with capabilities to connect their analytical tools of choice to API-enabled data, and reduce the time and cost of accessing, replicating, normalizing, transforming, joining, and storing data. Stakeholders should also be able to contribute new data that will be used in their work and leverage platform API's to make the data interoperable to power their analytical tools of choice. This would reduce the costs stakeholders incur for using and managing data today.

Additionally, stakeholders should be enabled to build and submit their research outputs in a secure, collaborative, yet controlled manner. Providing an intuitive interface to create interactive and machine-readable reports can replace the current proliferation of PDFs that lock data and insights away.

We can overcome these barriers with Socrata by leveraging the existing dissemination mechanisms, making the research outputs discoverable in a central catalog, and do so quickly with technology that's already proven across all levels of government. Over time we can supplement or replace those dissemination mechanisms that don't work and expand the utility for offering stakeholders a collaboration space to build and submit their research outputs.

- What more can Federal agencies do to make tax-payer funded research results, including peer-reviewed author manuscripts, data, and code funded by the Federal Government, freely and publicly accessible in a way that minimizes delay, maximizes access, and enhances usability? How can the Federal Government engage with other sectors to achieve these goals?

In the short-term, leveraging a common catalog and metadata to index and search all the existing mechanisms, and the research outputs within them, would greatly improve discovery and access to existing resource outputs. Usability would not change and continue to be an impediment.

Over the longer-term, the opportunities to create incremental efficiencies in the end-to-end process will minimize delay, maximize access, and enhance usability; systemically. Leveraging Socrata from end-to-end will create efficiencies throughout the process enabling stakeholders to create and contribute their research, government stakeholders curate, redact and govern, then disseminate research outputs back to stakeholders in a controlled manner.

- How would American science leadership and American competitiveness benefit from immediate access to these resources? What are potential challenges and effective approaches for overcoming them? Analyses that weigh the trade-offs of different approaches and models, especially those that provide data, will be particularly helpful.

Leveraging the outputs of past research for subsequent efforts will propel innovation forward and improve American competitiveness. We suspect many of the challenges to be cultural and contractual related to the ownership, governance, and reuse of data.

The initial challenge, that can be solved quickly, is deploying a consolidated catalog to improve the discovery of existing resource outputs. This would immediately make it easier to find resource outputs in a consistent manner and leverage existing mechanisms for access and usability.

The mid-term challenge is assessing and retroactively improving accessibility and usability of existing research outputs and mechanisms. The scope of this is monumental, so it makes sense to undertake this phase incrementally. Converting Excel files to Socrata datasets will provide for APIs quickly. Extracting data from PDF documents will take much more time. It makes sense to prioritize where existing resource outputs should be made more accessible and usable.

In parallel, we would look to deploy capabilities for stakeholders to create and contribute their research outputs, and associated data, to the platform. This would provide an optimal scenario for new research outputs to comply with any new requirements and provide for clean data from end-to-end.

- Any additional information that might be considered for Federal policies related to public access to peer-reviewed author manuscripts, data, and code resulting from federally supported research.

We thought it might be helpful to see an example of some of our relevant work with the US Agency for International Development. Here is an excerpt from their launch in November 2018:

The [Development Data Library](#) (DDL) is USAID's publicly available repository for Agency-funded data-on-demand. As a best practice digital archive, the new platform strives to preserve and accelerate the re-use of valuable data to advance international development and improve program development and performance.

Actively managed by a staff of data curators, USAID's new DDL is a true data repository, suited for internal Agency analytics as well as sharing with the general public. New features in the DDL can be used to visualize data, download in its raw form, track changes over time, or create dynamic connections via an Application Programming Interface (API) to filter, query, and aggregate data.

There is an immense richness in the data collected by USAID partners around the world, and this data holds the potential to improve the lives of some of the world's most vulnerable people. When a development project ends, the data can yield new insights for years or decades into the future. Rather than risk losing access to this data, USAID partners and staff upload their data to the DDL, ensuring its preservation and making it easier to discover, share, and reuse this data over time.

We look forward to collaborating with your team to find opportunities to expand research and provide an American competitive advantage.

Kind regards,

Michael Donofrio
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Request for Information: Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting from Federally Funded Research

Response from: Wellcome Trust, UK

Author: Robert Kiley, Head of Open Research; email: r.kiley@wellcome.ac.uk

Summary

We welcome the opportunity to respond to this Request for Information and share with the Office of Science and Technology Policy (OSTP) the experience we have gained over the last 15 years in implementing Wellcome's Open Access (OA) and output sharing policies.

In short, we believe that requiring the research outputs which arise from our funding to be made open, is the most effective of way of ensuring that these findings can be accessed, read and built upon.

In this response we will make a distinction between access to research *articles* and research *data/code*. Specifically, Wellcome requires research articles that arise from our funding to be made open access, without any embargo and licensed in ways which facilitate their reuse by anyone (including commercial reuse).

In terms of data/code we recognise that there may be legitimate reasons (privacy, ethical concerns etc) to limit access to these outputs. As such we support a model in which researchers are encouraged to share data and code in a way which is as open as possible and as closed as necessary.

When reviewing its public access policy, it may be helpful if the OSTP also considered applying different approaches to research articles from that which it applies to research data and code.

Responses to questions posed in RFI

- 1. What current limitations exist to the effective communication of research outputs (publications, data, and code) and how might communications evolve to accelerate public access while advancing the quality of scientific research? What are the barriers to and opportunities for change?***

Publications

The coronavirus ([COVID19](#)) pandemic has starkly highlighted the need for researchers, policy makers and the general public to have unfettered access to the research literature. A recent article in the [Guardian](#)¹ argued that “hiding research papers behind a subscription paywall, could be killing people”, whilst a group of 66 US patient and disease advocacy organizations [stated](#) that “information critical to health should no longer be held hostage by arcane publishing”².

¹ Coronavirus and Ebola: could open access medical research find a cure?

<https://www.theguardian.com/education/2020/jan/22/people-cant-learn-about-treatments-they-need-why-open-access-to-medical-research-matters>

² See: <https://sparcopen.org/wp-content/uploads/2020/01/Organizations-Open-Access-Letter.pdf>

However, despite such concerns and calls for change, and after more than 15 years of OA mandates, declarations and discussions, some [75%](#) of the world's research literature is, on publication, only available to paying subscribers³. Given that much of this research is funded by the public purse, restricting access to those who have funded it is unacceptable.

If the OSTP were to support an open access mandate – requiring the research articles which arises from its funding to be available to all, without embargo and with license terms that permit re-use subject only to appropriate attribution – then not only do we solve the problem of access, but we also provide the opportunity for others – including machines/computer to build on this content and uncover new knowledge.

Indeed, as the volume of scientific information continues to increase at a rapid rate, the use of text and data mining and artificial intelligence (AI) algorithms will become ever more crucial to the research enterprise. These tools enable researchers (and others) to uncover new and unsuspected associations and insights– stimulating discovery and opening up novel avenues of research and innovation. These benefits however, can only be realised if the content is both accessible, and licensed in ways which allow this reuse.

Some publishers, including the National Academy of Sciences, have argued that making a preprint – the version of an article *before* peer review – open to all is the best way to deliver on the public access policy⁴. We disagree with this, and although we are highly supportive of the preprints, the sharing of the unrefereed research articles does not meet our OA policy requirements. We believe the peer review process adds significant value to research articles – helping to check the rigour of the research findings, identifying omissions and highlighting errors – and as such we would encourage OSTP to develop a policy which ensures that the version *after* peer review is made open access.

2. *What more can Federal agencies do to make tax-payer funded research results, including peer-reviewed author manuscripts, data, and code funded by the Federal Government, freely and publicly accessible in a way that minimizes delay, maximizes access, and enhances usability? How can the Federal Government engage with other sectors to achieve these goals?*

Publications

The existing US Public Access policy⁵ has been effective in making federally funded research articles accessible. A study by Vincent Larivière and Cassidy R. Sugimoto⁶ shows that around 90% of NIH-funded research is made available in line with the existing policy. However, though this demonstrates the effectiveness of policy intervention, the existing policy allows

³ Universities UK Monitoring the transition to open access: December 2017.

<https://www.universitiesuk.ac.uk/policy-and-analysis/reports/Pages/monitoring-transition-open-access-2017.aspx>

⁴ McNutt M. Reply to Kiley and Smits: Meeting Plan S's goal of maximizing access to research. *PNAS* March 26, 2019 116 (13) 5861; first published March 4, 2019 <https://doi.org/10.1073/pnas.1902498116>

⁵ <https://obamawhitehouse.archives.gov/blog/2013/02/22/expanding-public-access-results-federally-funded-research>

⁶ Do authors comply when funders enforce open access to research? Vincent Larivière & Cassidy R. Sugimoto. *Nature*, 24th October 2018 available at: <https://www.nature.com/articles/d41586-018-07101-w>

for these outputs to be embargoed for 12 months and is silent in terms of specifying how such works should be licensed.

As highlighted above the most effective way to make tax-payer funded research freely available in a way that **minimises delay, maximises access and enhances usability** is to develop a policy which requires these research articles to be made open to all, without an embargo, and licensed in ways which facilitates re-use.

In developing such a policy, we would also encourage the OSTP to require that such articles include a statement which specifies how data and code underlying the findings can be accessed, with an expectation that it be made openly available wherever possible. This requirement would help ensure that the data and code underpinning a research article was discoverable and, even if access to the data is restricted (for legal, ethical, or privacy reasons), the availability statement would make clear how an interested party could seek permission to access the data.

A coalition of 24 funders – including the Bill and Melinda Gates Foundation, the European Research Council, the World Health Organization and Wellcome – are working together to implement a set of principles (“Plan S”⁷) to provide open access to the research literature. If appropriate the federal agencies could seek to align their policies with this initiative.

3. *How would American science leadership and American competitiveness benefit from immediate access to these resources? What are potential challenges and effective approaches for overcoming them? Analyses that weigh the trade-offs of different approaches and models, especially those that provide data, will be particularly helpful.*

Publications

The economic benefits of making research articles open access fall into one of two mechanisms: **efficiencies** (doing things at a lower cost) and **opportunities** (doing things that might not have happened otherwise).

Efficiency gains arise as those who wish to access the research no longer have to pay, but also through savings on labour costs. Wellcome, for example, published a short case study⁸ which showed how much time (and therefore costs) could be saved if research content was openly licensed, thus negating the need to seek permission from subscription publishers before the content could be exposed to text and data mining technologies.

Regarding opportunities – or in this case missed opportunities – a study in *Nature Biotechnology*⁹ reported that a pharmaceutical company “**suffered a six-month setback to a drug development programme** because a paper was missed in an inaccessible journal”. Had this research been accessible, then not only would the company have saved 6-months’ worth of effort, but potentially would have got a product to market more quickly.

⁷ Plan S. See: <https://www.coalition-s.org/addendum-to-the-coalition-s-guidance-on-the-implementation-of-plan-s/principles-and-implementation/>

⁸ See: <https://wellcome.ac.uk/sites/default/files/wtvm054838.pdf>

⁹ Stuart Lyman Industry access to the literature. *Nature Biotechnology*, 2011, **29**, 571-572
<https://www.nature.com/articles/nbt.1909>

The lack of access to the research literature is a problem many small and medium enterprises (SMEs) are all too familiar with. A study by Houghton for example showed that whilst many SME's rated access to research articles as "very or extremely important" 55% of respondents reported difficulties in accessing research content"¹⁰.

As such, there is a real opportunity here for the US government to take a significant leadership role here and ensure that companies – large and small – can access the research literature to help build new services and develop new, innovative products.

Data/code

It has been estimated that for ever \$1 which was invested in the Human Genome Project, some \$141 of economic activity was generated. Specifically, the \$3.8bn investment drove "\$796bn in economic impact, created 310,000 jobs and launched the genomic revolution"¹¹.

Recognising the huge costs of drug development – the average cost of developing a drug is estimated to be around \$2.6bn – coupled with the fact that only 8% of compounds that enter Phase 1 trials make it to market, the Structural Genomics Consortium (SGC) have developed an innovative public-private partnership in which all data is made open. Pharmaceutical companies are still motivated to work with SGC, building on the basic discoveries made by researchers to develop marketable therapies¹².

By adopting a similar model – and requiring that data and code created by federally-funded research is made as open as possible and closed as necessary – the economic benefits highlighted here can begin to be fully realised.

4. Any additional information that might be considered for Federal policies related to public access to peer-reviewed author manuscripts, data, and code resulting from federally supported research.

If we are to successfully tackle the huge societal challenges we face – epidemic preparedness, antimicrobial resistance, food security etc. – we need to ensure that peer reviewed research articles, which arise from public and charitable funding, are made accessible to all. Crucially, we also need to ensure that these are licensed in ways which allows others – including computers and AI technologies – to access and build on these findings.

We also support the call for research data and code to made available for others to use and build on. Such an approach not only allows other to validate whether the conclusions reached are supported by the underlying data, but it also facilitates the development of new services and products.

¹⁰ Houghton J, Access to Research and Technical information in Denmark, 2011
https://eprints.soton.ac.uk/272603/1/Access_Report_FINAL_published_version.pdf

¹¹ Economic Impact of the Human Genome Project. Battelle Technology Partnership Practice, 2011.
https://web.ornl.gov/sci/techresources/Human_Genome/publicat/BattelleReport2011.pdf

¹² Savage, N. Competition: unlikely partnerships *Nature*, 2016 **533**, pagesS56–S58
<https://www.nature.com/articles/533S56a>

We urge the OSTP to show leadership in developing policies which requires the outputs of federally-funded research to be made open and in so doing maximises the value of the US government's multi-million-dollar investment in research.

Dr Lisa Nichols
Assistant Director for Academic Engagement
Office of Science and Technology Policy
Executive Office of the President
Eisenhower Executive Office Building
1650 Pennsylvania Avenue
Washington, DC 20504
USA

March 17, 2020

Dear Dr Nichols,

RFI Response: Public Access

IOP Publishing is one of the world's leading publishers of peer-reviewed research articles in physics, with staff based around the world, including in two offices in the United States. We publish up to 5,000 journal articles with corresponding authors based in the United States each year, representing approximately 17% of our total journal article output. We also publish many conference proceedings articles by US authors. We write to you in response to the OSTP's request for information on public access to peer-reviewed scholarly publications, data and code resulting from federally funded research, issued on 02/19/2020.

IOP Publishing is committed to open science and is engaged in a wide range of activities to support improved research access, transparency and inclusivity. You can find out more about these initiatives on our Open Physics hub [here](#).

Research data and code

We consider the wider availability of research data and code to be fundamental to enhancing research transparency and reproducibility. The International Association of STM Publishers has declared 2020 the '[STM Research Data Year](#)' and has convened a cross-industry group, which includes IOP Publishing, to explore ways in which journals can support the effective sharing of research data. As a result, IOP Publishing will be introducing research data policies over the course of 2020 across all our journals, with a number of journals adopting a policy to require the inclusion of data availability statements and appropriate citation of research data in all published articles. These statements will indicate whether the data underlying a research article are publicly available and, if so, where they can be accessed. As part of our trial we are providing optional data hosting services to enable researchers without an established subject or institutional repository to deposit their data in a way that meets evolving standards for data to be findable, accessible, interoperable and reproducible.

Peer-reviewed journal articles

We have supported public access to scholarly publications for over two decades, launching the first fully open access physics journal in 1998, the *New Journal of Physics*. We now provide multiple options for researchers to enable their peer-reviewed articles to be made available openly and immediately to the public in a way that supports the costs incurred in developing journals, managing rigorous peer review processes, and producing and distributing articles in line with the latest technical standards. These options reflect the three key stages in a journal article's progress through the publishing process and the means by which we as a publisher cover the costs of that process: those three key stages are, working backwards and in descending order of value, the version of record, the accepted manuscript and the preprint.

Version of record

If research funders wish to maximise public access to and re-use of the published outputs of the research they fund, they should be seeking to ensure that the final published versions – the versions of record – of all such outputs are published on a 'gold' open access basis. These are the versions after peer review, copy-editing, typesetting, formatting, etc, which most clearly and effectively communicate the findings of the research. Versions of record can be published on a 'hybrid' open access basis in any of IOP Publishing's primary research subscription journals, whereby individual articles within a subscription journal are made immediately open access under a CC BY licence; and researchers can also choose to publish their research on an open access basis, under a CC BY licence, in any of IOP Publishing's fully open access journals.

The publishing services provided in both of these 'gold' open access options are funded by publication fees (usually known as article publication charges, or APCs), which the major United States government agencies already regularly support within their researchers' grants. If the United States government wishes to make all the peer-reviewed outputs of federally-funded research immediately publicly accessible, we would urge it to ensure that it makes sufficient funding available to its researchers to enable them to pay such APCs.

Accepted manuscript

If a researcher does not have the funding to pay for gold open access publication, we also allow the version of the article after completion of peer review and with the journal brand attached, but before copy-editing, typesetting and formatting etc – the accepted manuscript – to be made freely available via repositories twelve months after publication. We are an active participant in [CHORUS](#) and through this initiative enable federally-funded research published in our journals to be made publicly accessible. The embargo period is essential to enable us to recoup our investment in the management of peer review and the development and maintenance of strong journals to which researchers want to submit their research. The cost of getting an article to the accepted manuscript stage represents close to 50% of our total costs in publishing an article. At IOP Publishing, where we manage the peer review process internally, around 100 of our 400 staff work in what we call Publishing Operations, which manages peer review, and Publishing Development, which manages journals. Add in the costs of technology to enable the work of those staff and the overheads associated with supporting them and we reach that figure of just under 50%. We must be able to recoup those costs through the subscription sales and licensing to libraries of our journals. Any requirement to make the accepted manuscript version of articles freely and immediately accessible

would undermine our ability to recoup those costs through journal sales and moreover it would represent an appropriation by government of that private investment in the peer review and publishing process.

Preprint

We appreciate that the current RFI relates to peer-reviewed publications, but it is important to note that researchers publishing in any IOP Publishing journal can already share the results of their research publicly through depositing their draft paper, usually known as a preprint or working paper, in a subject or institutional repository prior to or during the peer review process. IOP Publishing has a liberal policy on the distribution of preprints, ensuring researchers are free to share their work at the earliest possible opportunity through this important channel. The subject repository *arXiv* is already widely known and used by the physics community for this purpose. Our policy reflects the fact that we have made no investment in the preprint and should therefore claim no rights over it.

Peer-reviewed conference proceedings articles

In 2019 we published more than 63,000 conference proceedings articles on an open access basis in three conference proceedings journals. The costs of publication were met directly by the conference organisers.

IOP Publishing would be delighted to provide further information on our support for open science and to share ideas on the many sustainable routes available to achieving widescale public distribution of federally-funded research.

Yours sincerely,



Steven Hall
Managing Director, IOP Publishing

KFG Notes

In Response to the OSTP Request for Information

Knowledge Futures Group

Published on: Mar 15, 2020

We, as the [Knowledge Futures Group](#), are writing in response to the request for information by the Office of Science and Technology Policy regarding public access to peer-reviewed scholarly publications, data, and code resulting from federally funded research.¹ As a non-profit consortium of academic, industry, and advocacy organizations founded as a partnership between the MIT Press and the MIT Media Lab, the KFG builds open tools and spaces for scholarly research, communication, and preservation. We are in favor of mandates and policy positions that move the scholarly ecosystem toward greater openness. However, we also understand that openness is necessary but not sufficient. Any mandates for openness must consider the long-term impacts of how the policy is implemented across disciplines to ensure we are moving towards the ultimate goal of a healthy ecosystem for the creation, distribution, and preservation of universal, public knowledge. We must think about constructing a system with and for researchers that incentivizes institutions and their constituencies alike to engage in distributed open collaborative scholarship.²

There is much for the public to gain from open access publishing policies for research. Going beyond this, we believe greater and more nutritive steps should be taken on a structural level to establish an ecosystem of collaboration in which the act of conducting research and the act of publishing it for the sake and benefit of others is the norm. It is for these reasons that we write in support of open access publishing for federally-funded scientific research and are working to build tools that make it easier to do so.

As we write this response, COVID-19 has become a pandemic, and teams are rising to the challenge of developing and manufacturing effective therapeutics and a safe vaccine in a very short period of time. The outbreak exposes systemic deficiencies in scholarly communications that hinder collaborative efforts to make research on this rapidly-evolving situation more widely available. It also underscores the relevance of KFG's central mission to create open infrastructure that supports the publication and discovery of open research. The reality of this virus presents a vital opportunity to describe how research and scholarly communication systems must be reimagined and constructed to serve the public good.

We seek to bring about a future in which the means of communication around new and evolving knowledge is built, managed, and sustained by those who use it. This community-driven approach puts researchers in control of their own tools. In addition, it underlines the potential risks posed by increasing access to publications resulting from federally-funded research, such as the loss of independence of smaller publishers and scholarly associations due to market pressures, and the increasing power of for-profit publishers to control the information ecosystem and resources across the researcher workflow. The market should not drive access to knowledge.

To this end, any open-access mandate must consider:

- Establishing new open scholarly infrastructure.³
- Recommendations for changes to tenure and promotion practices at U.S. institutions that prioritize openness and collaboration, and, relatedly, incentivizing researchers and authors whose careers depend on publication records;
- A redefinition of “high impact” and a revision of scholarly publication metrics;
- Expanding the role of academic societies, libraries, and university presses in stewarding an open and healthy scholarly ecosystem;
- Identifying the risks associated with the consolidation, monopolization, and marketization of knowledge infrastructure.

Thank you for the opportunity to provide our perspective on this important topic. We hope to have further conversations with policy-makers and other respondents on the best way to support public access to publications from federally-funded research while ensuring a healthy, open, and collaborative scholarly ecosystem.

—The Knowledge Futures Group

Footnotes

1. <https://www.federalregister.gov/documents/2020/02/19/2020-03189/request-for-information-public-access-to-peer-reviewed-scholarly-publications-data-and-code> ↵
2. A term borrowed from Sarah Kember, Professor of New Technologies of Communication at Goldsmiths, University of London, and Director of Goldsmiths Press. ↵
3. The KFG’s mission includes building such tools. This work could be amplified by an independent mission-driven utility, funded by a pseudo-tax or on the current publishing system or a government grant, to develop and maintain a common set of tools that fulfill the core functions of a publish-first, review-second scientific publishing system. ↵

From: Tara Nicole Templin <templin@stanford.edu>
Sent: Tuesday, March 17, 2020 12:02 AM
To: MBX OSTP Public Access <MBX.OSTP.PublicAccess@ostp.eop.gov>
Subject: [EXTERNAL] RFI Response: Public Access

What current limitations exist to the effective communication of research outputs (publications, data, and code) and how might communications evolve to accelerate public access while advancing the quality of scientific research? What are the barriers to and opportunities for change?

The general public, businesses, and non-profit organizations in general do not have institutional library subscriptions that grant unlimited access to research articles, which are often very expensive. Those with knowledge about the system will use unregulated alternatives: (1) emailing authors or people with institutional access for pay-walled papers; (2) looking for previous “working paper” versions of the research; (3) looking online for versions of the final article that break copyright agreements. Those who lack knowledge to informally access these documents may spend money that would be better spent on something else. This is a limitation due to either spending unnecessary time on correspondence, working with outdated versions of the research, or spending money incrementally on articles when the benefit to research comes from synthesizing large numbers of papers to understand a novel contribution to a field. It is also a limitation because a public good is not reaching the public.

People with academic affiliations can access research publications to which their library subscribes. The demand for research articles comes primarily from researchers, and as others have pointed out, that demand that will not change by price per article (ie, “inelastic” demand). This is due to the researchers both not directly paying the costs as well as a lack of acceptable substitutes. This is a limitation because publishing companies, and their affiliate journals, effectively operate as monopolies in that journal’s specific area of study and the articles that it publishes, since there are no substitutes for scientific discovery. This means there are the inefficiencies typically associated with monopolies: higher prices, reduced incentives to innovate since there are no competitors, decreased consumer benefits (in this case, researchers, businesses, and the general public), and labor market monopsony power (or the ability to pay very little for inputs due to it being the only provider of a particular good).

The above suggests academic publishers should be subject to intervention due to market failures. Before we talk about those failures, it is important to recognize the successes. Academic publishers monitor submissions for quality by shifting through large numbers of submissions to find the most promising, finding academic reviewers, editing articles, collating issues for publication, and disseminating that information to a large readership that has paid a subscription fee. Publications like *Cell*, *Nature*, and *Science* also require authors to offer plain language summaries and graphical abstracts, providing an incentive for scientists to effectively communicate their research.

Now we consider where market failures could occur. The relevant parties are taxpayers; research funders, researchers (broadly defined), publishers, and institutional subscribers. There are three areas to look at – the demand and supply of inputs to research articles, research articles, and academic prestige. The first market is a labor market characterized by monopsony power. The second is characterized by inelastic demand for research manuscripts. The third is a market that is present both between academics and universities and academics and research funders. Academic publishers supply academic prestige when they publish an article, which researchers demand, inelastically, for their careers.

What more can Federal agencies do to make tax-payer funded research results, including peer-reviewed author manuscripts, data, and code funded by the Federal Government, freely and publicly accessible in a way that minimizes delay, maximizes access, and enhances usability? How can the Federal Government engage with other sectors to achieve these goals?

The Federal Government in many ways also determines the quality of research by choosing which research projects to fund. For example, for funding from the National Institutes of Health, scientists submit large research proposals, which are then evaluated by other scientists. Only those projects which will meaningfully contribute to health are funded.

Data, code, and other raw inputs from publicly funded projects could be required to be submitted to the federal government for public release. As the Federal Government is contracting out research to individual scientists, it is reasonable to ask that the work products are available as a public good. Certainly HIPAA and human subjects research guidelines must be followed in releasing data, but data privacy issues already need to be handled by universities. Furthermore, other funders, like the Gates Foundation and Chan-Zuckerberg, have already started implementing open data and software requirements.

Second, the Federal Government could consider antitrust investigations on publishers. There is a notion of market concentration in antitrust and that new entrants will increase competition. For the FTC to act, typically there must be evidence of a monopoly power that cannot be broken up by new entrants. At first glance, it might look like Elsevier does not have monopoly power, as it claims in its annual reports to have roughly 20% of all academic citations. However, this isn't an accurate characterization of the market. The way that academics use articles is such that journals are not substitutes. A new journal entering the market will not drive prices down, but rather add more costs for university libraries.

RFI Response: Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research

Title: Improving Publication, Preservation and Re-use of Research Data and Software

Authors: Sandra Gesing, University of Notre Dame
Richard P. Johnson, University of Notre Dame
Natalie K. Meyers, University of Notre Dame
John Wang, University of Notre Dame
On behalf of the PresQT consortium

What current limitations exist to the effective communication of research outputs (publications, data, and code) and how might communications evolve to accelerate public access while advancing the quality of scientific research? What are the barriers to and opportunities for change?

Today's researchers are able to explore and analyze scenarios and explore hypotheses more quickly than ever before as computation is now interwoven with science. The creation of chemical compounds can be simulated before touching a physical lab. We can model the interaction of biological organisms to better forecast reaction to changes in environmental conditions. Disaster response tools and corresponding openly available data and models support to save lives and resources. The software, data, and platforms that are the part and parcel of such scientific endeavors can create efficiencies and foster rapid mutual progress when shared between scientists and information systems. However, as more and more scientific research is born digital utilizing complex computational resources that can simulate and analyze a dizzying array of possible scenarios, preserving and sharing research becomes an increasingly challenging effort.

To reuse data it is often necessary to have access to corresponding workflow, software, and complex computational environments that may have been custom built for a research project. Even with the most willing researchers, preparing such data for reuse can present a tremendous barrier to sharing. A part of the solution can be delivered by science gateways. When growth of technical solutions increases the complexity for researchers, science gateways can be employed as easy-to-use end-to-end solutions that support researchers with an integrated solution. Science gateways mitigate complexity of the underlying infrastructure and accelerate science via servicing communities on specific research topics. By using such science gateways as frameworks in a research community, researchers can set the stage for supporting sharing of data. Successful approaches are characterized by being technology agnostic, using APIs and standard web technologies or delivering a complete solution for serving a community efficiently. Depositing data and software into repositories and data stores can be quite labor intensive. Metadata enhancement, provenance reconstruction, reformatting and data documentation efforts can present significant barriers to timely and complete data sharing. Curators engaged near the end of the research life cycle often receive incomplete metadata, at-risk formats, and a paucity of data documentation. Researchers might be overwhelmed with the task being experts in their domain but not necessarily specialists for data and software curation. Even the best data archiving and sharing methods can vary dramatically from lab to lab, from one institution to another, as well as between disciplines, countries and regions with their own policies and

mandates. Reuse and reproducibility are jeopardized in either case. The uptake of containerization approaches such as Docker or Singularity allows for providing the full environment for a computational method - as full science gateway infrastructure or for submission of computational tools on the underlying infrastructure addressing the portability between different hardware architectures. The long-term aspect of preservation of software for over 15-20 years is probably not well addressed via containerization because of dependencies on container versions, operating systems and existing research infrastructures. Containerization can deliver an intermediate solution though.

Research on counter-norms argues that more than goodwill is needed to shift practices to align more closely with reproducibility. As research is increasingly born digital inside complex workflows and archived in a heterogenous manner, it becomes imperative to better plan tools that can foster and facilitate researchers and repositories to utilize best practices and standards to preserve their data, software, and methods for better interoperability and re-use.

Today's scientists and scientific data curators face a challenge to enhance reproducibility and enable more open sharing of reusable research data. Attention to scientific reproducibility has increased awareness that many of today's experiments cannot be easily reproduced. Monya Baker reported in Nature that "More than 70% of researchers have tried and failed to reproduce another scientist's experiments, and more than half have failed to reproduce their own experiments"¹. The greatest barrier to success meeting researcher needs for data sharing may not be tool availability though. The disconnected nature of computational science, research communities, academic culture and asynchronous tool adoption timelines across institutions may be the greater barriers. Tighter connections and integrations between available tools and communities can bridge the gap between tool availability, researcher need, and data re-usability.

To share data in the long term and to share data and software reliably, preservation tools are needed. Projects such as PresQT (Preservation Quality Tool)² aim at filling a gap in the existing reproducibility and preservation landscape by connecting existing solutions. The PresQT services are not standalone solutions but extend the preservation tool landscape in a way that stakeholders like researchers and librarians can keep working in their chosen computational environment, e.g., a science gateway, and receive additional features instead of having to switch to a different software. PresQT services form the connection between science gateways, tools, workflows and databases to existing repositories via standard-based services.

A main lesson learned from science gateways and preservation projects is found in the switch away from system-centric solutions that demand users spending substantial effort in learning new computing environments, toward user-centric solutions that can support researchers more effectively by prioritizing usability, scalability and interoperability. Opportunities for change that acknowledge this trend show promise for accelerating **public access while advancing the quality of scientific research because they meet researchers and research re-use where they are, saving them time and effort.**

What more can Federal agencies do to make tax-payer funded research results, including

¹ Monya Baker. 2016. 1,500 scientists lift the lid on reproducibility. Nature 533, 7604 (May 2016), 452–454. DOI:<http://dx.doi.org/10.1038/533452a>

² <https://presqt.crc.nd.edu/>

peer-reviewed author manuscripts, data, and code funded by the Federal Government, freely and publicly accessible in a way that minimizes delay, maximizes access, and enhances usability? How can the Federal Government engage with other sectors to achieve these goals?

Beneficial for the preservation and reproducibility landscape would be a mandate by federal agencies not only for FAIR (Findable, Accessible, Interoperable, and Re-usable) data management plans but also guidelines for better ensuring reproducibility and requirement of management plans for software (Or “outputs” management plans that encompass data, software, and other research artefacts). These plans should clearly indicate each funded project’s intention for open-access deposition of research outputs. Where APCs, data or software deposit fees will be necessary to ensure public access, these should be budgeted and referred to in output management plans. Where institutional or disciplinary provision of data curation and repository solutions are essential to output management planning and access, calculation of federally negotiated overhead rates for institutions could begin to explicitly include systems and services that are essential to data sharing and re-use. We should in turn invest in existing platforms and remove barriers between them through streamlined workflows and tighter connections.

How would American science leadership and American competitiveness benefit from immediate access to these resources? What are potential challenges and effective approaches for overcoming them? Analyses that weigh the trade-offs of different approaches and models, especially those that provide data, will be particularly helpful.

Researchers and their parent institutions often respond reluctantly and retroactively to funder and publisher mandates for data and software sharing partly caused by hurdles and additional necessary working tasks. User-centered services like the ones developed in the PresQT project bridge gaps between existing digital library infrastructure, repositories, and software reuse and would ease the tasks for the researchers and librarians. Focusing on interoperability with existing tools and platforms can improve the quality of preserved scientific digital content making it more reusable and reproducible. Encouragement and incentives for the use of FAIR technology or the implementation of an internet of FAIR data and services as described by Strawn in *Open Science, Business Analytics, and FAIR Digital Objects*³ to facilitate discovery of knowledge could be a very effective approach for overcoming challenges to American Scientists in gaining more immediate competitiveness benefits from FAIR research outputs. This balances trade-offs between researchers' time spent on compliance and ensures better funding for outputs management systems. Collaborations focusing on interoperability and usability testing can advance reproducible science, ease data re-use, and improve interoperability of US repository systems nationally and abroad, as well as improve usability of US researchers’ data.

Any additional information that might be considered for Federal policies related to public access to peer-reviewed author manuscripts, data, and code resulting from federally supported research.

³ <http://doi.org/10.23728/b2share.6ceeed13eb6340fcb132bcb5b5e3d69a>

The development of tools for reproducibility and preservation under consideration of usability is generally not a factor in career advancement in academia; typical evaluation criteria include publications and citations, successful proposals and funding, and advised and graduated students. Initiatives around citation of software like FORCE11⁴ as well as existing and starting projects and initiatives such as the the Science Gateways Community Institute (SGCI)⁵ and the US Research Software Engineer (RSE) association⁶ aim at a change of academic culture in this regard. They start to pave the way so that the development of software and science gateway in general and thus, computational methods for reproducibility and preservation are incentivized in academia. Incentives via federal funder policies elevating data and software as research outputs generally beyond publications and citations would accelerate the process of changing academic culture. For example, highlighting software or research data contributors and the impact of data and software as evidence through re-use rather than citation is difficult in SciENCv, the preferred tool for creating biosketches submitted with grants. Improving attention to impact and credit in biosketch sections could elevate important work that is obscured by a publication first assumption.

⁴ <https://www.force11.org/>

⁵ <https://sciencegateways.org/>

⁶ <https://us-rse.org/>



Response to: “Request for Information: Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting from Federally Funded Research”

Submitted by: The Ohio State University [Translational Data Analytics Institute](#) and libraries

Contact: Tanya Berger-Wolf, PhD, TDAI Faculty Director, berger-wolf@osu.edu

Date: March 16, 2020

1. *What current limitations exist to the effective communication of research outputs (publications, data, and code) and how might communications evolve to accelerate public access while advancing the quality of scientific research? What are the barriers to and opportunities for change?*

There are several types of barriers to public access to research outputs:

- 1. Business model of academic publications, either creating a paywall or requiring high fees from researchers for open access publications**

The need for scholarly publications to lock content behind paywalls is one of the main barriers. These journals must stay in business, which means they must collect fees and, ostensibly, create disincentives for not paying for the content in the journal.

One alternative is to move to an open access or pay-to-publish model for all scientific output. However, these are problematic, too. Some require per-page fees that can be beyond the means of individual researchers, especially junior ones. More broadly, per-page or high-fee publishing disincentivizes researchers and scholars to publish in those venues.

There are existing, effective means to make all outputs—publications (peer-reviewed preprint archives), data (data repositories), code (Github)—immediately publicly accessible. We need to continue building, maintaining and fine-tuning those resources and ensuring that they remain free and accessible to the public, as well as valued in the promotion and tenure process.

- 2. Data protection, confidentiality, privacy, and data governance policies may require restriction of data sharing**

There are many aspects of responsible data governance, from human subject confidentiality and endangered species data protection to national security and ethical considerations, that are amplified and complicated by the scale, heterogeneity, and complexity of modern data and the research enabled by it.

- 3. Current lack of infrastructure, expertise, and incentives is a major barrier to sharing data, code, and other digital artifacts of research.**

At the moment, our ability to accumulate, create, and utilize digital artifacts of research and scholarship far outpace our ability to store, archive, catalog, manage, and share them. We need a new version of cyber and information infrastructures that are support

easy addition of (by researchers and scholar) and responsible access (by public) to digital assets. We need expertise to evaluate the risks, ability to execute on the process, and the support for researchers and scholars to interact with the entire system. We need to ensure that it is easy to make data/code available and that doing so counts for promotion and tenure.

2. *What more can Federal agencies do to make taxpayer-funded research results, including peer-reviewed author manuscripts, data, and code funded by the Federal Government, freely and publicly accessible in a way that minimizes delay, maximizes access, and enhances usability? How can the Federal Government engage with other sectors to achieve these goals?*

There are several aspects of the current federal government policy require improved enforcement, some things that are under agencies' control, and many that require broader collaborations in order to improve public access to research and scholarship.

1. **Enforcement of existing policies**

Many Federal agencies already have policies requiring public access to research. For example, all NIH-funded research is by law publicly accessible after a reasonable embargo period, no matter what journal it is published in (see <https://publicaccess.nih.gov>). All Federally funded research should follow the spirit of the NIH model and create a field-appropriate public access policy.

However, even when the policies and laws do exist, the enforcement of these policies has been lagging or hampered. For example, to facilitate access to data, NSF data management plans should be enforced more strictly, and their execution should be ascertainable. The plans should provide a mechanism for a verification of execution.

2. **Actions by Federal agencies**

Grant and other funding budgets should explicitly include resources for supporting facilitation of access to research/scholarship outcomes and artifacts. For example, when funders requests researchers to trim their requested budgets the easiest non-essential costs to eliminate are open access publication fees and data management costs.

3. **Collaborations outside of Federal agencies**

Create a consortium of research organizations, adequately resourced, staffed, and supported by technology (including AI), dedicated to curating and adding metadata to publication, data and code resources automatically. This will enable searchability and make them machine-actionable.

In addition, effort should be made to federate data resources, for example, by linking different repositories or creating semi-universal access and search tools, at least for

data publication repositories, such as Dryad. One possibility would be to create a single access point interface for submissions and a single access point interface for access use that can be used for all Federal agencies. Note that single access points do not preclude multiple actual servers and repositories, etc. However, the multiple agencies need to coordinate so that submitters and consumers see similar submission workflows and access flow interfaces. Current procedures for the various Federal agencies with regard to the OSTP memo of February 2013 are difficult to ascertain. A single page with a user-friendly interface for authors/submitters that can be used for all Federal agencies would be helpful. For example, the first thing users would see is the question: “What agency(ies) funded the research for this publication?” After choosing the appropriate agency(ies), the user would be walked through the given process for an agency, resulting in submission to the appropriate repository. Likewise, a single access point for all Federal repositories (rather than making users go from repository to repository) would be helpful for consumers of the publications, data, and code. Although publications, data and code might be stored in different locations, searching for them could be centralized to one search entry point. Ideally, content in these repositories would be indexed in commercial databases and search engines and users of commercial databases and search engines would be taken to the content in a seamless manner. Alternatively, the Federal Government could provide a single central depository to house data, code and manuscripts.

Invest in open access journals and other sources so that the public has a right to the content.

Create a venue for publishing failed experiments.

- 3. How would American science leadership and American competitiveness benefit from immediate access to these resources? What are potential challenges and effective approaches for overcoming them? Analyses that weigh the trade-offs of different approaches and models, especially those that provide data, will be particularly helpful.*

Science is increasingly collaborative and international, both highly specialized and transdisciplinary, and data- and computation-reliant.

To ensure **replicability, reproducibility, and reliability of research**, we collectively must provide access to research. However, as we are increasingly seeing, in the age of complex, intricate, and big data research, verification even with access to data and methodology is non-trivial. It takes many eyes and many brains and repeated inspection to ascertain and validate research outcomes. Access to research publications, data, methods, process, and outcomes is critical to ensuring trustworthiness of research.

The progress of science relies on scaffolding and building on previous results, including **failed experiments and negative results**. To accelerate scientific discovery, to advance US

research and to gain global competitiveness, we must have functional, actionable, and effective access to research.

Challenges:

- Interdisciplinary disconnect: for example, a new model developed in chemistry might be of great use to someone in infectious diseases, but they would never know of its existence because the search terms are completely different in the different disciplines.
- The trade-off between quick publication/access versus taking the time to make a polished and well tested product for better sharing and future use. Having a service specializing and supporting the polishing and testing of models and code would speed up the publishing and verification process.
- Attribution and compensation for effort when multiple teams work on a project, which is then publicly shared and re-used. Current models of attribution and authorship are vague and ad-hoc.

4. *Any additional information that might be considered for Federal policies related to public access to peer-reviewed author manuscripts, data, and code resulting from Federally supported research.*

The academic **promotion and tenure process** presents a challenge. The rationale and process for opening access to research—whether for taxpayers or for researchers interested in reproducibility (see https://www.aaas.org/sites/default/files/Computational_Science_2011.pdf?p4zdTJ0PQngB8Epg4AZwclwTrj_tl5Fg)—isn't necessarily shared by all researchers or disciplines.

Scientific publishing model is not sustainable (free online journals of ill repute, huge publishing fees for good journals, relying on volunteer reviewers, etc.). Some publishers are charging open access (OA) fees that far exceed their costs (i.e., they are making an additional profit on the OA concept). This includes some large society publishers. Regulations on how these fees are set is a possibility (albeit a genuine quagmire). In general, anything that can break the hold that publishers (commercial and some societal) have on the dissemination of scientific research can only help the process. Publishers absolutely do add value to scholarly communications; however, their practices are centered on profit. This, combined with higher education's willingness to allow publishers and publisher-generated metrics to control a large portion of tenure and promotion decisions, stifles the dissemination of scientific information. Something needs to change, but the government should not be in the business of peer review and publishing. Perhaps instead of funding agencies paying publishing fees through grants, a bulk rate can be negotiated for paying publishing of funded research directly with the publishers.

**Cohen Veterans Bioscience Response to Request for Information (RFI):
Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting
from Federally Funded Research**

85 Fed. Reg. 9488 (February 19, 2020)

**Submitted to the
Office of Science and Technology Policy (OSTP)
and
National Science and Technology Council's (NSTC)
Subcommittee on Open Science (SOS)**

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&

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March 16, 2020

About Cohen Veterans Bioscience

Cohen Veterans Bioscience (CVB) is a 501(c)(3) nonprofit public charity research organization dedicated to fast-tracking the development of diagnostic tests and personalized therapeutics for the millions of veterans and civilians who suffer the devastating effects of trauma-related and other brain disorders. CVB is led by a multi-disciplinary team of clinicians, engineers, bioinformaticians and neuroscientists dedicated to promoting best practices in research for evidence-driven, reproducible, effective solutions..

Introduction and Executive Summary

CVB appreciates the opportunity to respond to this Request for Information (RFI) on Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting from Federally Funded Research from the Office of Science and Technology Policy (OSTP) and National Science and Technology Council's (NSTC) Subcommittee on Open Science (SOS). Federally funded scientific research is the basis for the innovation that drives progress in sectors such as health and the environment. Ensuring that Federally-funded research embodies the principles of open science makes research more transparent, rigorous and efficient; stimulates engagement; and promotes public confidence.

In 2013, Dr. John Holdren, Assistant to the President for Science and Technology and Director of the White House OSTP, in a memorandum entitled Increasing Access to the Results of Federally Funded Scientific Research, directed Federal agencies with more than \$100 million in annual research and development (R&D) expenditures to develop plans for increasing public access to the results of the research they support, specifically scholarly publications and digital data¹. Although the memorandum marked an important milestone in government support for open access (OA) of taxpayer-funded research, including ensuring that all Federally funded research is publically available no less than 12 months after publication, the reproducibility crisis persists and existing infrastructures cannot contend with the scale and diversity of data that are generated to propel scientific breakthroughs. Thus, more can be done to ensure access to and the effective utilization of Federally-funded research outputs, especially data. CVB commends the efforts of the OSTP and NSTC's SOS to accelerate the communication and access to taxpayer-funded research to advance scientific innovation. In our response to the RFI below, we highlight two main recommendations: 1) The Federal government must lead the private and public sectors in defining the policy, data management and governance systems and technical guidelines necessary for the implementation of open data that follows best practices and standard terminologies; 2) Federally funded research data should be made available no matter the outcome of the research to allow for secondary- and meta-analyses.

Response to Selected RFI Questions to Inform the Development of Policies Related to Open Science

1. What current limitations exist to the effective communication of research outputs (publications, data, and code) and how might communications evolve to accelerate public access while advancing the quality of scientific research? What are the barriers to and opportunities for change?

The advancement of digital science thrives on the timely sharing and accessibility of digital data generated from and during the process of conducting research. Traditional research dissemination models allow very little of the research process (e.g., protocols, workflows, tools, data and code) to be publically communicated. An analysis of Data Availability Statements in 2018 found that only 20% of data from two years of PLOS ONE published papers are in a publically available repository². Even if researchers are willing to provide this information, there are few opportunities to make it accessible, and existing research databases lack the interoperability to allow data to be leveraged, shared and combined with other datasets to speed the advancement of scientific progress. When data are deposited, rarely are they properly described and managed with the intention of future harmonization, analysis and sharing across research groups and fields. Breaking down these data siloes is prohibitively costly and many organizations simply do not have the resources to extract the data and put it to other uses. Open science, and more importantly, open data, facilitates scientific collaboration, enriches research, and advances analytical capacity. A potential benefit of data sharing can be exemplified by experiences in the neurotrauma field, where communities are dedicating substantial time and resources to standardize experimental datasets that can be easily pooled across multiple centers and trials and combined and tested for common features present in traumatic brain injury^{3,4}.

Barriers to and Opportunities for Change

a. The need for significant resources to support the technological infrastructure for open data

The research landscape is rapidly changing; the tradition of collecting, analyzing and publishing new data and then abandoning the raw data is being replaced by the push to share and preserve data to broaden its value to disciplines other than the originating one and speed innovation to benefit the greater society. Petabyte-sized datasets are generated daily through new analytical, modeling and visualization techniques. At this scale, data harmonization, data sharing, and data analysis is cost- and time-prohibitive, and significant financial and human resources are needed to set up the computing infrastructure and establish the standards and norms for data curation that make leveraging data to address complex public health and environmental challenges a possibility^{5,6}. For funded research, the costs of initial and sustained data management (including the costs of data curation) are often not included in project budgets or are limited by agency-to-agency variations in the amount of acceptable costs that can be included⁷; the lack of funding for digital curation and complex data analysis and sharing platforms will threaten not only the safety and sustainability of large datasets, but also

the development of the field, for example, through insufficient training programs to prepare and develop a properly skilled workforce to meet increased demand⁸.

Recommendation: The Federal government should take steps to ensure that all Federal agencies develop plans to mitigate the human and capital costs necessary to prepare and sustainably manage the data generated through Federal research grants. Systematic investments by the Federal government into mechanisms for data curation of newly generated and historically valuable datasets, including the education and training of a workforce capable of tackling the complex challenges of the field, will ensure an accelerated transition to data-intensive science. In addition, the Federal government should invest significant resources into redesigning and improving the functionality of public facing open data portals and databases, including promoting public-private partnerships to encourage the third-party development of applications for open science sharing platforms that go beyond siloed research and are capable of the interoperability necessary to solve complex health challenges.

b. The need for common language, definitions, principles and tools to enable data sharing and the need for best practices related to data sharing

Open data requires transparency regarding the sources, generation and combinability of data. This can be accomplished by standardizing the formats of patient-level data to facilitate aggregation and anonymization⁹ and the inclusion of metadata, data dictionaries and documents for meaningful and correct reanalysis¹⁰. Current metadata standards and aligned terminologies are required for clinical trial submissions to the FDA; however, data collected for projects funded by the National Institute of Health (NIH) and other federally funded research do not require data dictionaries and/or for data to be collected or analyzed in a standard format, thereby prohibiting the ability to exchange data (interoperability) across studies and between partners. This lack of standardization has led to wasted time/resources needed for data to be mapped to a data model and the collection of data that is already available.

Recommendation: The Federal government should require data standards for all federally funded research that are guided by the FAIR (findability, accessibility, interoperability and reuse of digital assets) Principles for scientific data management and stewardship. In addition, preferred standards should be based on best practices and must be bound to standard terminologies.

c. Providing incentives for making negative or null research data publicly available and for curating existing data to meet developed best practices

Timely data are essential to accurate research and better decision making, accelerates the speed of research communication and advances innovation and discovery. Traditional journals often favorably publish novel “positive” findings, which leads researchers to keep most research undisclosed (e.g., the file drawer effect)¹¹. Publishing all data discourages redundant data collection and will assist in making all data publicly available. Not only will publishing these datasets save researchers money in the long run, but when mistakes are made, science can self-correct, which will prevent wasted efforts for future studies¹².

Recommendation: Federally funded research data should be made available no matter the outcome of the research. Assembling datasets of various sizes - published and unpublished - that was created by independent investigators produces a more complete understanding of a specific research domain and may have broader impact on the field by: 1) helping other scientists adjust their research plans, increasing their chance of success; 2) preventing skewed scientific knowledge towards statistically significant or “positive” results; and 3) preventing irreproducible or flawed concepts from continuing to receive support from funding agencies.

d. Addressing concerns around legal and contractual obligations, and ethical and data ownership issues

The hesitancy to share data is often linked to legal, ethical and data integrity issues, especially in the healthcare and public health sectors. Many of the policies and practices that underpin the governance of data use and sharing are challenged by individual and institutional concerns about privacy and data ownership or an unwillingness to invest the time and effort into data curation and management in a system that recognizes results publication over data sharing^{13,14}. These challenges are amplified by high-profile stories of the mismanagement and misuse of personal data. Data governance strategies need to balance the enormous potential for public good with the recognition of the potential for specific and general harm.

Recommendation: The Federal government should define the regulatory framework needed to implement open data at the Federal level, the governance of which should be informed by input from the private sector, industry and academic organizations, as well as the publishing bodies, in order to balance the collective and individual benefits, risks, and rights. By focusing on establishing a data management and governance system that considers these complexities, individuals can trust the data management system and its underpinning infrastructure, but requires institutions and regulations that protect individuals and incorporates a level of accountability. The government can use legislation and enforcement powers to define rights to access or use of certain sensitive information and ensure privacy, safety and security of data. In addition, legislative bodies can decide what data should be mandatory for individuals and companies to share and provide guidelines on the collection, management and dissemination of information.

2. What more can Federal agencies do to make tax-payer funded research results, including peer-reviewed author manuscripts, data, and code funded by the Federal Government, freely and publicly accessible in a way that minimizes delay, maximizes access, and enhances usability? How can the Federal Government engage with other sectors to achieve these goals?

The Federal government should engage with other sectors to achieve common goals and be a leading source for access to all data; this will engage stakeholders by fostering growth of innovative businesses, products and services, enhance accountability and manage risks. This practice will align with the large number of public and private funders that are increasingly mandating open sharing of research, including the Netherlands

Organization for Scientific Research, CERN, UNESCO, Wellcome Trust, the Bill & Melinda Gates foundation¹⁵ and the National Science Foundation, which require applicants to provide details of the research products, including data and software as well as a data management plan. The United States allocates approximately \$41.7 billion annually to the NIH in medical research (\$140 billion annually in research and development; R&D). Requiring researchers to share data from all aspects of research will: 1) improve the quality of research and our understanding of disease and medical treatments; 2) enable the review of results from individual trials; 3) assist researchers in validating the result; 4) help researchers understand why trials fail so as to avoid future futile efforts; and 5) allow secondary analyses of previously published data that might lead to different conclusions from those drawn by the original investigators¹⁶.

3. How would American science leadership and American competitiveness benefit from immediate access to these resources? What are potential challenges and effective approaches for overcoming them?

a. Enable economic growth

While the United States continues to perform the largest share of global R&D, growth of scientific and technological knowledge (S&T) in other nations has outpaced that of the United States and are poised to overtake the United States in capacity. Open data can provide significant value to the economy. A recent study commissioned by the Open Data Institute found that across all core public sector data assets, open data will provide 0.5% of GDP more economic value than data users have to pay to access. Indeed, if the government began charging to access data that are currently open, up to half of the current value would be lost due to fewer services being built or established services being more expensive⁹. If the government required open access to publications and data, it would enable value by improving decision making, provide context to informing these organizations in designing new products and services and improve accountability of data, all of which could lead to a potential \$3 trillion value, as estimated by the consulting firm McKinsey¹⁰, and solidify the United States share of global R&D.

b. The government's role to strengthen public surveillance of health and environmental public health concerns

The government is ideally positioned to spur value creation by becoming the standard open data provider. In health care, open data can help patients manage their own health, avoid illness and get better treatment. This occurs in a number of ways: 1) the availability of deidentified (anonymized) patient-level data from clinical trials permits the verification of original results; 2) readily findable and available data facilitates secondary analyses, mitigates duplicate trials, and will shield participants from unnecessary risks⁹; 3) the availability of public health data and ensuring it is easily accessible to the appropriate authorities - especially during disease outbreaks such as the Ebola and Zika virus epidemics or the current outbreak of COVID-19 – will inform government and public entities for better decision making and expedite the creation of health-related products²⁰; and 4) open data will increase real time effective knowledge or evidence-based translation of proven validated approaches and will enhance guided health financing and capacity development²¹.

Summary of Recommendations

Sharing and preserving data are critical to advancing scientific findings, will allow for better use of existing resources and will create new products and services, which can lead to an immense benefit on the economy. Stakeholders of all domains, including patients, patient advocacy groups, researchers, journal editors, policy makers and the healthcare industry in general want to be able to search and find what others have done, whether successful or not, and have the ability to perform secondary analyses. This requires data to be made available in a standardized format that includes metadata, data dictionaries and documents for meaningful and correct reanalysis⁴. Leading the public and private sectors, the Federal government is positioned to work with leadership from healthcare, data science and regulated clinical trials to ensure quality harmonization that will support adoption of preferred standards and will ultimately benefit patients.

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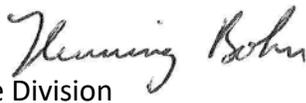
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Henning Bohn, Chair
Debra Blake, Executive Director

DATE: March 12, 2020

TO: Lisa Nichols, Assistant Director for Academic Engagement
Office of Science and Technology Policy

FROM: Henning Bohn, Chair 
UCSB Academic Senate Division

RE: **OSTP Request for Information: Public Access to Peer-Reviewed
Scholarly Publications, Data and Code Resulting from Federally
Funded Research**

Open access to scholarly research publications has been affirmed as a fundamental policy at the University of California, Santa Barbara (UCSB). UCSB's Academic Senate Committee on Library, Information and Instructional Resources, in coordination with the UCSB Library administration, has taken the lead in promoting open access research publication. We are aligned with systemwide UC faculty in this aim, and subscribe to the 2013 Academic Senate Open Access Policy and the Academic Council's endorsement of *Declaration of Rights and Principles to Transform Scholarly Communication*. UCSB faculty, aligned with faculty throughout the University of California system, are critical leaders of UC's pursuit of open access transformation.

With respect to the OSTP Request for Information on public access to scholarly publications, UCSB's Faculty, through the Santa Barbara Division of the UC Academic Senate, support a zero-embargo policy for author-accepted manuscripts. Such a policy will help further UC's mission to serve society and provide benefits through the transmission of research and knowledge.

We thank you for considering this request.

cc: Debra Blake, Executive Director, Academic Senate

American Anthropological Association Response to the Request for Information: Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research

The American Anthropological Association (AAA) has been publishing scholarly content since 1889. Today, our publishing portfolio (AnthroSource) consists of 23 peer-reviewed titles, a popular news magazine, an open access compilation of previously published materials, and a free, publicly accessible repository of preprints and conference materials. The publishing portfolio is guided by four core values—quality, breadth, accessibility, and sustainability—each of which is just as important as the others. The AAA is concerned that the Request for Information (RFI) by the White House Office of Science and Technology Policy with its emphasis on accessibility of published scholarship could significantly erode our portfolio’s quality, breadth of content, and especially its sustainability. We find that the “one size fits all” approach advocated by the OSTP fails to recognize the very significant variability in funding support for open access publication across the scientific disciplines, and even within the disciplines of the social and behavioral sciences.

All AAA journals offer a hybrid open access option. Between 2015 and 2018 more than half of AAA’s journals (12 out of 21) published at least one article as hybrid open access. Our association’s definition of hybrid extends beyond traditional and gold open publishing options to include various other avenues of scholarship. For example, we ungated a substantial portion of back content and have developed a discipline-specific open access repository.

AAA regards the future of research as open, and has been interested in moving open access forward via a repository for some time, first with its 2012 partnership with the Social Science Research Network (SSRN), which resulted in the Anthropology and Archaeology Research Network. After SSRN’s 2016 acquisition by a commercial venture, the AAA looked elsewhere to launch a new repository for anthropology (and anthropologists) across the globe. OARR: Open Access Research Repository has a global and discipline-wide advisory group to ensure the repository is meeting the needs of anthropologists everywhere, including those in practicing and applied settings.

Although our association’s AnthroSource portfolio is available as a AAA member benefit as well as by institutional subscription, the AAA seeks to expand the availability of content in a sustainable way. Content that is greater than 35 years old (currently 1984 and older) is completely open access through AnthroSource. Historically black colleges and universities, tribal colleges, as well as Brazilian and Palestinian institutions are provided complimentary access to the entire AAA portfolio, a program that the association is looking to expand even further. Additionally, through our publishing partner, AAA’s content is included in [Research4Life](#), which provides complimentary or low-cost access to institutions in developing economies.

To further open up content, in 2013 AAA launched *Open Anthropology*, a curated collection of new and archive content on a singular theme, which is published three times a year and content remains open for one year from publication. AAA also periodically opens articles when there is a broad interest beyond the

traditional anthropology community, such as “[Signaling Safety: Characterizing Fieldwork Experiences and Their Implications for Career Trajectories](#),” by Nelson et al.

In addition, AAA has a liberal permissions policy as part of its author agreement. Authors can currently use the article for educational or other scholarly purposes at the author's own institution or company; post the manuscript draft post peer-review on the author's personal, institutional or company website; post the manuscript draft post peer-review on a non-commercial, discipline-specific public server; and publish the article or permit it to be published by other publishers, as part of any book or anthology, of which they are the author or editor, subject only to their giving proper credit to the original publication.

Although the OSTP continues “to explore opportunities to make the knowledge, information and data generated by federally funded research more readily accessible,” with which the AAA is in complete agreement, some of the principles are problematic to the health of anthropological research and researchers in general.

The proposed requirement would limit an author’s choice—they must publish in a journal that has an open access option. However, all of the AAA’s journals, some of which are ranked highly, as noted before, offer hybrid open access options across the entire portfolio, which covers the many subfields of anthropology. However, there is very little funding available in the social sciences and with article publishing charges (APCs) averaging \$2500, this is not a sustainable option for anthropologists. Additionally, it is often the case that federally granted research funds cannot be used to pay these APCs. We are concerned that the OSTP requirements would limit the array of content and diversity of voices within the AAA portfolio, a threat to the AnthroSource core value of breadth.

In sum, the AAA feels the current proposal from OSTP is too broad to be applied effectively for all disciplines and is harming those fields outside of the biological and physical sciences. The association requests further examination and refinement to ensure all disciplines are considered, particularly the humanities and social sciences.



SUBMITTED BY:

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Response to Request for Information
(RFI) on Public Access to Peer-
Reviewed Scholarly Publications,
Data and Code

SUBMITTED TO:

Office of Science and Technology Policy
National Science and Technology Council

RFI Response: Public Access

March 16, 2020

Via email to: Lisa Nichols

Assistant Director for Academic Engagement
publicaccess@ostp.eop.gov

1.0 CORPORATE BACKGROUND

AEM Corporation is a diversified services company that primarily supports federal agencies and Fortune 500 clients. It employs leading experts in data management and analysis; research, development, and evaluation; engineering; technical assistance; information technology; and operations management. Founded in 1986, AEM has leveraged these strengths to become one of America's fastest-growing private companies.

Website Address: www.aemcorp.com

2.0 REQUEST FOR INFORMATION (RFI) COMMENTS

We appreciate the opportunity to comment on the Public Access RFI. We agree with the importance of increasing access to unclassified published research, digital scientific data, and code supported by the U.S. Government as a means of accelerating knowledge and innovation.

AEM's expertise and most relevant work in the area of ensuring broad public access to peer-reviewed federally funded research relates to our work across the disciplines of education, engineering, and transportation. We believe that it is beneficial to provide information on two research-related programs that we support at the U.S. Department of Education: the Education Resources Information Center ([ERIC](http://eric.ed.gov)) Program and What Works Clearinghouse ([WWC](http://www.ies.ed.gov/wwc/)):

- ERIC is the widely searched online repository of 1.8 million bibliographic and full-text records of education research. ERIC has been providing public access to journal articles, research reports, conference papers, and other scholarly materials since 1966.
- The What Works Clearinghouse reviews existing research on different programs, products, practices, and policies in education with a goal to provide educators with the information they need to make evidence-based decisions.

Both of these programs provide critical support to making federally funded publications, data, and code openly accessible to all potential users of this information. Our responses to questions posed in the RFI are provided below.

2.1 What current limitations exist to the effective communication of research outputs (publications, data, and code) and how might communications evolve to accelerate public access while advancing the quality of scientific research? What are the barriers to and opportunities for change?

Effective communication of new research is hampered by pay walls implemented by many peer-reviewed journals. Many journals limit access to subscribers. Additionally, searching each journal for articles on a subject is an onerous task. For this reason, access to journal articles is often included in subscriptions to large, third-party databases and the cost of scholarly databases has grown unwieldy. Universities are the primary subscribers to databases and, as public funding for universities decreases, many are forced to limit their subscriptions to scholarly databases.

Given that the goal of scholarship is to produce and disseminate knowledge, many universities have begun to adopt Open Access policies. Open Access policies reduce the monetary barrier to peer-reviewed journals by publishing scholarship by university faculty and researchers in a manner

that is free and accessible by the public and other researchers. While this lowers the barrier of effective communication, it does not entirely eliminate the barrier. Finding articles that are available via open access policies remain limited based on how the university catalogs them. Databases such as ERIC significantly reduce these barriers in the field of education. Replicating ERIC's open access and searchability across other areas of scholarship would significantly reduce barriers to effective communication of research.

2.2 What more can Federal agencies do to make tax-payer funded research, including peer-reviewed author manuscripts, data, and code funded by the Federal government, freely and publicly accessible in a way that minimizes delay, maximizes access, and enhances usability? How can the Federal Government engage with the other sectors to achieve these goals?

2.2.1 ERIC

We present [ERIC](#) as model program for disseminating research in a way that reduces barriers to public access. ERIC is sponsored by the Institute of Education Sciences ([IES](#)) in the U. S. Department of Education (ED). ERIC is focused on providing access to education research, including the full text of federally funded scientific publications. As the prime contractor for ERIC, AEM oversees the selection and acquisition of journal articles, reports, and other education research content for database inclusion; creates the metadata in a timely fashion for the records that underly the ERIC website; provides inputs for technical improvements and increased usability; and communicates with ERIC users and other stakeholders.

ERIC was founded in 1966 as the response to a similar question posed by this RFI – what is the best way to provide public access to education research, including government-developed reports? Since that time, ED has built an education-focused database that incorporates the critical literature in the field, including 1.8 million records of curated journal articles, research reports, conference papers, white papers, as well as federally funded research. Providing open access to as much full text as possible has been a hallmark of ERIC throughout its history. Today there are nearly [400,000 records with full text](#) available in ERIC, including more than 1,300 [federally funded grantee and contractor reports](#) that have been uploaded to ERIC since 2013.

ED has continuously built on ERIC's model of dissemination. This ongoing commitment to operations and system improvements has made ERIC one of the most well-known and frequently used education databases in the United States and around the world. The ERIC online collection is searched 12 million times each year through the free ERIC website at <https://eric.ed.gov> and its metadata is downloaded and made widely available to an even broader audience by both commercial and non-profit third party information providers.

All IES-funded research studies are required to be in ERIC, with the full text of these reports available within one year of publication. This requirement is part of the [IES Public Access Policy](#) which was implemented in response to the OSTP memorandum directing Federal agencies to prepare a plan for improving public access to federally funded research. The IES policy drives

quality and innovation in education research by requiring IES-funded work to be made freely available to the public. The requirement facilitates the creation of high-quality research by contributing to the pool of carefully refereed resources available for use.

ERIC makes taxpayer-funded research, including peer-reviewed author manuscripts, data, and code funded by the federal government, freely accessible in a way that minimizes delay, maximizes access, and enhances usability. ERIC facilitates submission of and access to funded research by providing a variety of key features, including:

- The publicly available ERIC website at <https://eric.ed.gov> which provides access to the collection and helpful research tools.
- Links to [full text](#) in ERIC search results, including the full text of all available peer-reviewed funded manuscripts and datasets.
- Rich metadata in each ERIC record that aids in resource discovery, including links to additional resources for IES-funded publications.
- An easy-to-use [online system for submitting grantee and individual research reports](#) to ERIC.

ERIC's website tools, such as an intuitive search feature, the ERIC Thesaurus, an API, and other tools support effective information discovery, use, and sharing of research. ERIC search is the most prominent and frequently used feature on the [ERIC website](#). ERIC implemented an intuitive search engine to make it easy for all searchers, from novice to expert, to find the resources they want in the collection. [Search filters](#), found on the left side of the search results page, can help narrow results to records that are most relevant to a user's search topic. A key category of filters are the ERIC descriptors that indicate the main subjects of each record in ERIC. Descriptors are found in the [ERIC Thesaurus](#) which is integrated into the search feature to provide easy access ERIC's controlled vocabulary. As a recognized authority on the language of education, the thesaurus is widely replicated and used by private industry, academic institutions, and organizations that have a focus on education research.

Website tools that enable the use of ERIC's metadata are the ERIC API, Download feature, and citation management tools. The [API](#) was developed to support researchers, developers, and commercial and non-commercial providers of ERIC data. It provides direct access to ERIC's metadata and enables flexible search and export of data to a variety of formats and software programs. The [Download](#) feature allows users to download ERIC's posted metadata and thesaurus files. The Thesaurus file has over 11,760 descriptors and synonyms in education, their scope notes, related terms, and other information. A third tool, citation support, allows users to email search results or export results to a format supported by most citation management software.

To aid in information discovery, each record in the ERIC collection is populated with rich metadata to help researchers find and evaluate materials for quality, rigor, and relevance. ERIC records include routine bibliographic data (title, author, publication date, source, abstract, etc.) and other metadata fields that aid effective research, such as:

- Tags that help users identify [Grantee Submissions](#). Embargoed manuscripts are made available in [full text one year after publication](#) in a peer-reviewed journal.
- Links to datasets, [funding information, and publication details](#) about the work IES funds and publications it produces.
- Designation of [peer-reviewed status](#) as an indication of quality. ERIC has a [well-defined process](#) for applying the peer-review flag to ERIC records.
- Limiters to help narrow search results based on descriptors, [identifiers](#), and other indexing elements.
- [What Works Clearinghouse ratings](#) for reviewed reports and links to the WWC Study Review page on the IES website.

Lastly, ERIC provides a [Grantee and Online Submission System](#) designed to facilitate grantee and contractor compliance with public access requirements while minimizing user burden. The system walks grantees through a limited series of screens for submitting work online and provides support tools for assistance, including [grantee FAQs](#) and [short tutorials](#), if needed.

In addition to system features, ERIC has also put into place processes and procedures that ensure the timeliness and quality of the research available online, including federally funded research. The ERIC team indexes over 4,000 new records each month. ERIC is committed to supporting the nation's research investment by providing timely access to full-text federally funded work.

2.2.2 *What Works Clearinghouse (WWC)*

The What Works Clearinghouse (WWC) is another example of how the U.S. Department of Education (ED) is communicating research outcomes with researchers and the broader public. The WWC evaluates peer-reviewed research through a systemic review process that rates research based on whether it meets a set of design standards. The goal of the WWC is to show what works in education, connecting the research community directly to practitioners looking for evidence before adopting an intervention. In several competitive grants funded by the Department of Education, the evaluation designs must be framed with the goal of meeting What Works Clearinghouse standards. In this way, there is intended to be a direct connection between research funded by ED and also ED dissemination mechanisms.

One of the ways that the WWC increases the usability of publicly funded research is through the publication of Intervention Reports. The WWC Intervention Reports are summaries of specific programs, outcomes or practices. Through the publication of these reports the WWC is able to connect publicly funded scholarship back to the community of practice. Intervention Reports are able to translate peer-reviewed scholarship into digestible formats for practitioners. By providing effectiveness ratings and descriptions of the studies and samples, researchers are able to determine whether a specific intervention might work for their student population. Through the integration with ERIC, the WWC links easy to read Intervention Reports with the original scholarship. Connecting peer-reviewed scholarship in ERIC with Intervention Reports within the WWC strengthens the relationship between research and practice.



16 March 2020

Lisa Nichols
Assistant Director for Academic Engagement
Office of Science & Technology Policy
publicaccess@ostp.eop.gov

Subject: RFI Response: Public Access

Dear Ms. Nichols:

As elected member leaders of the Society for Investigative Dermatology (Society or SID), a non-profit scientific society that partners with a corporate publisher to publish the *Journal of Investigative Dermatology* (*Journal* or *JID*) and editors of *JID*, we write to express our concern about a proposed executive order that would require immediate open access publication of all reports arising from US government-funded research. We read the November 2019 Government Accountability Office report (GAO-20-81) with interest, and we welcome the opportunity to comment on this document.

The SID advances scientific discovery in the field of skin health and disease, with the ultimate goal of improving the health of patients with skin disease. The SID builds its international community of member scientists through mentorship, education activities, travel fellowship awards for early career researchers, research awards, meetings, speaking opportunities, and the publication of peer-reviewed journals. These activities (including, importantly, affordable membership and meeting registration fees) are supported in part through income from *JID* subscriptions.

The scientific publishing industry has evolved over several hundred years to be one of the most reliable and trustworthy sources of information for both scientists and the public, and it offers multiple viable models by which authors may choose to publish their work. The publishing enterprise is stable, effective, and efficient. Inherent to its success is the peer review

and selection of scientific works for publication for particular audiences, activities that rely on coordinated scientific expertise, established codes of ethical conduct, the production of high-quality publications, intellectual work contextualizing those publications, and -- beginning in the late 20th century -- the perpetual digital maintenance of these publications.

The willingness of individuals and institutions to pay subscription fees to access *JID* content speaks to the value of the product the *JID* offers. The return to the Society for this activity is integral to the Society's continued operation and perhaps its existence. (Of note, 55% of institutional and member subscribers are located outside the U.S.) The *JID* already offers back issues of its content on a 1-year rolling basis in compliance with the 12-month embargo window in place under the 2013 legacy regulation on the publishing market. This is the only period during which the *Journal* and its publisher may garner income from all its editorial, peer-review, production, and publishing activities. If this slim window of opportunity is closed by mandating the immediate free distribution of *Journal* articles, the *SID* and its publisher may be unable to continue to maintain our high-quality peer review or invest in innovation, competitive product development, or technical capabilities. Further, altering the business model that serves professional societies and scientists so well potentially jeopardizes not only the scientific publishing industry, but also the educational and research activities of the non-profit organizations that journal-related revenues support, which could negatively affect American science leadership and competitiveness.

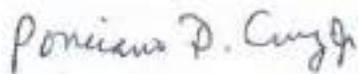
Senator Thom Tillis, in his 12-12-2019 letter to Secretary Ross and Director Mulvaney, describes the costs associated with publishing, including "the need to review and select the articles worthy of publication, manage the substantial peer-review and editing process, adding graphics or imbedded images, and ongoing curation." Under the current publishing system,

these costs (and those of many other activities, as outlined by Kent Anderson in his article “102 Things Publishers Do” -- <https://scholarlykitchen.sspnet.org/2018/02/06/focusing-value-102-things-journal-publishers-2018-update/>) are borne via journal subscriptions. By contrast, author-funded publication relies solely on publication charges to fund all editorial and publishing activities, which can lead to the undesirable effect of lowering publication standards in favor of gaining more income. This business model has opened the door to predatory publishers, and it remains questionable whether it can adequately support the burdensome costs of state-of-the-art publishing requirements. In addition, publication fees will likely be derived from taxpayer-supported government grant funds that are intended to support scientific research, rather than through market-generated income as is the case under the current model.

As stated in the letter of 12-18-2019 to the Administration signed by 140 publishers and non-profit scientific societies, publishers make no claim to the research data resulting from federal funding. Without any government mandate, journals support this activity through their policies requiring data availability statements and links to such data through published material. Yet, government agencies report much less progress in meeting the goal of making research data accessible than they do in making publications accessible. It is notable that the NIH reports having fulfilled the 2013 Directive to make the reports of US government-sponsored research fully accessible after a 1-year embargo. This success was facilitated by publishers’ and journals’ cooperation and through the coordination of systems and journal policies to ensure the deposit of such articles in PubMed, as indicated in the November 2019 GAO-20-81 report (p. 29, 37, 41). Indeed, the US government relies on publishers to provide access “in perpetuity” (p. 37) in support of this goal. Such consistency may be undermined if the proven business models supporting this industry are jeopardized.

In conclusion, *JID* already allows immediate access to all accepted scientific articles through institutional repositories and PubMed, in addition to providing access to final, copyedited, and typeset articles after a 12-month embargo (in accordance with the 2009 Omnibus Appropriations Act). We would argue, therefore, that our journal and the publishing industry have enabled the US government to fulfill the access goals of the 2013 memorandum on “Increasing Access to the Results of Federally Funded Scientific Research” and that, at this point, energies related to this executive order might be better targeted at ensuring access to datasets resulting from US government-funded research, an area that has seen much less progress and which does not threaten to damage the publishing industry and non-profit professional societies.

Sincerely,



Ponciano Cruz, MD
President, Society for Investigative Dermatology



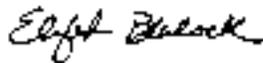
Richard Gallo, MD PhD
Secretary-Treasurer, Society for Investigative Dermatology



Nicole Ward, PhD
Secretary-Treasurer, Society for Investigative Dermatology



Mark C. Udey, MD PhD
Editor, Journal of Investigative Dermatology



Elizabeth Nelson Blalock
Managing Editor, Journal of Investigative Dermatology

Lisa Nichols
Assistant Director for Academic Engagement
Office of Science and Technology Policy

March 16, 2020

Dear Dr. Nichols:

Re: [Request for Information: Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research](#)

The UC Davis Library promotes broad public access to the scholarly work of the campus community, and encourages UC Davis authors to participate in the wider dissemination, higher visibility, and accelerated discovery of knowledge that Open Access publishing offers.

In alignment with the University of California's [2013 Academic Senate Open Access Policy](#) and the [2015 Presidential Open Access Policy](#) the UC Davis Library leads and directs Open Access initiatives in partnership with faculty, students and staff on campus as well as with partners in the University of California system, and on the national and international level.

UC Davis Library strongly supports a zero-embargo policy for peer-reviewed author accepted manuscripts from federally funded scientific research and affirms that such a policy represents a step forward, in line with its mission to serve society and to provide long-term benefits through the transmission of research and knowledge. Eliminating the waiting period (most commonly 12 month) would allow researchers and the public to access taxpayer-funded research, including data, articles and computer codes immediately upon publication. To paywall or delay publications slows down innovation and the creation of new knowledge that in many fields (e.g. health sciences, agriculture, engineering) immediately benefits all citizens.

UC Davis Library is committed to supporting scholarly societies in the transition to open access publishing models and is aware of the challenges this transition creates. In collaboration with scholarly societies UC Davis Library, individually and together with other UC libraries, is working on initiatives and agreements to establish new Open Access business models. A zero-embargo

requirement for publications, data or code from federally funded research will provide further incentives for scholarly societies to engage.

The immediate availability of research funded and published with federal support is fundamental to fulfilling the full potential of public investment in science. It will make information and data more readily accessible to students, clinicians, businesses, entrepreneurs, researchers, technologists, and the general public who support these investments as a means to accelerate knowledge and innovation.

We thank you for considering this request.

Sincerely,

Michael Ladisch

Scholarly Communications Officer

University of California Davis, Library

100 North West Quad

Davis, CA 95616-5292

16 March 2020

To Lisa Nichols, Assistant Director for Academic Engagement, OSTP:

Response to Request for Information: Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research

1. Introduction

The US research sector is among the best in the world and a driver of innovation and economic growth. The academic publishing industry adds value to the research sector through coordination, dissemination, and quality control, but does so by restricting access to the underlying research. In this comment, we draw on the fields of industrial organization, innovation, and public economics to consider ways to increase the availability of US research while maintaining the valuable roles that academic publishing provides. We encourage the Government to introduce a corrective tax on academic publishers, increasing in the amount of time that they keep an article out of the public domain. We see such a policy as a natural middle ground between the status quo and ‘gold’ open access.¹ Furthermore, we feel that any policy should be rolled-out incrementally, with continued evaluation and feedback from all stakeholders.

The ideal scenario is maximised production of high-quality research made freely available. The status quo fulfils the former, but fails on the latter. It fails because coordination and quality control are costly. The Government currently incentivizes academic publishers to provide these value-added services by granting property rights to the underlying research. Publishers use their property rights to build market power,² markup prices, and extract inordinate profits from researchers. Since 1985, the average price of an academic journal has risen more than 215 percent—four times the average rate of inflation. We see profits as arising primarily from three sources. First, journals have a low cost of operation. The costs of publication and typesetting are low, and skilled labor—researchers, editors, referees, etc.—frequently provide their services below the market rate.³ Second, there is pooled and inelastic demand for journals within research institutions: all researchers need journal articles for their work. Third, journals rely on accumulated reputation to convey quality, which creates barriers to entry.

¹ ‘Gold’ open access describes open access to the final research article at the time of publication. Henceforth, we refer to this as open access. See Willinsky (2009, appendix A) for other types of open access.

² Global information analytics company Elsevier is the dominant player within the scientific publishing market, with a market share almost equal to that of the next three companies combined (Thomson Reuters, Springer, Wiley). In 2010, Elsevier reported profits of 724 million GBP, with a 36% margin – higher than Apple, Google, and Amazon in the same year. By 2018 Elsevier’s profits had grown to 900 million GBP. The top five publishers account for 50% to 70% of all publications; Elsevier publishes 25% of scientific articles. See also Dewatripont et al. (2006).

³ See Armstrong (2015).

Inflated prices mean that there are some individuals who would benefit from access to research but are unable to afford it. The present challenge is reconciling improved access with publishers' operations. Ideally, the Government wants quality publications priced at their (low) marginal cost, essentially open access. However, if academic publishers find themselves without their primary revenue stream, we worry that they will lose their incentive to coordinate and regulate the quality of research. Publishers could increase their prices or exit the market altogether, shifting the costs of coordination and quality control onto individual researchers. A sudden mandate of open access could therefore damage basic science, innovation and the economy.

Our comment is structured as follows. We begin by analysing the potential impact of moving to total open access for federally funded research (i.e. targeting the costs of access). This provides a benchmark for thinking about the trade-off between quality and access. We finish by proposing corrective taxation as a more efficient, lower risk alternative.

2. Benchmark: Mandated Open Access

With the goal of broad public access to taxpayer-funded research, an intuitive policy response is mandated open access to taxpayer-funded research. This option has been heatedly debated, with publishers and research libraries taking polarized stances. The policy has a satisfying logic to it: those who ultimately fund the research (the taxpayer) have the right to share in the reward (the journal article).

Research articles are, by and large, published behind paywalls with significant costs attached to article and journal purchases. Currently, most federally funded research is held behind such paywalls for a 12-month period post-publication. Paywalling journal articles obviously places a constraint on the information that taxpayers paid to produce. This feels unjust and could plausibly constrain innovation from students, clinicians, entrepreneurs, researchers, technologists and others that builds on existing but private knowledge.

From a welfare perspective, any policy must account for how binding this constraint is across different taxpayers. Limited journal access is a serious constraint to a scientist engaged in research on a daily basis, but it is not clear that many others would incorporate journals directly into their daily lives. This is not to say the information could not be valuable. Rather there are existing mechanisms, such as scientific journalism, that better distill and communicate research findings to a range of individuals.

Even if the Government does mandate open access, we urge temperance in the rollout. Rather than shocking the market with an abrupt shift, we think it makes more sense to slowly phase in regulation over a number of years. If the goal is to remove the paywall, then we think the length of the embargo should be decreased incrementally. This will allow the publishing industry time to respond and give the regulator a chance to reconsider if the policy rollout has unintended consequences.

Unable to garner subscription revenue under open access, publishers will draw on other funding sources. A key candidate is an increase in the article processing charge (APC) levied on researchers who submit to

journals. Were this to happen, academic publishers would still extract rents from research institutions and, by proxy, federal funds. It would, however, shift costs within research institutions from libraries to research producers. This could accentuate the implicit trade-off facing a researcher of either funding further early-stage work or submitting finished research to a journal, a dilemma that stymies either the production or dissemination of valuable research. Given the use of journal publications as a barometer of productivity and value in academia, higher APCs could also exacerbate inequalities in science.

Were the Government to mandate open access for the research it funds, how might this policy be assessed? We see little scope for randomization in this policy rollout. The key market participants are journal publishers, and so the policy should be randomized over these. In theory, randomizing guarantees an even distribution of publisher characteristics to treatment and control. But with many characteristics and few publishers, any particular random assignment is unlikely to be balanced. Randomized policy without balance is less useful for impact evaluations. Most importantly, randomizing over publishers is unethical as it could effectively determine which stay in business.

3. Policy Alternative

This section outlines a more efficient policy to expedite access to research without jeopardising academic publishers. To create an incentive for academic publishers to publicly release articles earlier, we suggest a corrective tax to be assessed each day an article remains out of the public domain. We briefly discuss how price ceilings can keep prices low elsewhere in the system. Finally, we suggest the tax revenue be used to fund science communication to the general public.

3.1 Corrective taxation

One of the most powerful corrective tools in economics is Pigouvian taxation.⁴ If a participant in a market can take an action that affects both themselves and others (an externality), then the effect on others should be taxed. This way each participant makes the best decision for themselves accounting for any adverse effects on others. In the context of academic publishing, publishers have a profit motive to keep articles paywalled. Their decision imposes a negative externality on others who would read and benefit from an article but are unable to access it due to the publisher's decision. To correct the externality, the Government can tax journals for the time they keep an article behind a paywall to encourage publishers to publicly release articles more quickly.

The Government already caps embargoes on federally funded articles after 12 months. We view such policies as highly discontinuous attempts at corrective taxation: placing no tax on publishers if an article is published before the maximal embargo and an arbitrarily high tax on publishers if it is published after. This creates an incentive for publishers to release articles at the Government cap and to raise prices elsewhere. Continuous corrective taxes, by contrast, create a sustained incentive for a publisher to release

⁴ Many high-profile regulations are Pigouvian taxes: "Sin" taxes on alcohol, cigarettes, sugary beverages, etc. (Alcott, Lockwood, and Taubinsky 2019); Congestion Charges (Martin and Thornton 2018); Gasoline taxes (Knittel and Sandler 2013); Greenhouse emissions (Revesz et al. 2017).

an article earlier, rather than at a cap. The current 12-month embargo policy has increased research without harming academic publishers. We take this as evidence that the market could accommodate a corrective tax with strong, continuous incentives to further accelerate the release of academic research. To the extent that the Government and the publishing industry might want a more efficacious, but still moderate policy, Pigouvian taxation may be a mutually agreeable middle ground.

It is also important to note that the tax need not be totally linear. The marginal rate in the US income tax adjusts with an individual's income. A similar mechanism could work here. Since it seems more damaging to keep an article out of the public domain for one decade than for one year, it also seems that the marginal corrective tax rate for keeping an article out of the public domain should increase with the time that the content is held behind a paywall. If scientists have an urgent need to access the latest research, then there will still be an incentive for their institutions to pay subscription fees. However, individuals and other institutions with a less urgent need should be more willing to wait. Our vision of the corrective tax puts low marginal rates early on—so that publishers may still earn subscription fees from the institutions with the highest demand for research—but the increasing marginal rate ensures that publishers will eventually find it profitable to freely release (or sell at a decreasing price) articles to all organizations.

We are not overly worried about journals increasing prices elsewhere in the system—for subscription prices or APCs—in response to such a tax. Journals likely already set these prices to maximize their large profits. If they adjust these prices in response to a tax, then it means that they could have been earning larger profits before the tax went in place. For similar reasons, while steep corrective taxes might decrease subscription revenue for publishers, it seems unlikely that this will lead to large increases in APCs. If publishers could charge higher APCs, we see no reason why they would not already be doing so. A more pressing concern is that demand for subscriptions falls so quickly that publishers become insolvent. Here, the tax has been set too high, and the Government has removed the incentive for a publisher to solve the coordination and quality control problems. Conversely, if journal publishers maintain high profits under the tax, we view it as being set too low. To mitigate the risk of overshooting either way, we recommend incremental change.

If there is sufficient concern over publishers increasing prices in response to corrective taxation, price ceilings are a natural complement. The Government can cap subscription prices or APCs at what it deems acceptable levels. Since there are markups and market power in academic publishing, there is scope to bring down prices before journals drop into the red. We are not worried about the classic supply shortage argument with respect to price ceilings. Although demand for journal articles may respond to price, publishers can supply essentially any number of electronic copies of an article at zero extra cost. Thus, so long as the ceiling is not set so low that publishers fold completely, price ceilings should be able to bring down subscription prices and APCs.

3.2 Implementation

Both the corrective tax and price caps will need to be set by the Government. These are difficult quantities to estimate and their proper calibration will require significant time and resources.

The most technical challenge is designing the tax schedule. The theoretical answer is that the schedule of taxes across time should equal the social damage done by foregoing public access to a paper for one more day. This is economically sound but difficult, if not impossible, to calculate. To help inform these calculations, we recommend an analysis of research production following the negotiations breakdown between the University of California system and Elsevier in 2019.⁵

To minimize the effect of statistical errors in setting the tax schedule, we emphasise our recommendation that an initial, increasing corrective tax schedule be phased in slowly—on the order of two to five years—and with continual evaluation and input from stakeholders. This reduces uncertainty over the market structure for academic publishers, who will be able to make business decisions to best respond to the policy. If it looks like the initial tax schedule was set too high and publishers begin to act unexpectedly—price gouging, shutting down, etc.—then there is ample time for reevaluation and adjustment. Finally, if nothing appears to have changed at the end of the phase-in period, the tax can be increased incrementally.

Our tax proposal would shorten the length of time most articles are kept out of the public domain but not eradicate it. Open access would, by and large, be ‘delayed’. As outlined above, we do not believe that paywalls on many research articles constrains most taxpayers. To improve access for the general public, we view Government investments in scientific communication and reporting as a more effective tool than mandated open access. The value or scope of a scientific idea is rarely embodied in a single paper. And most scientific papers are difficult for academics outside the field to read, much less interpret, without the help of broader field-specific context. Focussing on expanding the corps of journalists with the requisite training to explain and critique frontier science seems a more effective route. Improvements in scientific communication could be funded without increasing the federal budget via the revenues from the corrective tax we suggest.

We appreciate the opportunity to comment.

Adam M. Rosenberg (arosenbe@stanford.edu)

Helena Roy, Stanford University (helenar@stanford.edu)

⁵ For similar work, see Bryan and Ozcan (2020). In particular, we suggest a dose-response analysis of researchers in the University of California system. First, categorize each lab by how often its research output is published in or cites articles published in Elsevier journals. The higher these rates, the higher the exposure ‘dose’. Second, within a lab compute the difference between its research output and quality (publications, citations, patents, etc.) before and after the negotiations breakdown with Elsevier. The more negative the difference, the larger the effect. Third, plot the difference in outcomes against the treatment dose and draw the best fit line (this can be done via regression analysis to control for lab- or year-specific factors). If the line slopes downward, then heavily treated labs decrease their research output relative to the less-treated labs. This would suggest that making research articles unavailable hinders research output.

TO: Office of Science and Technology Policy
ATTN: Lisa Nichols, Assistant Director for Academic Engagement,
publicaccess@ostp.eop.gov
FROM: Dr. Fabricio Balcazar, University of Illinois at Chicago, Department of Disability
and Human Development
RE: Recommendations on Public Access to Peer-Reviewed Scholarly Publications
Resulting from Federally Funded Research
DATE: March 16, 2020

The staff from NIDILRR award number 90DPEM0002 from the Department of Disability and Human Development at the University of Illinois at Chicago (UIC) writes in response to the request for information issued February 19, 2020, by the Office of Science and Technology Policy (OSTP) regarding recommendations to ensure broad public access to peer-reviewed scholarly publications generated by federally funded research. The Department of Disability and Human Development at UIC is an internationally recognized center for the interdisciplinary study of disability, conducting research and community-engaged service across the spectrum of disability and dedicated to removing barriers to the advancement of disabled persons.

We are pleased to respond to this request, with the specific goal of increasing access to publications for people with disabilities.

(1) What current limitations exist to the effective communication of research outputs (publications, data, and code) and how might communications evolve to accelerate public access while advancing the quality of scientific research? What are the barriers to and opportunities for change?

- Language in academic publications is written in a style that is inaccessible to many Americans, and especially to individuals with disabilities. While a certain level of language complexity and “jargon” may be useful in order to place work in context, the benefit of scholarly research is unlikely to reach the average consumer if the language is not understandable (Caldwell & Friedman, 2015). Articles that are written at a high literacy level are unlikely to be accessible to the very people about whom the research was done, which may include people with low literacy levels or who speak English as a second language (Caldwell & Friedman, 2015).
- The mission of the National Institute on Disability Independent Living and Rehabilitation (NIDILRR) is “to generate new knowledge and to promote its effective use to improve the abilities of individuals with disabilities to perform activities of their choice in the community, and to expand society’s capacity to provide full opportunities and accommodations for its citizens with disabilities.” For people with disabilities to fully participate in activities of their choice, federally funded research related to the needs of the

community must be physically accessible. This includes websites that host scholarly articles, as well as elements within articles being accessible to people with disabilities via assistive technology.

(2) What more can Federal agencies do to make taxpayer funded research results, including peer-reviewed author manuscripts, data, and code funded by the Federal Government, freely and publicly accessible in a way that minimizes delay, maximizes access, and enhances usability? How can the Federal Government engage with other sectors to achieve these goals?

- We recommend that academic publications include an abstract in plain language, with formatting and compatibility with assistive technology. Best practices for creating this and making it accessible to people with disabilities have been detailed in the brief “*Plain Language Summaries for publications from the IL UCEDD/ LEND*” (Caldwell & Friedman, 2015). This includes not only offering language that is accessible to lay readers but also ability for publications to be accessed via screen readers and an audio file of the summary.
- The 2018-2023 Long-Range Plan for NIDILRR identifies broader access to assistive technology as key to addressing participation difficulties experienced by people with disabilities. Through increased access to assistive, service, and systems technologies, public access to publications could increase (NIDILRR, 2019, p. 3). These technologies are defined as follows: assistive technologies augment or compensate for lack of functionality of a resource; service technologies facilitate access to assistive technology and training to people with disabilities; and systems technologies address infrastructure deficits, such as those in the built environment and communication infrastructure (NIDILRR, 2019, p. 14).
- We recommend use of the *Web Content Accessibility Guidelines (WCAG) 2.0 Level AA* success criteria for determining the accessibility of online publications. These guidelines are not technically specific; however, they offer concrete guidance on making content accessible to people with a wide range of disabilities, “including blindness and low vision, deafness and hearing loss, learning disabilities, cognitive limitations, limited movement, speech disabilities, photosensitivity and combinations of these” (Caldwell, Cooper, Reid, & Vanderheiden, 2008). These guidelines have been frequently referenced by U.S. courts and the U.S. Department of Justice (DOJ) as the standard by which to measure accessibility of websites. Insofar as publications related to federally funded research meeting WCAG criteria, we recommend that online publications adhere to these guidelines. These include, but are not limited to, the following principles included in WCAG 2.0: perceivable information and user

interface, robust content and reliable interpretation, and understandable information and user interface (Zahra, 2019).

(3) How would American science leadership and American competitiveness benefit from immediate access to these resources? What are potential challenges and effective approaches for overcoming them? Analyses that weigh the trade-offs of different approaches and models, especially those that provide data, will be particularly helpful.

- Because federally funded scholarly research is publicly funded, we recommend that articles arising from such research be easily accessible to the public. The cost of subscriptions to academic journals has increased far faster than the Consumer Price Index (Edwards & Shulenburger, 2009). In order to recalibrate the cost of publishing and accessing articles, a variety of methods can be employed, including scholarly agreements to place each article in a free, publicly accessible electronic domain following a short period in another medium or journal (Edwards & Shulenburger, 2009).

(4) Any additional information that might be considered for Federal policies related to public access to peer-reviewed author manuscripts, data, and code resulting from federally supported research.

- NIDILRR has the goal of enhancing the ability of people with disabilities to achieve their maximum desired participation in the community. In its Long-Range Plan, it makes the recommendation that public access requirements for peer-reviewed publications and scientific data are fully implemented, so that knowledge, products, and data related to NIDILRR's goals can be accessed by the public as needed ([NIDILRR](#), 2019, p. 22). Increasing access to publications for people with disabilities aligns with this goal.
- As advances in technologies create an ever-changing landscape for disseminating electronically available content. We recommend that updates to dissemination or availability of scholarly articles be pursued with the intent to increase access for and adaptability to people with disabilities. For example, partnerships with the National Council of Independent Living could facilitate dissemination to Independent Living Centers interested in sharing accessible abstracts to their constituents. This could also be done with NAMI and other consumer-based organizations.
- People with disabilities could also be encouraged to collaborate in research projects. Promoting participatory research approaches (PAR) could also enhance participation and ownership of research, which

enhances acceptability and facilitates dissemination. Our research team has tried this approach (see Miranda, Garcia-Ramirez, Balcazar, & Suarez-Balcazar, in press) with good results. Accessible research designs have the potential to enhance the applicability of research findings (Rios, Magasi, Novak, & Harniss, 2016). Strategies for Universal Design which would include people with disabilities are found in the article by Rios, et al.

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Via Regulations.gov

March 16, 2020

Office of Science and Technology Policy
National Science and Technology Council Subcommittee on Open Science
Executive Office of the President of the United States
725 17th Street NW
Washington, DC 20006

Re: Docket No. OSTP 2020-03189 - Request for Information: Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research

On behalf of the Union of Concerned Scientists (UCS), we submit this comment to the Office of Science and Technology Policy (OSTP) and the National Science and Technology Council's Subcommittee on Open Science (SOS). Our comment provides recommendations to these institutions as they work on developing implementation guidance and plans for federal agencies with more than \$100M in research and development (R&D) expenditures to make publicly available the results of federally funded unclassified research published in peer-reviewed publications, and digitally formatted scientific data.

With more than half a million supporters, UCS is a science-based nonprofit working for a healthy environment and safer world. Our organization combines independent scientific research and citizen action to support innovative, practical solutions and secure responsible changes in government policy, corporate practices, and consumer choices.

We commend the White House for seeking information on how to best make science more publicly accessible and we believe this must be done in a manner that provides more equitable access to science, while preserving the infrastructure necessary to ensure high quality production and review of scientific work. It is crucial that any new policies avoid unintended adverse effects on the public and scientific community, such as limiting the dissemination of scientific knowledge or our capacity to evaluate the validity of new ideas. Below are specific considerations that should be recognized and accommodated in any future directives from your office.

I. Science Should be More Accessible to Everyone

Science is most successful when it is performed in dialogue with the scientific community around the globe and the public at-large. This is because researchers are part of a society

composed mostly of nonscientists who fund, participate in, and benefit from their work. Additionally, researchers are part of a larger global group of scientists and other experts whose work benefits from collaborative efforts. The public, the media, and decision makers at all levels also benefit from greater access to scientific publications.

Yet, researchers and their work have historically been siloed through lab isolation, cultural disincentives for sharing, and communication of results through issue-specific peer-reviewed journals that often exist behind paywalls [1]. Research findings have also long been disseminated through university libraries, exclusive meetings held by prestigious scientific institutions, and among scientists themselves, but not often to communities and others outside the academic community who may benefit from access. Such a system is largely a historical byproduct of where the scientific community is housed (in the halls of academia) and a lack of a systematic process to distribute research to the public at-large. However, the advent of the internet and web access give scientists an ability to communicate their methods, data, and interpretation of results to a global audience [1]. Technology has made the long-held vision of scientists being able to communicate their work openly with the world a real possibility (e.g., an open access system).

An open-access system can provide many benefits such as more equitable access to scientific findings, knowledge sharing among researchers, and opportunities to test the robustness of new ideas. The rapid onset of the novel Coronavirus, for example, has been noted as a case where open sharing of scientific knowledge between researchers across the world greatly benefited scientists understanding of the virus and enabled the rapid and timely communication of threats to the public, likely saving lives [2].

Efforts to expand access to science should account for groups for whom science is currently inaccessible. This includes communities that have not historically been considered by scientific publishers such as the disabled community, communities that cannot afford journal subscription fees, or rural/low-income communities that may have limited internet access. For example, accessibility of scientific findings can be critical for those with rare diseases, or to grassroots organizations who are providing information about how a chemical spill could impact public health.

It is equally important that scientists in smaller institutions, scientists early in their career, or scientists in developing nations have access to their colleague's work to create conditions conducive to advancing science. In some cases, scientists who work within the US may not be able to access research conducted by their colleagues who work in the same state. This can stifle scientific progress and can result in repetitive experimentation and results.

II. Expanded Access Policies Should Consider Potential Adverse Effects

At the same time, decision makers should be cognizant of potential adverse effects of open access policies on the scientific community itself and the people it serves.

While a large segment of the scientific publishing industry relies on readership subscriptions (paid mostly by libraries and universities) to meet review and publication costs, open-access publishers tend to shift these costs to the authors [3]. Such costs may make publishing

unattainable for early career researchers, those outside well-resourced research universities, and those outside the US [4]. In turn, if researchers cannot afford to publish their work, then the public may have less access to peer-reviewed scientific work. Any open access policy developed should consider where the costs of review and publication will shift and how that will impact the scientific community and the public.

A policy on open-access also should consider where federal scientific research is being published. Some open-access journals can be predatory by not having a legitimate board of editors with academic expertise needed to judge the merit of research, offer expedited review service for a fee, or republishes papers published elsewhere [5]. Guidance should be provided on which open-access journals are predatory and which are not.

Any open access policy should consider how the impacts of such cost shifts can be mitigated. For example, in cases where federal scientists have collaborators with a limited budget and may not be able to meet publication costs, will the federal government have a system in place to help such collaborators meet these costs? In cases where collaborators may not be able to meet publication costs, or simply may not want to publish results in an open-access outlet, the White House should consider scenarios to allow federal scientists to publish work in non-open access journals so as not to stymie fruitful collaboration and provide the option to publish a pre-print in a federal repository. Further, a policy that requires publication of federally funded work in open access journals imposing higher costs on authors should also require federal grants to incorporate funding for such costs into their grant allocations.

Additionally, in setting any open access policy, the White House should ensure legally protected data can remain confidential. Public disclosure of some categories of data could be a violation of law. For example, medical records and other data that may reveal personally identifying information, such as study subjects in epidemiological research or data disclosing locations of endangered species. The final policy developed by these institutions should provide guidance to federally funded projects on the information that can and cannot be made publicly available.

Further, the White House should consider the potential impacts of having zero embargo on the publication of federally funded research and scientific analysis. The impacts on traditional scientific publications whose funding model relied on exclusive access to subscribers for the initial funding period have been noted [2]. Beyond this, federal scientists interested in publishing their research could be disadvantaged if they must disclose their data and analysis publicly before having the opportunity to develop the work for academic publication. Under current embargo periods, federal scientists have a “head start” in publishing before their data must be made public. Many journals will not publish research that has already been published and the requirement to make research and its data public immediately might restrict the ability of scientists to then publish their research. Elimination of this embargo period could adversely affect professional opportunities for federal scientists.

These potential adverse effects of an open access policy should be accounted for in any action taken by the White House on this issue.

III. Processes Ensuring Publication of High-Quality Scientific Research Should be Preserved

Rigorous and high-quality peer review and publication processes must be maintained in order to preserve the integrity of scientific knowledge production. While the potential adverse effects of cost shifting should be minimized, any new open science policy must also preserve these crucial steps in the process of scientific publication. While reviewers and editors are not necessarily compensated for their work in the peer-review and production process of scientific publishing, publishers incur costs for layout, editorial support, website maintenance, promotion and other maintenance costs. These functions must be preserved to ensure high-quality production of scientific publications.

The merit of a publication is often judged by a journal's impact factor. Search committees at universities and at federal laboratories often look at where an applicant has published research as well as the number of publications the applicant has. While there is an argument to be had of whether or not an article published in a high-impact factor journal is deserving of more merit than one published in a lower-impact factor journal, these numbers have certainly stimulated competition to produce impactful research.

A full change to an open-access system will likely require the scientific community to change how they think about the impact of a publication [1]. Some researchers have argued that publications in open access journals have a greater impact as they are often cited more than articles published in non-open access journals [6, 7]. However, it is not rare to hear a search committee at a university dismiss a candidate because they have too many open access publications. Indeed, there are still many within the scientific community that believe open access publications are not representative of "good science."

If an open access publication is not viewed as valuable by the scientific community, this may disincentivize scientists (particularly early-career scientists) from participating. This could detract outside collaboration with federal scientists. It also, in general, may result in the scientific community viewing open access federal scientific research as not as rigorous. If value systems do not change in the scientific community, this could have long-standing harm on the use of federal scientific research in policymaking.

The White House should carefully think about how the scientific community may view and participate in federal research if an open access requirement is mandated. Opportunities to publish in non-open access journals may need to continue especially for collaborators as the scientific community's views on the value of open access slowly change. A "middle ground" may be to allow researchers to deposit their pre-print publication (after acceptance in a peer-reviewed journal) in a federal repository. However, an "all or nothing" approach may ultimately be detrimental to federal scientific research including collaboration and the perceived value of findings.

IV. Seek Extensive Input from the Scientific Community and Other Stakeholders

Given the potential wide-ranging effects of a new federal open access policy, it is crucial that the White House seek extensive input from stakeholders and experts likely to be affected by such changes. This Request for Information is an important but insufficient step in seeking such input. Additionally, the White House should consult the broader scientific community, including the National Academies of Sciences, Engineering and Medicine; University leadership, and representatives of early career researchers, and those outside of major research institutions. Scientific societies have important perspectives to add; however, their reliance on publication subscription fees for income is an important context associated with their input [8]. Stakeholders such as community groups and nongovernmental organizations who use scientific publications should also be consulted.

Thank you for your consideration of these important dimensions surrounding a potential federal policy on open access to scientific publications.

Sincerely,

Drs. Jacob M. Carter and Gretchen T. Goldman
Center for Science and Democracy, Union of Concerned Scientists

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Preprint posting as a means to universal access to research

Summary: Mandating posting of preprints is the easiest way to ensure universal free access to the results of federally funded research. It also speeds up research by making articles available much earlier, as well promoting reproducibility and a more equitable publishing ecosystem.

Providing immediate free access to the results of federally funded research is a desirable goal. Broadening dissemination so that anyone can access new findings has the potential to inform the work of a larger number of scientists and increase the pace of research, as well as provide tax payers with access to the research they have funded.

The dissemination of research findings has traditionally been performed by scientific journals and coupled to the more costly evaluation process in which articles undergo peer and editorial review, editing and typesetting. These costs are typically recouped through subscriptions, which necessarily limit access to the published material. Although there have been calls for publishers to provide immediate free access for more than two decades, progress has been limited because of the challenges journals face in attempting to restructure editorial processes to accommodate a new business model without jeopardizing revenue, selectivity and the quality control and evaluation they perform. As a consequence, universal access has not been achieved and the majority of papers remain inaccessible to most potential readers when initially published.

A far simpler solution to the goal of immediate free access is to decouple the dissemination of research results from their subsequent evaluation at journals by mandating that authors share their findings as “preprints” prior to submitting to scientific journals¹. This approach has worked successfully in the physical sciences for almost 30 years. The free arXiv (“archive”) server at Cornell University now hosts more than 1.6 million preprints in physics, mathematics and computational science. A similar initiative in biology, bioRxiv (“bio-archive”) now contains more than 75,000 articles and is growing exponentially. Preprint servers for clinical research (medRxiv), chemistry (chemRxiv) and social science (socarXiv) are also gaining ground. These servers are relatively cheap to operate since they do not perform the costly process of peer and editorial review and are popular amongst authors, since critically they not only provide immediate free access to articles but do so in a way that does not compromise the authors’ ability to subsequently publish the articles in the journals on which their academic careers depend.

Mandating the posting of articles resulting from federally funded research as preprints prior to formal publication in journals would immediately achieve the goal of universal and free access to federally funded research. Since the practice of posting preprints is widely recognized and accepted among researchers and publishers², it would achieve this without the difficulties and potential unintended consequences of trying to manipulate the workings of a multi-billion-dollar publishing industry first.

There are precedents for funder mandates for posting preprints. Researchers funded by the Chan Zuckerberg Initiative (CZI) and Michael J. Fox Foundation must all post preprints of work stemming from research they fund, and the Wellcome Trust requires grantees to post preprints during epidemics. These approaches have been well received and, unlike other open access proposals, not widely opposed by publishers or researchers. Moreover, they reflect a welcome, general trend towards early sharing of data and research outputs. Federal granting agencies such as NIH should pursue a similar, easily implementable access strategy.

Preprint mandates have the additional benefit that they result in much earlier sharing of research, which has the potential to significantly accelerate science itself. Moreover, they create fertile ground for evolution of the peer review system. Since preprint servers do not compete with publishers for the service the latter perform most effectively – peer review and editorial selection – this can continue at journals as before. The prior dissemination and archiving of the work by preprint servers means journals can focus on the aspect of the process they do best. This also lowers the barrier to entry for new publishing initiatives, creating the potential for experiments that make the system more equitable and improve reproducibility.

Dr Richard Sever, bioRxiv and medRxiv Co-Founder and Cold Spring Harbor Laboratory, NY

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Dr Harlan Krumholz, medRxiv Co-Founder and Yale School of Medicine

Dr Joseph Ross, medRxiv Co-Founder and Yale School of Medicine

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Brussels, 16 March 2020

RFI Response: Public Access to Peer-Reviewed Scholarly Publications, Data and Code

Dear Ms Nichols,

The European University Association (EUA) would like to take the opportunity of the Request for Information of the White House Office of Science and Technology Policy to highlight a European perspective on public access to scholarly publications, data and code in the United States.

Science is a global endeavour, and as such we believe that it is of utmost importance that the rules governing scientific enquiry continue enabling and facilitating excellent, collaborative research. Collaboration among American and European researchers across disciplines is common and growing, measured for instance by the number of co-publications.¹ EUA therefore welcomes and encourages the initiative of the Office of Science and Technology Policy to strengthen the existing federal policy for public access to scientific publications, data and code.

Over the last few years, European governments have increasingly recognised and supported “Open Science”, and in particular access to peer-reviewed scientific publications. The Council of the European Union in 2016 welcomed “open access to scientific publications as the option by default for publishing the results of publicly funded research”.² This commitment is translated into action through the European Union’s flagship funding programmes, Horizon 2020, its successor, Horizon Europe, and other initiatives.

Horizon Europe, starting in 2021, will entail an open access mandate that demands immediate access to scientific publications, author retention of copyright, and open licenses. Research data shall be made “as open as possible, as closed as necessary” and data management planning will be required from researchers. Many national funding agencies organised in Coalition S have established similar requirements. Globally, UNESCO is working towards a recommendation on Open Science, including open access to publications and research data.³

¹ National Science Board. (2018). *Science and Engineering Indicators 2018*. NSB-2018-1. Alexandria, VA: National Science Foundation. <https://www.nsf.gov/statistics/2018/nsb20181/report/sections/academic-research-and-development/outputs-of-s-e-research-publications#coauthorship-and-collaboration-in-s-e-literature>

² Council of the European Union. (2016, May 27). *The transition towards an Open Science system - Council conclusions*. <https://data.consilium.europa.eu/doc/document/ST-9526-2016-INIT/en/pdf>

³ UNESCO. (2019, March 8). *Preliminary study of the technical, financial and legal aspects on the desirability of a UNESCO Recommendation on Open Science*. <https://unesdoc.unesco.org/ark:/48223/pf0000367018.locale=en>

A main reason for public access is that publicly funded scientific outputs should be a public good. Indeed, technological progress has made it possible to share knowledge at minimal cost. Given that most academic research is funded by taxpayers, it is more and more recognised that this knowledge should circulate as fast and widely as possible to generate the highest possible returns to society. The current Coronavirus outbreak is a stark reminder of the need for and power of rapid dissemination of scientific knowledge.⁴

Granting public access to scholarly publications will also promote scientific leadership and competitiveness. Right now, access to publications is given to organisations and individuals who can afford it, foreign or domestic. Those who are not affluent enough to afford access – including but not limited to small businesses, entrepreneurs, medical professionals, researchers at smaller institutions, the general public – are the ones to benefit from more access to the results of publicly funded scientific research. They will conduct better science, invent and develop more advanced technologies and services, and serve the public by applying more advanced knowledge.

From the perspective of EUA, the role of public authorities is to set the right conditions for this improved circulation and exploitation of scientific knowledge. Even more so because the production of knowledge – authoring, editing and reviewing papers – is usually publicly funded, while profits are far too often privatised.⁵ Policy intervention can help unleash innovation in scholarly publishing itself and create growth opportunities for new and agile businesses in scholarly communications.

Besides benefits coming from open access to publications, reproducibility and replicability of scientific results are to be strongly improved through more data, code and software sharing.⁶ Curating, managing and sharing research data also promises significant efficiency savings for public budgets, including reducing double funding, minimising duplication of research efforts, and storage costs.⁷ Certainly, access to research data entails complex questions, including data protection, sensitivity, competition and intellectual property. Technical challenges such as rising demands for storage and archiving capacity are also emerging. However, the right incentives and investments in capacity building and infrastructure can overcome many of these challenges.

At the European side, the principle “as open as possible, as closed as necessary” has been designed to allow the necessary flexibility that safeguards sensitive data whilst setting an incentive to increase the amount of accessible research data over time. The recent *Directive on open data and the re-use of public*

⁴ Kupferschmidt, K. (2020, February 26). ‘A completely new culture of doing research.’ Coronavirus outbreak changes how scientists communicate. *Science*. <https://doi.org/10.1126/science.abb4761>

⁵ To the extent that even large universities and colleges have become unable or unwilling to pay for subscriptions to periodicals, see, e.g., Nilsson, P. (2019, March 1). Relx hit as University of California cancels \$11m contract. *Financial Times*. <https://www.ft.com/content/cc135e32-3c31-11e9-b72b-2c7f526ca5d0>; Barker, A., Nilsson P. (2020, February 12). Mutinous librarians help drive change at Elsevier. *Financial Times*. <https://www.ft.com/content/c846c756-49ac-11ea-ae2-9ddbdc86190d>

⁶ National Academies of Sciences, Engineering, and Medicine. 2019. *Reproducibility and Replicability in Science*. Washington, DC: The National Academies Press. <https://doi.org/10.17226/25303>.

⁷ European Commission and PwC EU Services. (2019, January 16). *Cost-benefit analysis for FAIR research data. Cost of not having FAIR research data – Study*. <https://doi.org/10.2777/02999>

sector information⁸ applies this principle, as will the Horizon Europe programme starting in 2021. National research funding organisations in Europe are increasingly making use of mandates for the management of research data, including better public access to it.⁹ At international level, the OECD has long advocated for better access to and sharing of research data.¹⁰ At the practical level, the growing expectation to make research data FAIR¹¹ means that, at the minimum, better metadata will be produced, improving the discoverability, accessibility, and re-usability of data. The *European Open Science Cloud* initiative has been launched to support this process, with the aim to engage with international partners including in the United States in the future.¹²

Inherently linked to data are software and code. The German Council for Scientific Information Infrastructures has highlighted this, asserting that “Data cannot be separated from information on software, codes or programming languages, often also on hardware.”¹³ Therefore, software and code should increasingly be made available for re-use. Solutions such as Git and GitHub, interactive computing software and electronic lab notebooks already make sharing and collaborating simpler and more efficient.

Another important aspect that requires attention is the topic of career assessment. Researchers in the United States and Europe are usually still hired, evaluated and promoted based on publication-based metrics. The pressure to publish in specific outlets is deeply ingrained in academic culture. Open access to publications, data and code means to rebalance this focus on publications to a broader approach centered around the quality of a researchers' work, including collecting and preparing data and code. There is also a growing recognition that journal-based metrics can be detrimental to the objectives of national science policy.¹⁴

In Europe, this has led to an active discourse about changing academic career assessment in the transition to Open Science.¹⁵ Several European countries announced and started revising national career assessment practices as part of their Open Science strategies, including France, the Netherlands, Ireland, and Finland.¹⁶

⁸ Directive (EU) 2019/1024 of the European Parliament and of the Council of 20 June 2019 on open data and the re-use of public sector information. (2019). OJ L172/56. <https://eur-lex.europa.eu/eli/dir/2019/1024/oj>

⁹ Fosci, M., Richens, E., and Johnson, R. (2019, September 30). *Insights into European research funder Open policies and practices*. <http://doi.org/10.5281/zenodo.3401278>

¹⁰ OECD. (2007). *OECD Principles and Guidelines for Access to Research Data from Public Funding*. Paris: OECD. Retrieved from <https://www.oecd.org/sti/inno/38500813.pdf>

¹¹ Wilkinson, M., Dumontier, M., Aalbersberg, I. et al. (2016). The FAIR Guiding Principles for scientific data management and stewardship. *Sci Data* **3**, 160018. <https://doi.org/10.1038/sdata.2016.18>

¹² ScienceBusiness. (2020). *Going global: connecting the clouds*. <https://sciencebusiness.net/report/going-global-connecting-clouds>

¹³ German Council for Scientific Information Infrastructures (RfII). (2020). *The Data Quality Challenge. Recommendations for Sustainable Research in the Digital Turn*. Göttingen: RfII. <http://www.rfii.de/?p=4203>

¹⁴ Neff, M.W. (2020). How Academic Science Gave Its Soul to the Publishing Industry. *Issues in Science and Technology* **36**, no. 2: 35–43. <https://issues.org/how-academic-science-gave-its-soul-to-the-publishing-industry/>

¹⁵ Saenen, B., Morais, R., Gaillard V. et al. (2019). *Research Assessment in the Transition to Open Science 2019. EUA Open Science and Access Survey Results*. Brussels: European University Association. <https://eua.eu/resources/publications/888:research-assessment-in-the-transition-to-open-science.html>

¹⁶ Ministère de l'Enseignement supérieur, de la Recherche et de l'Innovation. (2018). *National Plan for Open Science*. <https://cache.media.enseignementsup->

EUA welcomes that the topic is being addressed in the United States as well, for instance under the aegis of the National Academy of Sciences, Engineering, and Medicine,¹⁷ as it also affects the conditions for research collaboration and mobility of American and European researchers.

To support and deepen scientific collaboration and exchange between the United States and Europe, progressing along a close trajectory is now crucial, including the conditions for the sharing of research outputs. Excellent research is international. A strengthened federal policy will amplify the work of American universities and researchers, and their collaboration with international counterparts.

Universities are indeed at the core of knowledge production, dissemination and exploitation and increasingly embrace Open Science. Many functions of universities, as employers, infrastructure providers, education and training providers, developers and consumers of information services and hubs for innovation, will change in the transition to Open Science. American institutions, including the California Digital Library, MIT Libraries, and Harvard Library's Office for Scholarly Communication, have been important players in this global movement towards open scholarship for many years, providing tools, frameworks and inspiration for universities abroad.

As an organisation representing more than 800 universities in Europe – many of them working together with American universities, colleges and research institutes – we therefore welcome and encourage the initiative of the Office of Science and Technology Policy to further advance the existing federal policy for public access to scientific publications, data and code. We look forward to seeing the results of this effort.

Yours sincerely,



Amanda Crowfoot
EUA Secretary General

recherche.gouv.fr/file/Recherche/50/1/SO_A4_2018_EN_01_leger_982501.pdf; National Open Research Forum. (2019). *National Framework on the Transition to an Open Research Environment*. http://norf-ireland.net/wp-content/uploads/2019/07/NORF_Framework_10_July_2019-2.pdf; OCW. (2017). *National Plan Open Science*. <https://doi.org/10.4233/uuid:9e9fa82e-06c1-4d0d-9e20-5620259a6c65>; Open Science Coordination in Finland and Federation of Finnish Learned Societies. (2019). *Declaration for Open Science and Research 2020–2025*. <https://doi.org/10.23847/isbn.9789525995251>;

¹⁷ National Academies of Sciences, Engineering, and Medicine. (2020). *Advancing Open Science Practices: Stakeholder Perspectives on Incentives and Disincentives: Proceedings of a Workshop-in Brief*. Washington, DC: The National Academies Press. <https://doi.org/10.17226/25725>.

Good afternoon Asst. Director Nichols,

Thank you kindly for your time. Myself, Nicholas LaRecuente and William Woodruff are STEM graduate students at the University of Illinois at Urbana-Champaign, and we are authoring this letter to you to urge the OSTP to increase its efforts in making publicly-funded research more accessible to the general public. By doing this, the government can play a more active role in enhancing public trust in science and reduce the cost of information access for independent researchers and private firms.

We were reminded that increasing accessibility to science should be a top priority when we met Walter, a corn farmer in Champaign county. Walter told us that he supports and enjoys learning new things about science and speaking to scientists, but he does not trust science at-large because research paid from his tax dollars is not accessible to him. There are likely many more American taxpayers like Walter, and it is our duty to make sure the information we generate as researchers is available to them.

One major way to guarantee access is to enforce a policy that all taxpayer-funded research is made available to the public for free after a period of time. While cutting-edge access is critical for researchers at universities like the University of Illinois, members of the public may need only to access information for leisure and for independent research. Combined with a comprehensive access to pre-print services like arXiv and bioRxiv, members of the public can be more rest assured that their tax dollars are being well-spent.

To combine these two goals, the OSTP should host a public, easily-accessible website where members of the public can find older research and pre-prints free of charge. A central resource like this will make the prospect of finding research on related subjects simpler for taxpayers already in full-time positions. On top of this, critical, time-sensitive information on crises like the exponential spread of the coronavirus could be made available to medical providers and other researchers in the world.

We thank you for your time Asst. Director Nichols and we hope you consider our proposal to increase access to publicly-funded research and scientific pre-prints.

Sincerely,

Jordan Sickle
William Woodruff
Nicholas LaRecuente



University of California
San Francisco

Lindsey A. Criswell, MD, MPH, DSc
Vice Chancellor of Research
Professor of Medicine and Orsotical
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March 9, 2020

Use Nichols
Assistant Director for Academic Engagement
Office of Science and Technology Policy

Dear Dr. Nichols:

Re: Request for Information: Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research

The University of California, San Francisco (UCSF) has long been a leader in supporting open access. In May 2012, the UCSF Academic Senate unanimously adopted a faculty open access policy, becoming the largest scientific institution in the nation and among the first public universities to do so. With UCSF leadership, the systemwide Academic Council adopted the 2013 Academic Senate Open Access Policy that endorsed the Declaration of Rights and Principles to Transform Scholarly Communication. UCSF and UC faculty remain deeply engaged in directing systemwide open access initiatives in partnership with the UC Libraries.

As UCSF campus leaders, we strongly endorse the use of a zero-embargo policy for author accepted manuscripts to support "broad public access to the peer-reviewed scholarly publications, data, and code that result from federally funded scientific research." This would be a major step toward eliminating artificial barriers to sharing information that are created by the paywall of subscription journals. Immediate online access to the research funded and published with federal support is fundamental to fulfilling the full potential of public investment in science. Taxpayer funds support UCSF research and research infrastructure and are the underpinning of the entire scholarly communication ecosystem. We positively affirm the benefits to society that will result from this policy, supporting the UCSF mission of *advancing health worldwide*.

Transformation of the scholarly ecosystem will undoubtedly bring disruption to scholarly societies, many of which depend on subscription revenue to support their activities. We are committed to working with our library and faculty partners to support societies in making a successful transition to open access.

Sincerely,

Lindsey A. Criswell, MD, MPH, DSc
Vice Chancellor of Research
Jean S. Engleman Distinguished Professor in Rheumatology
Professor and Chief, Rheumatology

Chris Shaffiq
University Librarian
Assistant Vice Chancellor



From: George Riddle <gh.riddle@verizon.net>

Sent: Sunday, March 15, 2020 8:50 PM

To: MBX OSTP Public Access <MBX.OSTP.PublicAccess@ostp.eop.gov>

Subject: [EXTERNAL] RFI Response: Public Access

This is a brief comment regarding important benefits of public access to scholarly publications.

This is in regard to my personal efforts over the past several years to follow current research related to treatment of cancer. My wife was a victim of cancer. I needed to understand the nature and benefits of current treatment options, particularly of trials. Cancer trials involve drugs that are not well understood by the treating physician, so the onus of understanding them falls largely on the patient and her family. In most cases scholarly publications are the sole source of information regarding the drugs on trial, and must be read in order to estimate the potential benefits of various current trials and the likelihood of new drugs coming available in the near future.

Some of the relevant scholarly publications are available to public access. However, many key publications require subscription, including Nature, Science, NEJM, and their many sister publications. Being a physicist myself, I was fortunate to be a member of the American Association for the Advancement of Science and so had access to Science (but not to Science Translational Medicine or Science Immunology). I found it necessary to purchase a subscription to the New England Journal of Medicine and to Science Translation Medicine. For a time many publications offered low-cost "patientACCESS", but that practice seems to have been halted.

In fact I was able to identify trials applicable to her cancer that were unknown to our oncologist, and to avoid a trial that our oncologist suggested but would have been inappropriate due to specific details of her tumors.

My ability to understand and evaluate opportunities for treatment would have been substantially simpler and less expensive had the majority of scholarly publications been available to the public with minimal or no payment required.

George Riddle
Princeton, NJ



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Ms. Lisa Nichols
Assistant Director
Academic Engagement
Office of Science & Technology Policy (OSTP)
publicaccess@ostp.eop.gov

Subject: Request For Information (RFI) Response: Public Access.

On behalf of Open Therapeutics LLC and Knowbella Tech LLC, two open science and open access companies, I am proud to provide a comment letter in response to the U.S. Federal Government, Office of Science and Technology Policy (OSTP) "Request for Information: Public Access to Peer-Reviewed Scholarly Publications, Data and Code Result"

Much of the scientific knowledge is funded by the public. Having the public turn around and pay a heavy price to access the knowledge they funded is antithetical to science and common sense about the return on investment (ROI) to the taxpayers.

The COVID19 has proven the value proposition of "open science". Lives are being saved due to the implementation of open science and open access.

Multiple outlets around the world are covering how open science is rapidly making discoveries around COVID19. (1)(2)(3)

Even the U.S. Administration is supporting and promoting open science to attack COVID19. (4)

The private sector simply can't mobilize quickly enough nor has the resources to respond adequately.

The private sector does not constitute a global think-tank. Their cultures and organizations are built around the for-profit closed science and pay-walled models.

Similar to Linux and the open source movement, private sector companies do not have the labor force, infrastructure, or intellectual property structures to quickly muster resources to collaborate.

As Sir Isaac Newton said in 1675, "If I have seen further, it is by standing on the shoulders of giants." (5)

Open Therapeutics' <https://Therapoid.net>, which is in beta, is positioned to help scientists around the world to freely and openly collaborate on solving the COVID19 crisis.

Therapoid™ will do this by providing an end-to-end scientific ecosystem that provides free tools, services, up to \$4T worth of unused intellectual properties (IP) to researchers and rewards their scientific

collaborations with AnthroTokens™ cryptocurrency.

The initial business model is to facilitate the global research community to advance unused IP the companies collect and monetize those advancements.

Soon after that revenue stream is established the Company will pursue a job board and gig economy model where employers place ads for STEM candidates and we sell a dashboard to recruiters to mine the communities for candidates.

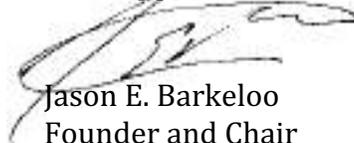
Obviously, once a global scientific think-tank is established, many other revenue models materialize.

One can think of Open Therapeutics and Knowbella Tech as “Githubs for scientists” that rewards collaboration with a blockchain-based cryptocurrency. Open Therapeutics focuses on pharmaceuticals, medical devices, and diagnostics, while Knowbella Tech focuses on all other IPs.

The age of open science is upon us because not adopting open science and open access will continue to create disparities between those who have access to publicly funded knowledge and those who do not.

I respectfully hope the Administration will move the U.S.A. aggressively toward a more open scientific culture.

With Appreciation,



Jason E. Barkeloo
Founder and Chair

(1) <https://www.channelnewsasia.com/news/commentary/covid-19-coronavirus-china-open-science-journal-data-research-12468852>

(2) <https://www.linkedin.com/feed/update/urn:li:activity:6636402241873997824/>

(3) <https://www.benzinga.com/pressreleases/20/02/n15423852/roadmap-for-open-science-to-reduce-barriers-and-speed-up-discovery>

(4) “President Trump’s Science Advisor and Government Science Leaders from Around the World call on Publishers to make all COVID-19-Related Research Publically”
Available. <https://twitter.com/whostp/status/1238501576123265025?s=21>

(5) Isaac Newton, Wikipedia. Accessed March 15, 2020 at https://en.wikipedia.org/wiki/Standing_on_the_shoulders_of_giants.

16 March 2020

Response to the Office of Science and Technology Policy regarding Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research

What current limitations exist to the effective communication of research outputs (publications, data, and code) and how might communications evolve to accelerate public access while advancing the quality of scientific research? What are the barriers to and opportunities for change?

The present-day research communication landscape has many strengths and also several areas of weakness that provide exciting opportunities for improvement.

Amongst the strengths that should be protected are:

- A high-quality academic record – that is, the ideas, assertions and facts that are most likely to be worth sharing and preserving – has been built up over time. The academic record provides a solid platform for further scientific research and development.
- Well-proven processes, including peer-review, provide critical quality control gates to help researchers identify credible advances that are worth scrutinizing and building upon.
- A highly interconnected set of shared infrastructure underpins the creation, preservation and utility of the academic record, from the submission of new research for publication through to dissemination, long-term preservation, and integration of research publications with underlying data.

The diverse and active community of participants in research communication is leading to substantial innovation in all parts of the research communication landscape, such as new forms of rapid early publication (preprints), open peer-review, and new ways to better link research publications to their underlying data. In particular, we note:

- There has been widespread experimentation in recent years in new business models for publishing, particularly models to support open access publishing. None have yet become as widespread and stable as subscriptions and other forms of payments based on readership, particularly for books, but the research communications industry is working to move away from reader-based financial models for many types of research outputs.

- New approaches and standards in open research are emerging. Most focus has been on preprints, journals and data, but books and other modes of communication are also receiving attention. A few examples are increasingly strong journal policies for transparency around code and data sharing (evidenced in data availability statements); stronger and more enforced journal policies around ethical research practices (such as declaring competing interests and research participant consent); and new approaches to highlight the contributions of authors and reviewers and to add transparency to publishing decisions.

All this said, there are some areas where publishers and other stakeholders in research communication must work together and strive for improvement:

- *Greater efficiency in publishing.* High quality publishing takes effort, time, and money. It can become more efficient (faster and lower cost). As well as improvements to existing publishing venues, greater efficiency can come from new modes of publication, such as platforms for collaborative working and rapid communication.
- *Better balanced incentives in research evaluation.* Researchers and their institutes are not properly incentivized to communicate their research as widely and effectively as it should be communicated. In particular, research is evaluated through a heavy focus on journal articles and crude journal metrics. Researchers have little practical support for data and code sharing, and sharing these research outputs is undervalued and poorly rewarded.
- *Treating data and code as first-class research outputs.* Types of research outputs that have traditionally not been properly rewarded, such as data and code, are valuable. The infrastructure supporting the sharing of data and code needs to be dramatically improved, and this involves many parts of the research lifecycle, from researcher training and research practices, funder and journal policies, the availability of suitable repositories, and so on.
- *Sustainable approaches to open research publishing.* Business models that support high quality publishing can introduce inequalities. Paywalls prevent poorly funded researchers (including, but not limited to, those in low or middle income countries) reading content. This inequality is relatively easy to mitigate, and publishers work together through organisations such as Research4Life to provide free or low cost access to subscription. Open Access models that are based upon researchers (or their funders or institutes) paying to publish can introduce inequalities that are harder to mitigate for researchers without access to fund to pay for OA publishing. All things considered, new ways to give more readers immediate access to all research, while continuing to sustain equitable, high quality publishing, are needed.

What more can Federal agencies do to make tax-payer funded research results, including peer-reviewed author manuscripts, data, and code funded by the Federal Government, freely and publicly accessible in a way that minimizes delay, maximizes access, and enhances usability? How can the Federal Government engage with other sectors to achieve these goals?

We suggest a number of specific activities that Federal agencies could undertake that would have a strong positive impact on the accessibility and usability of research:

- *Develop strong, clear and consistent policies across all federal agencies.* This will enable all stakeholders to develop their understanding of what they need to do to make publicly federally funded research open.
- *That said, acknowledge that different communities have different needs.* Different research communities, because of the nature of their work, have different needs and conventions. The transformation to fully open research means different things to different communities. Federal policies should allow all communities to benefit from open research, while allowing them to transition to open in ways that reflect their needs.
- *Coordinate internationally.* Research is an international endeavour – researchers in one country benefit from the research in another. Therefore, Federal agencies should coordinate with their international counterparts, encouraging them to adopt strong and sustainable open research policies as needed, and benefiting from any experience they might have in making their policies more effective.
- *Fund open access.* Approaches to open access that depend on a continuation of paid-for readership (particularly, journal subscriptions) are paradoxical and unsustainable. Federal agencies should support models that directly fund open access publishing. Funding models should also support the intermediary steps that must be taken on the community’s journey to full open access.
- *Fund high quality, authoritative open content.* Peer-review is one of the many quality control checks on which high quality publishing depends. It is imperative that publishing this high quality content can be sustained. While pre-final versions of content can have value to readers, financial support for research communications should allow the authoritative published versions to be open access.
- *Fund new and alternative publishing modes and venues* that support collaborative working and rapid communication. These can pre-publication collaborative working spaces, preprint servers and data repositories, and entirely new concepts that will no doubt be conceived in the future.
- Implement board changes in research culture to improve how research is conducted, and to recalibrate how research and researchers are evaluated. The San Francisco Declaration on Research Assessment (DORA) is one good example of how some of this can be achieved in practice. All stakeholders, publishers included, will be better incentivized to improve open access to research, data and code if researchers are more fairly and more comprehensively appraised on the basis of their full contribution to research and society more broadly. Reinventing how research is assessed is a complex task that requires the commitment of the whole community. Federal agencies can provide the strong leadership needed to bring the community together to tackle the task.
- *Strengthen mandates for the sharing of data and code and monitor compliance.* This goal is to embed an approach of ‘as open as possible, as closed as necessary’ for all publicly funded research findings. This will improve the availability and reproducibility of research communications, thereby making research programmes more efficient, effective and impactful.

- *Fund data and code sharing infrastructures on a long-term basis.* There are many community resources such as databases which are highly valued by their communities but which have short-term, unstable funding. Often this funding is predicated on new developments rather than maintenance of key services.
- *Engage closely with the community.* Cambridge University Press would welcome a discussion about how we and the community can pull together to deliver the open research agenda. We partner with a wide range of communities around the world, and their many varied voices must be heard if the promises of open research are to be realized.

How would American science leadership and American competitiveness benefit from immediate access to these resources? What are potential challenges and effective approaches for overcoming them? Analyses that weigh the trade-offs of different approaches and models, especially those that provide data, will be particularly helpful.

America is a world-leading research country. It also leads the world in putting that research to practical use in medicine, technology and other areas. Cambridge University Press partners with many leading American societies, and we have invested significantly in their publishing programs. We are working to make the American research academy even stronger. Because open research makes research more impactful, America will benefit from it. Specifically:

- Open access publishing, along with data and code sharing and other open research improvements, will allow research to have greater impact, in turn supporting ever better re-use of that research. Open research will, therefore, increase the competitive advantage that America already has through its research and development activities.
- American leadership in open research will encourage other countries to follow suit. With America's strong ability to turn research into development, America will benefit from more open research around the world.
- Many American organizations, both commercial and non-profits, do not have sufficient access to research funded by American tax payers. Open access will particularly benefit them, allowing them to become more competitive globally.
- The benefits of funding open access will more than compensate for relatively modest cost increases. There will need to be cost increases, because the move to sustainable open access models requires the costs of high quality publishing to move from readers to research organizations. America is a large producer of research and therefore the publication of America's research output has been, to some extent, subsidized by subscriptions paid by the rest of the world. The move to open access will require America to pay the full costs of its research publishing. However, the costs of publishing are a tiny part of the costs of research, and therefore the costs of moving to open access publishing will be a tiny part of the economic gain that America gets from transitioning to open research.

March 16th, 2020

Bruce Allen (MPI for Gravitational Physics, Hannover)

Alexander Nitz (MPI for Gravitational Physics, Hannover)

Here we concentrate on the public release of scientific data, taking a specific example from our field of interest, gravitational wave physics. It is expected that in Spring 2020, the LIGO Scientific Collaboration (LSC) will release a paper based on data taken with the LIGO instruments between April and September 2019. The LSC and LIGO Laboratory have denied a request to release that data when the paper becomes public: <http://bit.ly/gravityscience>.

To respond to the specific questions:

- What current limitations exist to the effective communication of research outputs (publications, data, and code) and how might communications evolve to accelerate public access while advancing the quality of scientific research? What are the barriers to and opportunities for change?

A *timely* release of data is of the essence: the usefulness of data does not remain unchanged as time goes by. On the contrary it degrades. The reason is that the data itself becomes harder to interpret: people who have designed the experiments and collected the data move-on to other jobs and the measuring apparatus is modified or dismantled. Furthermore, the data might contain evidence of signals or sources which could be seen with other instruments (for example in this case, radio or optical telescopes). However such followup detections become less likely or impossible if the release is not timely, because the sources fade with time.

If data is released only when it has become stale, the incentive for scientists to use it for high-risk/high-gain break-through science decreases significantly: as time goes by, new (proprietary) data is produced, and this devalues the “old” data, even if it is the only data accessible to the the public.

- What more can Federal agencies do to make tax-payer funded research results, including peer-reviewed author manuscripts, data, and code funded by the Federal Government, freely and publicly accessible in a way that minimizes delay, maximizes access, and enhances usability? How can the Federal Government engage with other sectors to achieve these goals?

Federal agencies have to seriously and *critically* review data-release plans and mandate data release policies with minimal data-release latencies. If the results can be published based on that data, then it should be released at the same time. Many federally funded research projects, for example at NASA, already share their data in a timely manner. Their practices should be broadly adopted.

- How would American science leadership and American competitiveness benefit from immediate access to these resources? What are potential challenges and effective approaches for overcoming them? Analyses that weigh the trade-offs of different approaches and models, especially those that provide data, will be particularly helpful.

Why broad access to data is important in fundamental research: with access to the data, results can be independently validated and novel investigations can be carried out. Without data, neither of those activities is possible. This transparent process of verification and building on the work of others is at the very heart of science, and has helped the USA to build a leading position in many fields.

Access to the data enables independent groups of scientists to engage in a meaningful scientific discourse. It also allows competition to happen, which is a powerful driver of research. Without open competition one can not establish academic excellence. Without open competition, deserving early career scientists have no way of establishing themselves independently.

Large scientific collaborations: very large scientific Collaborations are often based on flat authorship rules on scientific papers, which can include thousands of authors. In contrast to the norm in scientific work, authorship is not based on specific contributions to the work or to the paper, but is used to reward loyalty and service to the Collaboration. In some cases, people who have contributed to the work are not authors, but the author list includes others who have made no contribution!

These Collaborations can enact very restrictive (i.e. long latency) data-release policies, in order to “protect themselves from outside competition”. This in turn supports a dysfunctional power-and-reward system. In such cases, the only way to change a restrictive data-release policy is from the outside, through appropriate mandates. Such mandates may be opposed by the Collaborations who fear external competition, but those are exactly the Collaborations that urgently need new policies, for the good of science.

Resources to support the data releases: The right balance needs to be found between curating the data, the metadata, and the tools to support the public release and the latency that doing this introduces in the release itself. A good rule of thumb is that if one can publish results based on the data, then the data is in good enough shape for release.

The users of the data releases should be part of the decision-process on these trade-offs. If resources are needed, the users community should be given the opportunity to contribute in order to decrease the latency. These are principles that all data management plans should adopt.

International collaborations: the principles for data-release policies of federally-funded projects cannot be deferred because of the different approach in data-release of the funding agency of a foreign partner.

The data management plans must then be assessed by independent reviewers, leaders in neighboring fields with short-latency data-release plans, representing the broader scientific community and the data users.



March 13, 2020

Ms. Lisa Nichols
Assistant Director for Academic Engagement
Office of Science and Technology Policy (OSTP)
Delivered Electronically: publicaccess@ostp.eop.gov

RE: RFI Response- Public Access

Dear Ms. Nichols:

On behalf of the American Society for Dermatologic Surgery Association (ASDSA), a surgical specialty organization representing over 6,300 physician members, I am writing to express our concern regarding a proposed policy that would jeopardize the intellectual property of American organizations engaged in the creation of high-quality peer-reviewed journals and research articles and would potentially delay the publication of new research results.

The role of the publisher is to advance scholarship and innovation, fostering the American leadership in science that drives our economy and global competitiveness. As copyrighted works, peer-reviewed journal articles are licensed to users in hundreds of foreign countries, supporting billions of dollars in U.S. exports and an extensive network of American businesses and jobs. In producing and disseminating these articles, we make ongoing competitive investments to support the scientific and technical communities that we serve.

As noted above, we have learned that the Administration may be preparing to step into the private marketplace and force the immediate free distribution of journal articles financed and published by organizations in the private sector, including many non-profits. This would effectively nationalize the valuable American intellectual property that we produce and force us to give it away to the rest of the world for free. This risks reducing exports and negating many of the intellectual property protections the Administration has negotiated with our trading partners.

We write to express our strong opposition to this proposal, but in doing so we want to underscore that publishers make no claims to research data resulting from federal funding. To be clear, publishers both support and enable "open access" business models and "open data" as important options within a larger framework that assumes critical publisher investments remain viable. Under a legacy regulation that is still in force today, proprietary journal articles that report on federally funded research must be made available for free within 12 months of publication. This mandate already amounts to a significant government intervention in the private market. Going below the current 12 month "embargo" would make it very difficult for most American publishers to invest in publishing these articles. As a consequence, it would place increased financial responsibility on the government through diverted federal research grant funds or additional monies to underwrite the important value added by publishing.

In the coming years, this cost shift would place billions of dollars of new and additional burden on taxpayers. In the process, such a policy would undermine American jobs, exports, innovation, and intellectual property. It could also result in some scientific societies being forced to close their doors or to no longer be able to support the publication of U.S.-sponsored science that is key to ensuring that the U.S. remains the world leader in science and technology.

In addition to financing and managing a world-leading peer review process, publishers make extensive investments in education, research, and innovative digital platforms that advance American competitiveness and help ensure the quality and integrity of American science. Undermining the marketplace is unnecessary, counterproductive, and would significantly harm the system of peer-reviewed scholarly communication that fuels America's leadership in research and innovation.

We urge you to oppose this proposed policy, and we look forward to working with the Administration on this matter. Should you have any questions or need further information, please do not hesitate to contact Kristin Hellquist, ASDSA Director of Advocacy and Practice Affairs, at 847-956-9144 or khellquist@asds.net.

Sincerely,

A handwritten signature in black ink, appearing to read "Marc D. Brown". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Marc D. Brown, MD, President
American Society for Dermatologic Surgery Association

cc: Mathew M. Avram, MD, JD, President-Elect
Sue Ellen Cox, MD, Vice President
Dee Anna Glaser, MD, Treasurer
Kavita Mariwalla, MD, Secretary
Murad Alam, MD, MBA, Immediate Past President
Katherine J. Duerdoth, CAE, Executive Director
Kristin A. Hellquist, MS, CAE, Director of Advocacy and Practice Affairs

From: Roger Linington <rliningt@sfu.ca>
Sent: Friday, March 13, 2020 2:28 PM
To: MBX OSTP Public Access <MBX.OSTP.PublicAccess@ostp.eop.gov>
Subject: [EXTERNAL] RFI Response: Public Access

Dear Dr. Nichols,

I am writing in response to the OST RFI concerning "*Access to the Results of Federally Funded Scientific Research*". I am a US citizen working in Canada, and currently hold funding through the NIH.

My research program focuses on natural products discovery, and the development of tools for accelerating bioactive compound identification. As part of this effort my group has created an open access database of microbial natural product structures, termed the Natural Products Atlas (>www.npatlas.org<). This tool aims to curate the scientific literature for reports of novel natural products, and to provide a standardized format for these data as an open, downloadable resource.

Currently, aggregation of these data is very difficult. Two issues in particular are major challenges in the field. Firstly, the academic publishing model provides no mechanism for associating machine readable representations of structures from articles. This means that structures are created in ChemDraw, depicted in to articles as images, and then re-entered in electronic formats post-publication. Requirements to either provide a machine readable string for each compound (e.g. SMILES) in the paper, or to deposit every new structure into PubChem and list the PubChem IDs in the paper would greatly accelerate the digitization and interoperability of online resources.

Secondly, most of the experimental data that supports structure assignment is also not available electronically. Particularly NMR and mass spectrometry data are often only included as pdfs, greatly limiting their utility. NCCIH is working on funding a new program to create an NMR repository for natural products data (NP NODE). It would be very valuable to require NIH-funded researchers to deposit original NMR data in this new repository. This will reduce instances of academic dishonesty, increase the availability of reference data for the creation of new tools, and increase the care and attention that researchers place on structure assignments, knowing that their original data can be reviewed at any time by any outside expert.

I encourage the NIH to consider mandatory deposition of structures, MS and NMR data for all new compounds as a requirement for continued funding, in the same way that paper deposition is required in PubMed.

Yours sincerely,

Roger Linington

Associate Professor
Canada Research Chair in High-Throughput Screening and Chemical Biology
Director, Centre for High-Throughput Chemical Biology

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HTCB website: ><https://www.sfu.ca/htcb.html><

Natural Products Atlas: ><https://www.npatlas.org><

To Lisa Nichols, Assistant Director for Academic Engagement, Office of Science and Technology Policy (OSTP) publicaccess@ostp.eop.gov

Regarding Request for Information (RFI): Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research

We are pleased to see developments supporting broad public access to the peer-reviewed scholarly publications, data and code that result from federally funded scientific research.

We provide information services across many sectors with substantial impact in health care, research and education. Federally funded research makes substantial contributions and more efficient access will accelerate and mobilize these impacts.

The most common information that people seek, however, is not so much the scholarly publication, the data, or even the code. The most common information sought is the results. Although the results may be found in the publication, data or code these methods of communication are not the most efficient way to provide the results in the computer age. The format for display in scholarly publications is limited and not amenable to altered views that meet the needs of readers or searchers seeking precise results at a specific moment in a specific context.

Public access to computable expressions of research results would enable American innovation, leadership and competitiveness to produce untapped possibilities for advancing the use of research knowledge to improve our daily lives, and in turn provide a greater societal return on investment in federally funded research.

Though not yet established, a standard for computable expression of research results is a reasonable expectation in a short timeframe. As an open project, we are developing a data standard for the computable expression of evidence and statistics. We believe our approach has the potential to unleash the value of research results, and our approach is well coordinated with standards for the computable expression of health information that has established federal expectations for pervasive use.

Our vision is for federally funded research results to be available in computable form with a universally accepted standard that enables a more rapid uptake of research results in research, policymaking, education, healthcare systems, and decision support.

Health Level Seven International (HL7®) is a standards development organization, founded in 1987, and provides a comprehensive framework and related standards for the exchange, integration, sharing and retrieval of electronic health information that supports clinical practice and the management, delivery and evaluation of health services. **Fast Healthcare Interoperability Resources (FHIR®)** is a standard for health care data exchange, published by HL7.

On March 9, 2020 the U.S. Department of Health and Human Services (HHS) finalized two transformative rules that will give patients unprecedented safe, secure access to their health data. These two rules, issued by the HHS Office of the National Coordinator for Health Information Technology (ONC) and Centers for Medicare & Medicaid Services (CMS), implement interoperability and patient access provisions of the bipartisan 21st Century Cures Act and support President Trump's MyHealthEData initiative. MyHealthEData is designed to empower patients around a common aim – giving every American access to their medical information so they can make better healthcare decisions. Together, these final rules mark the most extensive healthcare data sharing policies the federal government has implemented. Within these rules, the Application Programming Interface (API) certification criterion requires the use of the HL7 FHIR standard.

With respect to federally funded research, the National Institutes of Health (NIH) is supporting the use of FHIR through multiple initiatives (<https://datascience.nih.gov/fhir-initiatives>). NIH is encouraging researchers to explore the use of the FHIR standard to capture, integrate, and exchange clinical data for research purposes and to enhance capabilities to share research data.

FHIR has primarily been developed to support the electronic exchange of electronic health data (which may take the form of observations of individual persons such as patients or research participants) and was not previously developed to support the electronic exchange of research results (which may take the form of statistical summaries of data).

In 2017 members of overlapping technology committees within multiple leading organizations in evidence-based medicine communities (Guidelines International Network, Cochrane, and the Grading of Recommendations Assessment, Development and Evaluation [GRADE] Working Group) expressed a desire to work together towards interoperability standards for efforts of research results analysis, systematic review development, guideline development, clinical decision support, and related activities.

In 2018 we recognized FHIR as an ideal standard to provide this interoperability and support interoperability between the evidence-based medicine and patient care communities. An HL7 project was approved to extend FHIR resources to evidence-based medicine knowledge assets (**EBMonFHIR**), and this project was sponsored by the HL7 Clinical Decision Support Work Group and cosponsored by the HL7 Clinical Quality Information and HL7 Biomedical Research and Regulation work groups.

Over two years of weekly meetings and five 2-day Connectathons, and with active participation from many (including EBSCO Clinical Decisions division of EBSCO Information Services, Johns Hopkins University, University of Colorado, McMaster University, Dynamic Content Group LLC, Duodecim Medical Publications Ltd. [a publisher of the Finnish Medical Society], and MAGIC [a Norwegian non-profit research and innovation program]), we have established an information model that can be used to **express evidence and statistics in computable form**.

The **Evidence Resource** structure can be viewed at <http://build.fhir.org/evidence.html> and a simple summary description of this structure can be considered:

1. **Metadata elements**, which can include who created the resource and related artifacts such as journal article citations;
2. **variableDefinition elements**, which include the variableRole (eg, population, exposure, or measured variable), the definition of what was observed, the definition of what was intended, and directnessMatch (an optional element that can be used to express concern when the observed variable does not match the intended variable);
3. **synthesisType and studyType elements**, which can code the type of evidence (eg, meta-analysis of randomized trials);
4. **statistic and distribution (ordered group of statistics) elements**, which are described below; and
5. **certainty element**, which provides explicit specification of the certainty of the evidence and reasons for uncertainty.

The **EvidenceVariable Resource** structure can be viewed at <http://build.fhir.org/evidencevariable.html> and supports explicit definitions of the variables using one or more characteristics.

The **Statistic Datatype** structure can be viewed at <http://build.fhir.org/statistic.html> and a simple summary description of this structure can be considered:

1. **statisticType element**, which classifies the statistic (eg, relative risk);
2. **quantity element**, which includes value, comparator (eg, greater than or equal to), and unit of measure;
3. **sampleSize element**, which has subelements to account for variations such as numberOfParticipants and knownDataCount; and
4. **attributeEstimate element**, which can handle many statistics about the statistic (eg, confidence interval, p value, heterogeneity measure).

We have developed a robust model to support expression of many types of evidence and statistics. Computable expression with a CodeableConcept datatype is used for many elements across this model, including:

- Evidence.variableDefinition.variableRole
- Evidence.variableDefinition.directnessMatch
- Evidence.synthesisType
- Evidence.studyType
- Evidence.certainty.rating
- Evidence.certainty.certaintySubcomponent.type
- Evidence.certainty.certaintySubcomponent.rating
- EvidenceVariable.characteristic.definitionCodeableConcept

- EvidenceVariable.characteristic.method
- Statistic.statisticType
- Statistic.attributeEstimate.type
- Statistic.attributeEstimate.estimateQualifier.type

We have mapped code sets and value sets to existing statistical ontologies and other resources where available, but this has not been fully mapped before. Ultimately, we will need to add codes and value sets as use cases show the need. For example, when reporting research results it is important to report the precise scale used for measurement or classification. This could be supported efficiently if the measurement scales are already coded. For an example related to reporting research in stroke care we found the modified Rankin scale has LOINC code (75859-9) but the ASTRAL score does not.

We have developed data entry forms to enable a researcher to enter data in understandable terms and have it automatically converted to JSON or XML expressions in the FHIR format. We have not yet created this for scaled systems or others not directly working on the EBMonFHIR project. We are currently working on publishing the first instances of computable evidence artifacts.

The EBMonFHIR project is an open project (project website <https://confluence.hl7.org/display/CDS/EBMonFHIR>, open meetings occur on Thursdays at 9 am Eastern) and OSTP participation is welcome to adapt and further develop FHIR Evidence and related resources to meet the needs for public access to results from federally funded research.

Sincerely,

Brian S. Alper, MD, MSPH, FAAFP, FAMIA

Chief Medical Knowledge Officer, EBSCO Information Services

Founder of DynaMed

Lead, EBMonFHIR project

From: Brian Alper MD <BAIper@EBSCO.COM>
Sent: Thursday, May 7, 2020 9:34 AM
To: MBX OSTP Public Access <MBX.OSTP.PublicAccess@ostp.eop.gov>
Subject: [EXTERNAL] RE: RFI Response: Public Access

As we worked on the EBMonFHIR efforts described below and faced the COVID-19 challenges we create a COVID-19 Knowledge Accelerator (COKA) effort to widen the support for communicating scholarly publications.

In addition to the Evidence and EvidenceVariable standards we have now created standards for Citation, EvidenceFocus and EvidenceReport types of data, and are in discussions to use these standards for improving research reporting in ways such as ClinicalTrials.gov

We may be able to help in significant ways as the demand for science is recognized much more acutely with the COVID-19 pandemic.

Brian S. Alper, MD, MSPH, FAAFP, FAMIA

Chief Medical Knowledge Officer, EBSCO Information Services

Founder of [DynaMed](#)

Office: 978-356-6500 x2749 | Cell: 978-804-8719

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Quote for the moment: I cannot do all the good that the world needs, but the world needs all the good that I can do. - Jana Stanfield

Thought for the moment: [COVID-19 KNOWLEDGE ACCELERATOR](#) is how we overcome...  

Information for the moment: COVID-19 Information Portal at [>https://covid-19.ebscomedical.com/<](https://covid-19.ebscomedical.com/)

March 12, 2020

Re: RFI Response: Public Access

Dear Office of Science and Technology Policy:

I am very pleased to support the Office of Science and Technology Policy and the National Science and Technology Council's Subcommittee on Open Science efforts to facilitate implementation and compliance with the 2013 memorandum Increasing Access to the Results of Federally Funded Scientific Research and to address recommended actions made by the Government Accountability Office's report.

My name is David Fajgenbaum. I am a physician-scientist at the University of Pennsylvania, Castleman disease patient, cancer survivor, and co-founder of a patient-powered research organization called the Castleman Disease Collaborative Network. I am alive today thanks to a drug that was developed 30 years ago for another condition that I repurposed to treat my disease ("His doctors were stumped. Then he took over. NY Times, February 4, 2017. <https://nyti.ms/2kzaTet>). If not for my access to the published medical literature, particularly the results of federally funded research, I would not have had the data needed to make the discoveries that led to my identifying and repurposing this drug. Other patients with Castleman disease are also benefiting from this drug and we've recently launched a clinical trial to study its efficacy. Unfortunately, most other Americans suffering from deadly conditions like my own would not have had access to these critical data that led to my discovery.

The primary limitation that exists to the effective communication of research outputs is that the results published in peer-reviewed journals are not available to most people. This impedes motivated citizen-scientists from being able to access information that could be helpful to them. While nearly all academic institutions provide access to publications, scientists at disease research organizations, start-up biotech and pharmaceutical companies, and physicians not affiliated with academic institutions also do not have free and open access to these publications and data. Requiring journals to make federally-funded research freely available would be a major step forward for scientific progress. Having a central repository of these papers that is tied together with their corresponding datasets that is user friendly and easily searchable would also be useful.

The clearest potential benefit from open access to federally-funded publications, particularly previous publications related to FDA-approved treatments, would be that this could push forward research into drug repurposing. There are an estimated 10,000 human diseases and 1,500 drugs approved to treat approximately 2,500 of those diseases. Therefore, about three-quarters of all diseases and about 95% of rare diseases, do not have a single FDA-approved therapy. However, many diseases share common mechanisms that render them susceptible to similar treatments.



David C. Fajgenbaum, MD, MBA, MSc
Assistant Professor of Medicine
Translational Medicine & Human Genetics

Unfortunately, limited research is currently focused on scouring the published medical literature to identify potential new uses for existing drugs. Access to data on approved uses and scientific data on potential secondary indications or mechanisms of action could potentially advance these efforts to identify new uses for existing drugs. This approach of repurposing sirolimus for Castleman disease is saving my life and drug repurposing has had a tremendous impact in a number of other fields like thalidomide for multiple myeloma and anti-malarial drugs for rheumatologic illnesses. Currently, a number of drugs are being tested for their potential efficacy against COVID-19. The more freely available high quality publications are, the more progress we'll make to save the lives of patients with deadly diseases, like me.

Sincerely,

A handwritten signature in black ink that reads "David Fajgenbaum". The signature is written in a cursive style with a large, sweeping flourish at the end.

David Fajgenbaum, MD, MBA, MSc
Assistant Professor of Medicine, Translational Medicine & Human Genetics
Associate Director, Patient Impact, Orphan Disease Center, University of Pennsylvania
Co-Founder & Executive Director, Castleman Disease Collaborative Network

Rescuing Biomedical Research (RBR; rescuingbiomedicalresearch.org) appreciates the opportunity to respond to the Office of Science and Technology Policy's request for information on "Public access to peer-reviewed scholarly publications, data and code resulting from federally funded research."

RBR is a group of 22 leaders with extensive experience in catalyzing policy changes that address the systemic flaws in the biomedical research enterprise. Founded in 2014, RBR is a leader in bringing effective, creative and valuable changes to the policies and culture of biomedical research. This includes reforms such as open access and accelerating the pace at which scientific results are communicated.

RBR supports the Scholarly Publishing and Academic Resources Coalition (SPARC) and associated research and academic libraries in their recent letter addressed to the President of the United States regarding the benefits of full, open access to published scientific articles. <https://sparcopen.org/news/2019/sparc-letter-to-the-white-house-regarding-rumored-open-access-policy/>

The SPARC letter requests the Trump administration change federal policy to require full, open access to taxpayer-funded research immediately upon publication, rather than allow a waiting period of up to 12 months after publication. Open access policies will benefit universities, scientists, patients and accelerate the overall pace and conduct of research. Furthermore, the global community is coalescing around open access policies, and the United States should remain at the forefront of these developments.

COMMENT - OPEN ACCESS POLICIES FOR SCHOLARLY PUBLICATIONS

To whom it may concern,

The US Federal Register posted a request for information on how best to design open access policies for scholarly publications and data resulting from federally funded research recently. The Trump administration reportedly may issue an executive order on federally funded research that would make it easier for everyone to access publicly funded research. In practice, this means that once federally funded research is completed, it would be immediately made available to the public (instead of being kept behind a paywall for one year before it is made public). However, publishers (more than 125 scientific publishers of scientific journals) and large scientific organizations condemn this potential executive order since it could potentially "jeopardize the intellectual property of American organizations engaged in the creation of high-quality peer-reviewed journals". It is important to take into account the adjustment mechanisms that could follow after the introduction of a zero-embargo and the consequences these could have on the different actors involved: the researchers, the publishers, the government, and the general public.

First, it could be expected that publishers would try to make up for the lost funds by increasing the submission and publication fees required from the researchers. This in turn, would mean that more vulnerable researchers would be unable to afford these increased charges, consequently aggravating inequalities existing in the academic publishing process. An intervention from the government could help alleviate the researchers affected, although it is important to consider the expected costs of increasing subsidies for researchers, the potential subsidy allocation mechanism, and the negative externalities that this would create to the international community.

Second, the government could pay publishers the amount the publishers would have lost from the free paywall period. In this way, the publishers have a more steady flow of income (since previous evidence shows that subscriptions from the public can vary immensely) and the government has more regulatory and overseeing control over the publishers. With the government as the buyer of the research produced, more publishing agencies may want to enter the market, which could expand the scope of published research, but also dilute its quality. Further, this type of a scheme could be very expensive for the government wherein they are providing grants to researchers for conducting the research and they are paying publishers to do their job. Hence, whether or not this policy is favorable will depend on the costs of the government to be able to pay both stakeholders in order to protect the public from paid research fees.

Finally, it is possible that a government-led publishing platform could publish research free of cost to the public to access. This method would undermine the need for an external publishing agency. Since the biggest revenue losers in the event that the government does remove the paywall period and provides research access free of cost to the public are the privately-funded publishers, they may try to extract money in other ways (such as charging researchers fees to publish). In order to avoid this, one radical move could be to have a centralized publishing platform in government agencies. This may to some extent reduce the prestige or the competitiveness nature of being able to publish in a few top journals in the respective fields. Hence, to evaluate this policy, we would need to consider the importance of having a higher quantity of research produced, or that of better quality, and the extent to which the two can be maintained in balance. Closing down or nationalizing any external publishing agency could be a highly anti-political move and frustrate many publishing agencies; hence, it does not seem like a feasible short term intervention, rather a process that could be gradually phased in over time.

Overall, we believe the priority should remain to disseminate and advance scientific knowledge, and foster a scholar community that maximizes the exchange of ideas and information. In this sense, policies that promote open access are desirable but any policy decision should consider input from all of the parties involved as well as the potential consequences, with a plan to mitigate any damage caused. We support previous proposals such as the FASTR Act, and welcome further efforts towards an open access uniform law that provides guidance for academic research.

Sincerely,

Suhani Jalota and Alain Pineda

References



March 12, 2020

Kelvin K. Droegemeier, Ph.D.
Director
Office of Science and Technology Policy
Executive Office of the President
Eisenhower Executive Office Building
1650 Pennsylvania Avenue
Washington, DC 20504

Submitted electronically at: <https://www.federalregister.gov/documents/2020/02/19/2020-03189/request-for-information-public-access-to-peer-reviewed-scholarly-publications-data-and-code>

Re: Request for Information: Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research

Dr. Droegemeier:

AMIA appreciates the opportunity to comment on the Request for Information (RFI) seeking input on how to increase access to unclassified published research, digital scientific data, and code supported by the U.S. Government.

Biomedical informatics is the science of how to use data, information, and knowledge to improve human health, the delivery of health care services, and the execution of scientific research. AMIA is the professional home for more than 5,500 informatics professionals, representing frontline clinicians, biomedical researchers, public health experts, librarians, data scientists, and educators who bring meaning to data, manage information, and generate new knowledge across the healthcare system and research enterprise. AMIA members advance health and wellness by implementing and evaluating digital health interventions, innovations, and public policy across settings and patient populations, adding to our collective understanding of health in the 21st century through peer-reviewed journals and scientific meetings.

AMIA strongly supports efforts to make peer-reviewed publications, data, and computer code developed from federally funded research publicly available. There are three primary tensions that this policy must navigate or otherwise recognize: (1) the business interests of scientific membership organizations who derive revenue from access to peer-reviewed publications; (2) the imperative to make tax-payer funded research results easily and widely available; and (3) incentives for academia to address long-standing deficiencies in professional advancement and institutional support systems for professionals who create/contribute to datasets and software that are useful to the public.

March 12, 2020

Through actions taken over the last several years, AMIA has cultivated one of the nation’s premier peer-reviewed publications in biomedical and health informatics, the *Journal of the American Medical Informatics Association* (JAMIA).¹ Articles published in JAMIA are available within twelve months of publication through PubMed Central,² we encourage authors to deposit data used in their analysis in Dryad free-of-charge, and we published a 2019 Editorial focused on transparency, reproducibility, and replicability with recommended strategies for JAMIA authors.³ Additionally, AMIA launched *JAMIA Open* in 2019 as a single-blind peer-review, online-only, and Gold Open Access journal. As part of *JAMIA Open* submission requirements, we state:

For articles involving the description of approaches or algorithms using computational techniques, authors are encouraged to provide a link to a publicly accessible code repository (e.g., GitHub or BitBucket) and, as applicable, reference to a Jupyter notebook for sharing functional code examples. Referenced non-sensitive data sets in manuscripts must be publicly accessible through repositories like Dryad.⁴

AMIA would like to highlight the NIH Open Access Policy as an exemplar policy. We support the requirement that all manuscripts accepted for publication in peer-reviewed journals where the research was funded by federal agencies, be deposited into PubMed Central (PMC) so that they will be freely available within 12 months of publication. AMIA further supports the NIH Open Access Policy by having its flagship journal, the *Journal of the American Medical Informatics Association* (JAMIA) set up as a PMC Journal at the NIH Portfolio Level where all of the articles reporting on federally funded research are automatically deposited into PubMed Central and freely available within 12-months of publication.

AMIA also publishes an open access journal, *JAMIA Open*, also a PMC Journal at the Full Participation Level, where all of its articles are freely available immediately upon publication. *JAMIA Open* requires all accepted manuscripts to “have a patient/community facing abstract that highlights key findings.”⁵ AMIA endorses the journal *Applied Clinical Informatics (ACI)*⁶ that is also a PMC Journal at the Full Participation Level where all of its articles, regardless of the funding source are freely available through PMC within 12-months of publication.⁷

By supporting the NIH Open Access Policy, and by establishing corresponding open publications with associated open policies for data and software, we believe that we are setting an example for other associations and scientific organizations. This approach generates enough revenue for investment in open publications and open policies, and AMIA encourages OSTP to strike a similar balance across other domains of federally funded research.

¹ <https://academic.oup.com/jamia>

² <https://pubmed.ncbi.nlm.nih.gov/>

³ Bakken, S. The journey to transparency, reproducibility, and replicability, *Journal of the American Medical Informatics Association*, Volume 26, Issue 3, March 2019, Pages 185–187, <https://doi.org/10.1093/jamia/ocz007>

⁴ https://academic.oup.com/jamiaopen/pages/General_Instructions

⁵ Ibid.

⁶ <https://www.thieme.com/books-main/clinical-informatics/product/4433-aci-applied-clinical-informatics>

⁷ <https://www.thieme.com/books-main/clinical-informatics/product/4339-aci-open>

March 12, 2020

AMIA also recommends that OSTP understand the various cultural dynamics, institutional support systems, and policy levers necessary to increase access to published research, scientific data, and software code supported through federal funds. Specifically, we have established policy principles and positions⁸ that may be applicable to policymakers at OSTP on this subject, stating our support for:

- Dedicated funding from research sponsors for data curation and sharing efforts (preferably built into funding opportunity announcements) so there are sufficient incentives to share, collaborate, and advance data sharing capabilities,⁹ and
- Institutional rewards for those who create or contribute to public datasets and software that others find useful so that incentives exist for those who create as well as those who analyze data.¹⁰

First, dedicated and specified funding for public access efforts in grant awards would clarify expectations for grantees and their institutions. Previously, we have asked that the NIH establish a funding policy for data management and sharing activities that earmarks a percentage (at least five percent)^{11, 12} of a grant award for such activities, rather than merely allow for such activities to be included in NIH budget requests. We recommend OSTP consider similar policies to incentivize public access.

Second, we encourage OSTP to consider well-established software engineering practice principles, which encourage the “thinking of others” upfront. Specifically, policies and grants should be assessed from the perspective of public good, rather than the academic institution because these institutions may see federally funded results as intellectual property, rather than a product of the public domain. We encourage OSTP to investigate ways to provide more requirements within the grant award process to allow researchers to make data, source code, and other works openly available.

Finally, we recommend that OSTP work with funding agencies to ensure that they enforce data deposit requirements for publicly funded research. Even mandated policies and depositories are incomplete without an enforcement mechanism.

⁸ <https://www.amia.org/sites/default/files/2018-2019-AMIA-Health-Informatics-Policy-Priorities.pdf#page=12>

⁹ Borne, P., Lorsch, J., Green, E., “Perspective: Sustaining the big-data ecosystem,” *Nature*. November 2015. 527, S16– S17

¹⁰ Piwowar, H., Vision, T., “Data reuse and the open data citation advantage,” *Peer J*. 2013. 1:e175

¹¹ An advisory group to the European Commission has recommend that “well budgeted data stewardship plans should be made mandatory and we expect that on average about 5% of research expenditure should be spent on properly managing and stewarding data.” Commission High Level Expert Group on the European Open Science Cloud. “Realising the European Open Science Cloud.” 2016. ISBN 978-92-79-61762-1 doi:10.2777/940154.

https://ec.europa.eu/research/openscience/pdf/realising_the_european_open_science_cloud_2016.pdf

¹² Similar to the High Level Expert Group, the European Research Council Scientific Council has recognized that “data annotation and deposition are time-consuming activities. ERC grant money can be specifically earmarked for this purpose, for example to contribute to the salary of a research assistant or to the costs of a commercial provider” via the report “Open Research Data and Data Management Plans, Information for ERC grantees.” Version 3.1. 3 July 2019.

https://erc.europa.eu/sites/default/files/document/file/ERC_info_document-Open_Research_Data_and_Data_Management_Plans.pdf

March 12, 2020

AMIA is eager to engage with OSTP as it undertakes this important work. Thank you for considering our comments. Should you have questions about these comments or require additional information, please contact Jeffery Smith, Vice President of Public Policy at jsmith@amia.org or (301) 657-1291. We look forward to continued partnership and dialogue.

Sincerely,



Patricia C. Dykes, PhD, RN, FAAN, FACMI
Chair, AMIA Board of Directors
Program Director Research
Center for Patient Safety, Research, and Practice
Brigham and Women's Hospital

Enclosed: AMIA response to OSTP Request for Information (RFI) seeking input on to increase access to unclassified published research, digital scientific data, and code supported by the U.S. Government

March 12, 2020

What current limitations exist to the effective communication of research outputs (publications, data, and code) and how might communications evolve to accelerate public access while advancing the quality of scientific research? What are the barriers to and opportunities for change?

When considering release of findings, it is possible that an organization where a researcher works sees these scholarly output as intellectual property that they feel should be protected. This may contradict the opinion of the researcher, who wishes to release fully their research output, and may in turn preclude a researcher from disseminating research outputs as openly as they would like, or otherwise face institutional discipline (e.g., policy/contract violation), or litigation (e.g., lawsuit from electronic health record [EHR] vendor).

This is a challenge, as federally funded research projects that integrate with proprietary software - such as a healthcare project that is integrated with a commercial EHR - may necessarily include information about the proprietary software. There is then a controversy about what should be publicly available, and what should be kept protected. Similarly, institutional partnerships within a research project may similarly complicate what can and should be released. Again as an example in the healthcare space, if a health system's EHR team provides support during the development of a research project, but that team is not funded as part of the research study, what involvement does the health system have in redacting items they feel are proprietary?

What more can Federal agencies do to make tax-payer funded research results, including peer-reviewed author manuscripts, data, and code funded by the Federal Government, freely and publicly accessible in a way that minimizes delay, maximizes access, and enhances usability? How can the Federal Government engage with other sectors to achieve these goals?

Clear guidance will be needed from Federal agencies with respect to what must be made publicly available, with explicit instructions for how to navigate (perceived) proprietary knowledge ownership issues.

Additionally, Federal agencies should consider as part of the grant review and award process more formal review of dissemination plans related to publicly available scholarly output. For example, if a grant application indicates that source code will be made publicly available, does the research team have a proven history of releasing open source software? Does the dissemination plan specify which open source license will be used? Ensuring these details are clearly specified within a grant application will aid grant reviewers and the respective Federal funding agencies in ensuring a research team has a comprehensive plan in place for dissemination.

In addition, to enhance the usability of open source research outputs, Federal agencies should again look at the capabilities of the grant applicant. Software that is poorly architected, developed, tested, and/or documented cannot be effectively disseminated. For more complex or involved software development efforts, a grant applicant may be encouraged to engage a Research Software Engineer (RSE) who has more experience with developing and disseminating software as part of research projects. The recognition of the RSE as a discipline has expanded globally and more recently in the United States (<https://us-rse.org/>).

March 12, 2020

How would American science leadership and American competitiveness benefit from immediate access to these resources? What are potential challenges and effective approaches for overcoming them? Analyses that weigh the trade-offs of different approaches and models, especially those that provide data, will be particularly helpful.

Better public access to peer-reviewed publications, data, and code would allow more commercial entities and entrepreneurs to concurrently translate a research finding into the best possible product. This is in contrast to more closed models where a single entity receives access to the research finding, and provides only a single solution (which may not be optimal).

In addition, our previous recommendations to allow researchers to publish or otherwise disseminate software or data that might be seen as proprietary could (if not properly addressed) have a negative effect of hindering public-private partnerships, thereby having the opposite intended outcome by stifling innovation. Building upon our previous example of software integrated with a commercial EHR, that EHR vendor may restrict or prohibit future integration with their platform if they fear it will result in proprietary information being shared publicly. Federal agencies should develop guidance that protects proprietary data or software (or knowledge that would allow recreation of the proprietary pieces) from being made publicly accessible, by promoting the use of reasonable surrogates. For software, this could be the use of “stubs”¹³ – workable pieces of software code that abstract away proprietary implementation details and allow the software to continue to otherwise operate. While a specific example, it illustrates that there are strategies that can address IP concerns. A consideration for Federal agencies then is considering these strategies in the grant review process, and that additional support may be needed for training programs to guide new researchers in these processes.

¹³ https://en.wikipedia.org/wiki/Method_stub

TO: Lisa Nichols, Assistant Director for Academic Engagement, Office of Science and Technology Policy

RE: Request for Information: Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research

DATE: March 11, 2020

Thank you for taking the time to seek input from stakeholders on this very important issue. I am writing today in my role as an academic librarian at a midwest R2 public research institution. My duties here are as the scholarly communications librarian and liaison to the School of Nursing and School of Health Sciences.

I wish to speak about the restrictions on access to publicly funded research and the impact on students, researchers, and professionals. I teach students who are graduating into professional practitioner fields that rely on evidence-based practices to provide the best possible care to patients. While these students are enrolled in the university they have access to our subscription databases and interlibrary loan services, but once they graduate this access goes away. After which, while they are working in their fields of practice they have to struggle to incorporate the evidence-based practice methods that were mandated during their degree programs because they can not access the latest research. Without some affiliation to a prestigious institution, the cost to obtain the latest research publications is too high for many individuals trying to run their independent practices or working in public or non-profit health organizations.

Even universities and libraries with generous budgets can not purchase access to all published research literature that is needed to conduct a comprehensive research. Who has access is an equity issue and one that is deeply unfair to all the stakeholders in the research lifecycle, except the publisher. Universities pay for the creation of the research by employing scholars and maintaining facilities and services, researchers produce the research outputs and then simply give away FOR FREE the results and their intellectual property to for-profit publishers. When this research is federally funded this essentially becomes a subsidy paid directly to the publishing industry with taxpayer dollars.

Publicly funded research universities conducting publicly funded research that is then locked away either by expensive subscriptions, publishing embargoes or restricted by the researchers themselves who aren't sharing their data, removes access for all potential users. A federal government public access policy must include free immediate access to **all publically funded research outputs**, including data and code. The current 12-month embargo shuts out the public who funded the research, including scholars, educators and students, slowing down scientific progress.

Consider if you had a loved one sick with cancer who might be helped by a new breakthrough but you weren't allowed to read about it until 12 months after it was released because you weren't affiliated with a high budget research institution. Would you feel the government policy was written for you as a taxpayer or for corporations who are making money by limiting your access? Restricting access to this science can be seen as not only unethical but immoral.

A new policy must go beyond just readable access to include the ability for researchers to data-mine the results and machine interoperably of data and code. Anything less is continuing to restrict the development of science and discoveries. Researchers are spending time and money collecting data that might have already been collected and potentially wasting limited funds. If research output and data were openly available the pace of scientific discovery can be accelerated and expanded to include all citizens not just those privileged to work at elite institutions.

At present, the United States is quickly falling behind the EU, Canada, the United Kingdom and many other countries that have extensive open access policies that ensure their publicly funded research can be found and utilized. If we do not act soon these other nations will surpass the USA in developing high impact research and discoveries. For US institutions to remain competitive, for the USA to be the leader in scientific and technical, health innovation it must be US researchers' scholarship and data that is discoverable by global scholars. Restricting access allows other nations to step up and lead.

Simply put, scholars, scientists, researchers, and the public can't use what they can't find, read and incorporate into their work and lives. Any new government policy must require that following:

- The final peer-reviewed manuscripts or published articles to be made available immediately upon publication and made available in open and machine-readable formats that fully enable productive reuse including text/data mining and computational analysis.
- Articles must be openly licensed to ensure full utility. (CC-By or similar license, or public domain designation)
- Data (and code, software, etc.) needed to validate/replicate the conclusion of the article should be made immediately available.
- The long-term preservation of final peer-reviewed articles or published versions and supporting data should be provided via either a digital repository maintained by the Federal agency or in any repository meeting the following criteria:

A National Open Access policy can be realized in a cost-effective manner. By implementing a repository-based Open Access policy, the U.S. can gain the benefits of broadening access to its taxpayer-funded research outputs without breaking the bank.

These policies are becoming the global norm. Providing open access to outputs of publicly funded research is a widely accepted international policy strategy to increase the government's return on investment in research. Many countries have begun to develop new business models that find innovative ways to transform our current models into new open access models. The Max Planck Digital Library and the OA2020 initiative, as well as Horizon 2020 and Plan S, are all working on transforming the scholarly communication landscape to guarantee access.

Libraries are committed to working in partnership with research administrators in our institutions to support efficient, cost-effective research support services to improve research and data management and sharing, and to reduce the compliance burden on investigators. Without any increase in our budgets or staffing numbers, we have stepped up to help mitigate this broken system but developing open access publishing funds and institutional repositories. Libraries have transformed staff to support researchers with publishing and data management services. Library subscription dollars currently play a significant role in supporting the operations of scholarly societies and libraries are committed to working with scholarly societies (and other academy friendly players) on financial risk-mitigation strategies to smooth their transition to open access. We want to work with societies to develop new models to support open and equitable sharing of research outputs of all kinds across the full research lifecycle.

An open access policy will improve the rigor and reliability of taxpayer-funded research by providing more transparency and the ability for easier verification of results. This will, in turn, improve the public trust in science – and in U.S. government-funded science in particular.

Thank you again for facilitating a robust discussion of this important issue, and I encourage you to follow through by implementing a strong immediate open access policy for the results of publicly funded research.

Julia E. Rodriguez
Associate Professor
Nursing, Health Sciences & Scholarly Communications Librarian
Oakland University, Rochester, MI



March 12, 2020

Lisa Nichols
Assistant Director for Academic Engagement
Office of Science and Technology Policy
Executive Office of the President

Caution Urged for Any Proposal that Would Mandate the Free Distribution of Peer-Reviewed Journal Articles

RFI Response: Public Access / Document Number: 2020-04538

Dear Dr. Nichols:

The American Industrial Hygiene Association® (AIHA) urges the Federal government to not pursue any policy that would force Federally funded research published in nongovernmental peer-reviewed journals to be made immediately free. Although making something free is appealing, it can also be misleading. Forcing Federally funded research that appears in peer-reviewed journals to be freely distributed would damage technological and research innovation in the United States and disrupt the private marketplace.

Protect a Vital Engine of American Leadership

There is never a time when damaging U.S. science and technological innovation is appropriate. A better course would be for the Federal government to continue supporting the existing private marketplace system that has served as an engine of progress for the United States, establishing the nation as a global leader. The existing system protects the right of journals to charge for access to their articles, which fuels the ability of those journals to continue producing high-quality content. This system is a key component of the larger knowledge-development machine that has drawn the admiration of many other nations and deserves to be protected.

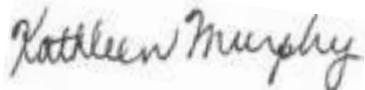
Background on AIHA

AIHA and our members have a reach that extends to millions of people, with solid credibility that is built from 81 years of service to the occupational and environmental health and safety community. Specifically, AIHA has 8,500 members who represent a cross-section of industry, private business, labor, government, and academia. We maintain 68 active Local Sections, more than 50 volunteer groups and have partnership agreements with governmental and nongovernmental organizations representing the full spectrum of worker health and safety vocations. AIHA also produces several award-winning publications, including the *Journal of Occupational and Environmental Hygiene (JOEH)*. The JOEH, which is jointly published by AIHA and the American Conference of Governmental Industrial Hygienists (ACGIH®), is a peer-reviewed publication that provides a written medium for the communication of ideas, methods, processes and research in the areas of occupational, industrial and environmental hygiene; exposure assessment; engineering controls; occupational and environmental epidemiology, medicine, and toxicology; ergonomics; and other related disciplines. For additional information, please visit <http://bit.ly/JOEHAIHA>.

Conclusion and Next Steps

AIHA urges the Federal government to continue supporting the existing system, which promotes knowledge development and innovation, advancing the nation's interests. For additional information, please contact Mark Ames at mames@aiha.org or (703) 846-0730.

Respectfully,



Kathleen S. Murphy, CIH
President
AIHA

From: David States <david@angstrom.bio>
Sent: Tuesday, March 10, 2020 1:29 PM
To: MBX OSTP Public Access <MBX.OSTP.PublicAccess@ostp.eop.gov>
Subject: [EXTERNAL] RFI Response: Public Access

Rapid and open access to the results of federally sponsored research is vitally important to the biotechnology industry.

- Most startup companies do not have paid subscriptions to proprietary journals. The per article access fees are often prohibitively expensive.
- If emerging biotechnology companies are unable to access the results of federally funded research, it will be impossible to commercialize the work or even to identify opportunities for commercialization resulting from federally funded research
- As exemplified by the response to the COVID19 epidemic, rapid prepublication dissemination of research results using open access preprint repositories such as bioRxiv and medRxiv can greatly facilitate not only the dissemination of research results but also greatly facilitate the progress of research.
- Social media commentary on prepublication and published articles has proven to be a useful way to rapidly identify concerns with scientific work and for authors to address those concerns. The use of social media as a complement to deposit of articles with preprint repositories and ultimately publication in academic journals should be encouraged.
- When feasible, data generated by federally funded research needs to be deposited in well structured open access repositories. The progress of the Human Genome Project and many other initiatives since that time was greatly accelerated by the use of Genbank and other public data repositories.
- Supplemental data sections provided by some publishers are not a viable substitute for depositing data in structured public repositories. Supplemental data sections are unstructured, inconsistent, and impossible to access in a uniform high throughput way.
- The current proprietary publishing system is rife with conflicts of interest. Many scientists in leadership positions achieve and maintain those leadership positions through editorships and editorial board memberships for proprietary journals. The journals in turn promote friendly scientists to sustain their own influence. Editors promote colleagues who submit work to journals with which they are affiliated. Lack of transparency in the publication review process and in the academic hiring and promotion process create many opportunities for cronyism and present barriers to the success of meritorious scientists who do not happen to be members of these cliques. The use of open access publication will diminish the influence of high profile journals and editors and will encourage fair and merit based hiring and promotion in academics.

Thank you,

David States

David J States MD PhD FACMI
Chief Scientific Officer

Angstrom Bio
1108 Lavaca St.
Suite 110-329
Austin, TX 78701
Email: David@Angstrom.Bio
Cell: +1 734 250 0030

From: carol barash <cibarash@helixhealthadvisors.com>

Sent: Tuesday, March 10, 2020 12:07 PM

To: MBX OSTP Public Access <MBX.OSTP.PublicAccess@ostp.eop.gov>

Subject: [WARNING: UNSCANNABLE EXTRACTION FAILED][EXTERNAL] Reply to RFI, OSTP

Dear Lisa,

1. Who am I? I write to you as both 30 year genomics/omics/bioethics professional helping the private and public sector, as well as Editor-in-Chief of the Journal Applied & Translational Genomics, which regrettably no longer exists, and as a patient involved in 2 NIH research studies. The issue of open access. Is near and dear to my heart and I'd ask to you read at least one special issue of the Journal: Global Data Sharing in a Free Market Economy. (you can google the name of the journal and this title or see below).

2. The current system is broken and needs serious fixing, particularly in light of the need to share data globally to fight infectious disease, such as but not limited to CovID-19, but to research and find causes of many diseases so as to develop diagnostics and treatments. In the US there are far too many locked data bases that have sizable paywalls, meaning companies or institutions that can afford lawyers to hammer out mutually agreeable limited licensure agreements (for a sizable sum of money) are the only ones capable of accessing data. Much data exists in softwares that are not interoperatable. Most importantly, it is nearly impossible to access one's own data. The paywalls begin with the journals- many of which are owned by Elsevier, which owned my previous journal and their interest is in making money, so much so that they do not give good journals enough time to establish themselves because their demands for ROI are unmeetable, such as publishing 100 articles a year in a new journal. As you know many universities have notably forgone their previous subscriptions to Elsevier/Reed journals or have succeeded in acquiring deals with a lower cost. Universities in the US are cash strapped, and as you know reputable colleges, such as Hampshire College in Western Mass have had to shut down as a result. This means that future scientists are not getting access to valuable information with which to forge their careers. The problem is worse on a global scale, despite the existence of many many open access journals. Researchers in the developing world frequently cannot afford to pay open access fees and so their work is unpublishable in the important journals. Often their institution cannot afford the deals offered by subscription and open access journals. This is why I instituted a sliding fee scale for authors in my journal, requiring proof of need from a Dean.

The problem goes well beyond access to published research. Current and future scientists should be able to share raw data (with the appropriate privacy protections- despite many studies showing how even anonymized data can be re-identified-, code, etc. This is particularly true of publicly funded research which we tax payers pay for. It's offensive, unfair to deny us access to research findings, and for participants access to their data. I now have ME/CFS a grossly under funded and under researched disease that affects roughly 2 million people in the US (MS affects roughly 500,000 and consider how much \$\$ has been spent on that disease with the end result being not only an accurate diagnostic but available treatmentS- emphasis on plural. In my situation, one of the studies I am part of was designed with a data coordination/management center so that sharing occurs and NIH specifically permits participants to access their own data. However, the situation is not that simple I've learned. While the NIH endorses my access it is currently limited by an IRB that approved the study with stricter requirements- including non-disclosure. The Co-PI is helping me with this tricky issue so that I can get my results.

If you read through several of the articles published in the special issue of my previous journal, you will better understand data sharing barriers around the globe and recommended fixes.

Finally, Eric Tool, MD, Scripps Research Institute, a thought leader in genomic medicine and the future of medicine, cited my ethical argument that there is a duty to share data in his book 'The Patient Will See You Now', chapter 'Open Sesame'. I urge you to read this chapter. As patients gain control over more of their diagnosing and care they need to have access to published research, their own data, properly interpreted and their raw data. Scientists need the raw data, software, code etc if they are to further their research and allow the US to recapture /maintain its standard of excellence in leading the world.

3. America can't be a leader in scientific/medical research if students, researchers and research institutions are barred from access. Moreover, the issue of barriers to access is acute on a global level, where good research is being done by researchers in developing countries but it can't be shared for reasons stated above. One of the articles in the special issue of the Journal I referred you to explains how The WHO set up a program called HINARI to try to remedy this problem, but that program is cash strapped and time limited.

For all these reasons I think it is imperative to change OSTP policy to permit open access= particularly for publicly funded research.

Thank you for your consideration.

Carol Isaacson Barash, Ph.D.
Founder & Managing Partner
Helix Health Advisors
cibarash@helixhealthadvisors.com

Global Sharing of Genomic Knowledge in a Free Market

Edited by Carol Isaacson Barash, Fahd Al-Mulla

Volume 3, Issue 4,

Pages 79-134 (1 December 2014)

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[Carol Isaacson Barash, Ph.D.](#) |
Principal, Helix Health Advisors
Board of Directors, MASS ME/CFS & FM Association
617. 784. 9304
[@cisaacsonbarash](#)

From: Melody Herr <herr@uark.edu>
Sent: Tuesday, March 10, 2020 4:59 PM
To: MBX OSTP Public Access <MBX.OSTP.PublicAccess@ostp.eop.gov>
Cc: Wesley Stites <wstites@uark.edu>
Subject: [EXTERNAL] RFI Response: Public Access

10 March 2020

Lisa Nichols
Assistant Director for Academic Engagement
Office of Science and Technology Policy

Dear Lisa Nichols:

Thank you for the opportunity to comment on the Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting from Federally Funded Research. The University of Arkansas, Fayetteville, urges the Office of Science and Technology Policy to implement the recommendations for federal agencies laid out by the AAU-APLU Public Access Working Group in this 2017 report (pages 1-3):

><https://www.aau.edu/sites/default/files/AAU-Files/Key-Issues/Intellectual-Property/Public-Open-Access/AAU-APLU-Public-Access-Working-Group-Report.pdf><

Sincerely,

Melody Herr, PhD
Head, Office of Scholarly Communications
University Libraries
and
Office of Research and Innovation
University of Arkansas



479-575-4233

RFI Response: Public Access

Prof. Seth R. Bank
sbank@ece.utexas.edu
The University of Texas at Austin

I am writing as an active researcher (bio below), funded primarily by DoD (DARPA, ARO, ONR, AFRL, etc.) and NSF.

- **What current limitations exist to the effective communication of research outputs (publications, data, and code) and how might communications evolve to accelerate public access while advancing the quality of scientific research? What are the barriers to and opportunities for change?**

The peer-reviewed publication system is very effective at communicating research that has been successful. Similarly, the open-access platforms (e.g. DTIC) are very effective for allowing open-access to explore what research has already been performed; while it has historically been difficult to find relevant research, advances in search engines (e.g. site-specific searches using Google) have improved this to tolerable levels.

The primary opportunity/need is a better platform for conveying what research has not been successful and why; the nature of the peer-reviewed publication process, coupled with the push within academia to publish in ‘high impact’ journals and generate large numbers of citations, has made it simply not worth the effort to publish carefully conducted, yet unsuccessful, research. It would be fantastic if there was a respected outlet to share carefully written, scientifically well-executed, ‘non-results,’ particularly explaining why the approach was unsuccessful. Such a platform would (1) prevent unnecessary duplication of research effort/funding in the future and (2) provide researchers clearer insights into the key challenges that were encountered, opening up the possibility for someone to come up with a ‘fresh perspective’ that avoids the challenges encountered in the past and make it work!

- **What more can Federal agencies do to make tax-payer funded research results, including peer-reviewed author manuscripts, data, and code funded by the Federal Government, freely and publicly accessible in a way that minimizes delay, maximizes access, and enhances usability? How can the Federal Government engage with other sectors to achieve these goals?**

Researchers currently must provide PDFs and citation information for all of our publications associated with each grant to federal funding agencies. The key need is to make these repositories easy to search through in engines like Google Scholar, which offers links to papers that are posted in freely-available locations online. This would be revolutionary for improving tax-payer (including us researchers!) access to federally funded research results and would minimize delays, maximize access, and greatly enhance usability.

However, an important issue to consider is that other countries (e.g. China) have no such requirements. If we are not careful, they will have access to all our research data, software, etc. but we will not have access to theirs, putting U.S. researchers at a serious disadvantage. For

example, I am working on some emerging photodetectors and our Chinese competitors would benefit tremendously if we had to put absolutely everything into the public domain (e.g. our home-brewed design software).

It is also important that any initiative weigh the potential benefits against the potential for dramatic increases in reporting requirements and overhead to PI's time; such action would result in less research output per dollar of government investment and turn risk compromising our tenuous research advantage.

• How would American science leadership and American competitiveness benefit from immediate access to these resources? What are potential challenges and effective approaches for overcoming them? Analyses that weigh the trade-offs of different approaches and models, especially those that provide data, will be particularly helpful.

As mentioned above, it is essential that we consider that other countries (e.g. China) will have no such open-access requirements. Giving them access to all our research data, software, etc. when we do not have access to theirs, will put us at a serious disadvantage. For example, I am working on some emerging photodetectors and our Chinese competitors would benefit tremendously if we had to put absolutely everything into the public domain (e.g. our home-brewed design software).

• Any additional information that might be considered for Federal policies related to public access to peer- reviewed author manuscripts, data, and code resulting from federally supported research.

No response.

Biosketch of Seth R. Bank:

Seth R. Bank received the B.S. degree from the University of Illinois at Urbana-Champaign in 1999 and the M.S. and Ph.D. degrees in 2003 and 2006 from Stanford University, all in electrical engineering. In 2006, he was a post-doctoral scholar at the University of California at Santa Barbara. He is currently a Cullen Trust Endowed Professor of Electrical and Computer Engineering at the University of Texas at Austin. His primary research interests are centered around the growth and application of novel heterostructures and nanocomposites to electronic and photonic devices. He has coauthored over 350 papers and presentations in these areas.

Dr. Bank is the recipient of a 2009 Presidential Early Career Award for Scientists and Engineers (PECASE) from OSTP, a 2010 Young Investigator Program (YIP) Award from the office of Naval Research (ONR), a 2010 National Science Foundation (NSF) CAREER Award, , a 2009 Young Investigator Program (YIP) Award from Air Force Office of Scientific Research (AFOSR), the 2009 Young Scientist Award from the International Symposium on Compound Semiconductors, a 2008 Defense Advanced Research Projects Agency (DARPA) Young Faculty Award (YFA), the 2008 Young Investigator Award from the North American MBE Meeting, and his students have received several best paper awards. He is a former Program and General Chair, as well as current steering committee member, of the OSA/IEEE/APS Conference on Lasers and Electro-optics (CLEO) and IEEE Device Research Conference (DRC).

From: Judy Lemus <jlemus@hawaii.edu>

Sent: Saturday, March 7, 2020 1:45 PM

To: MBX OSTP Public Access <MBX.OSTP.PublicAccess@ostp.eop.gov>

Subject: [EXTERNAL] RFI Response: Public Access

One year after publication in a peer-reviewed journal or platform, articles resulting from federally-funded research could be made available for free through a publicly available and searchable repository. This would allow journals to still control initial access for the purposes of recouping costs, but allow access to the broader public once the scientific community has had the opportunity to vet these publications.

From: Shan Sutton <sutton.shan@gmail.com>

Sent: Friday, March 6, 2020 12:31 PM

To: MBX OSTP Public Access <MBX.OSTP.PublicAccess@ostp.eop.gov>

Subject: [EXTERNAL] Input on open access to publicly funded research

To Whom It May Concern,

I am writing in strong support of immediate open access to outputs from federally funded research. The entire premise of providing tax payer funding for research is to benefit society, and a requirement for immediate open access is the best mechanism to ensure that benefit is maximized. This is especially important in scientific fields where new discoveries are accelerated by open access, and are conversely delayed by paywalled access to the latest research findings.

I am aware that the commercial publishing industry is fighting a shift to immediate open access for federally funded research in order to protect their profit margins. The federal government should have no obligation to support commercial publishers, as the government's first obligation is to advance the American public's interests. It is the publishers that must adapt to policy-making in the public interest, not vice versa.

Also, in the implementation of this policy shift, but will be important to allow researchers to use various methods to achieve immediate open access to their research outputs, including the use of institutional repositories at universities.

I am heartened to see OSTP is considering a mandate of immediate open access to federally funded research, and I urge you to implement such a policy as soon as possible.

Sincerely,

Shan Sutton

From: Ryan Kaldari <kaldari@gmail.com>
Sent: Thursday, March 5, 2020 6:09 PM
To: MBX OSTP Public Access <MBX.OSTP.PublicAccess@ostp.eop.gov>
Subject: [EXTERNAL] RFI Response: Public Access

Hello,

My name is Ryan Kaldari and I'm an employee of the Wikimedia Foundation (which runs Wikipedia and other non-profit educational projects). In regards to the Request for Information about public access to federally-funded research, I wanted to respond specifically to the question "What more can Federal agencies do to make tax-payer funded research results, including peer-reviewed author manuscripts, data, and code funded by the Federal Government, freely and publicly accessible in a way that minimizes delay, maximizes access, and enhances usability?"

For me, the most obvious answer to this question (which doesn't seem to be mentioned in the existing memorandums) is that the government should strongly encourage or incentivize publishers of federally-funded research to publish their results under a free license, such as a Creative Commons license (><https://creativecommons.org/licenses/><). This will allow others to freely share and reuse the research. It will also allow sites like the Internet Archive and Wikimedia Commons to host copies of the research so that it is easy to find and access (and will be preserved for the future). This would be a great way to maximize access and enhance the usability of federally-funded research.

Thank you for your time.

Sincerely,
Ryan Kaldari

From: John Carmichael <jcarmi@me.com>
Sent: Thursday, March 5, 2020 6:07 PM
To: MBX OSTP Public Access <MBX.OSTP.PublicAccess@ostp.eop.gov>
Subject: [EXTERNAL] RFI Response: Public Access

I am 77 and a life long learner. While I doubt I will put forward and earth shattering content I do like to keep up on scientific findings, particularly as relates to aging. Plus, I have two grandchildren that will benefit from an 'open' policy. However, I appreciate that there has to be a source of funding in order to get the material available for view. It is a tough question but I favor the pendulum to swinging to having more available.

John Carmichael
317-319-9127

From: Anne Schilling <anne@math.ucdavis.edu>
Sent: Tuesday, March 3, 2020 11:49 AM
To: MBX OSTP Public Access <MBX.OSTP.PublicAccess@ostp.eop.gov>
Subject: [EXTERNAL] RFI Response: Public Access

Dear Lisa Nichols,

I strongly agree that government funded research should be publicly accessible. I would even go further to say that all research should be openly accessible. As a researcher myself, I am constantly running into the situation where I am looking for a reference that my library does not have. The publisher often asked for \$40 or more per article requested. Often I am not even sure whether the article is relevant, so it is a big hurdle to pay these fees just to get access to information. Knowledge should be a public good. It might even be time to completely rethink our publishing flow given that most of the work (research, writing, typesetting, refereeing) is done by the researchers. It seems unacceptable that after this whole process the information is not always freely available.

Best wishes,

Anne Schilling

--

Anne Schilling E-mail: anne@math.ucdavis.edu
Professor Web: ><http://www.math.ucdavis.edu/~anne><
Department of Mathematics Office: MSB 3222
University of California Phone: (530) 754 0497
One Shields Ave Fax: (530) 752 6635
Davis, CA 95616

From: Christopher Marcum <christopher.steven.marcum@gmail.com>
Sent: Tuesday, March 3, 2020 9:50 AM
To: MBX OSTP Public Access <MBX.OSTP.PublicAccess@ostp.eop.gov>
Subject: [EXTERNAL] OSTP Open Science

Dear Ms. Lisa Nichols,

I am writing to express my endorsement of rules that would require all scientific and policy publications as well as final datasets generated from federally funded research to be immediately available without charge to the public. Through their tax contributions the American public invests in research and the scientific enterprise. It is the responsibility of the Government to ensure that the public has access to the returns on those investments without restriction. I strongly oppose any embargo period for publications that result from Federally funded research. The publication industry has been double-dipping for years by simultaneously profiting from 1) free labor of editors and reviewers many of whom receive support through federal funds, 2) charging fees to associations for publications that were federally funded, 3) charging libraries, institutions, and universities fees to access publications that were federally funded. It's time to stop this abuse of American's investments in research.

Thank you.

Dr. Chris Marcum
Gaithersburg, Maryland

From: Stephen Tauber <stephen.tauber@wt-group.com>
Sent: Tuesday, March 3, 2020 2:05 PM
To: MBX OSTP Public Access <MBX.OSTP.PublicAccess@ostp.eop.gov>
Subject: [EXTERNAL] Public Access to Peer-Reviewed Scholarly Publications

Dear Ms. Nichols:

Currently in the midst of the Democrat Presidential Nomination process, you have candidates preaching that they can fix the economy! This is ludicrous as the economy is humming along and is in absolutely no need of fixing. In the same vein, the White House is considering a fix to the scholarly article publishing process, again a process that is in no way broken. While I understand the intent, I am greatly concerned about the unintended consequences.

The publishing of scholarly content is an expensive proposition which like anything else provides a cost benefit relationship. What is the goal of fixing a process that is humming along providing the most important clinical breakthroughs to physicians and researchers worldwide? Much of this scholarly content is already being provided free of charge to physicians, educators and researchers alike.

Please let's not socialize the publication of scholarly content. This is a race to the bottom that no one will win.

Steve

Steve Tauber
The Walchli Tauber Group, Inc.
2225 Old Emmorton Road, Suite 201
Bel Air, MD 21015
Phone: 443-512-8899, ext. 103

~ The man who stops advertising to save money is like the man who stops the clock to save time ~
Thomas Jefferson

OFFICE OF SCIENCE AND TECHNOLOGY POLICY Request for Information: Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research AGENCY: Office of Science and Technology Policy (OSTP). ACTION: Notice of request for information (RFI). SUMMARY: OSTP, and the National Science and Technology Council's (NSTC) Subcommittee on Open Science (SOS), are engaged in ongoing efforts to facilitate implementation and compliance with the 2013 memorandum Increasing Access to the Results of Federally Funded Scientific Research 1 and to address recommended actions made by the Government Accountability Office in a November 2019 report.2 OSTP and the SOS continue to explore opportunities to increase access to unclassified published research, digital scientific data, and code supported by the U.S. Government. This RFI aims to provide all interested individuals and organizations with the opportunity to provide recommendations on approaches for ensuring broad public access to the peer-reviewed scholarly publications, data, and code that result from federally funded scientific research. DATES: Interested persons are invited to submit comments on or before 11:59 p.m. ET on March 16, 2020. ADDRESSES: Comments submitted in response to this notice may be submitted online to Lisa Nichols, Assistant Director for Academic

Engagement, OSTP, at publicaccess@ostp.eop.gov. Email submissions should be machine-readable [pdf, doc, txt] and not copy-protected. Submissions should include "RFI Response: Public Access" in the subject line of the message. Instructions: Response to this RFI is voluntary. Each individual or institution is requested to submit only one response. Submission must not exceed 5 pages in 12 point or larger font, with a page number provided on each page. Responses should include the name of the person(s) or organization(s) filing the comment. Comments containing references, studies, research, and other empirical data that are not widely published should include copies or electronic links of the referenced materials. No business proprietary information, copyrighted information, or personally identifiable information should be submitted in response to this RFI. In accordance with FAR 15.202(3), responses to this notice are not offers and cannot be accepted by the Federal Government to form a binding contract. Additionally, those submitting responses are solely responsible for all expenses associated with response preparation. FOR FURTHER INFORMATION CONTACT: For additional information, please direct your questions to Lisa Nichols at publicaccess@ostp.eop.gov. SUPPLEMENTARY INFORMATION: In February of 2013, OSTP issued the memorandum Increasing Access to the Results of Federally Funded Scientific Research. The memorandum directed Federal agencies with more than \$100M in research and development (R&D) expenditures to develop plans to make the results of federally funded unclassified research that are published in peer-reviewed publications, and digitally formatted scientific data, publicly available. Federal agency plans required that published work be made available following a twelve-month post-publication embargo period. OSTP and the NSTC SOS continue to explore opportunities to make the knowledge, information and data generated by federally funded research more readily accessible to students, clinicians, businesses, entrepreneurs, researchers, technologists, and the general public who support these investments as a means to accelerate knowledge and innovation. Over the course of the last two years, OSTP has had nearly 100 meetings with stakeholders on open science, current policy on public access to the results of federally funded research, the evolution of scholarly communications, and access to data and code associated with published results. This RFI aims to expand on these consultations and provide all interested individuals and organizations with the opportunity to provide recommendations on approaches for ensuring broad public access to the peer-reviewed scholarly publications, data and code that result from federally funded scientific research. OSTP is interested in perspectives on the following topics: • What current limitations exist to the effective communication of research outputs (publications, data, and code) and how might communications evolve to accelerate public access while advancing the quality of scientific research? What are the barriers to and opportunities for change? • What more can Federal agencies do to make tax-payer funded research results, including peer-reviewed author manuscripts, data, and code funded by the Federal Government, freely and publicly accessible in a way that minimizes delay, maximizes access, and enhances usability? How can the Federal Government engage with other sectors to achieve these goals? • How would American science leadership and American competitiveness benefit from immediate access to these resources? What are potential challenges and effective approaches for overcoming them? Analyses that weigh the trade-offs of different approaches and models, especially those that provide data, will be particularly helpful. • Any additional information that might be considered for Federal policies related to public access to peer-reviewed author manuscripts, data, and code resulting from federally supported research. Dated: February 12, 2020. Sean Bonyun, Chief of Staff, Office of Science and Technology Policy. [FR Doc. 2020-03189 Filed 2-18-20; 8:45 am]

From: Stephen Tauber <stephen.tauber@wt-group.com>

Sent: Tuesday, March 3, 2020 8:40 AM

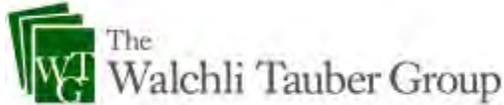
To: Kelley Russell <kelley.russell@wt-group.com>

Subject: Re: Tweet by White House OSTP on Twitter

I never really looked at this. Would it make sense for you and I to try to take a trip to Atlanta to have lunch with Bob and just talk about this? I never get to see him and he might appreciate the visit. Thoughts?

Steve

Steve Tauber



2225 Old Emmorton Road, Suite 201
Bel Air, MD 21015
Phone: 443-512-8899, ext. 103

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[Click here to follow The Walchli Tauber Group on Twitter](#)

~ The man who stops advertising to save money is like the man who stops the clock to save time
~ Thomas Jefferson

From: Kelley Russell <kelley.russell@wt-group.com>
Date: Monday, February 24, 2020 at 4:41 PM
To: Stephen Tauber <stephen.tauber@wt-group.com>
Subject: Re: Tweet by White House OSTP on Twitter

No worries and no rush. Anytime later this week or next. Hope all goes great!

Thanks,
Kelley

Kelley Russell
The Walchli Tauber Group
214-704-4628
Kelley.russell@wt-group.com

From: Stephen Tauber <stephen.tauber@wt-group.com>
Sent: Monday, February 24, 2020 3:40:47 PM
To: Kelley Russell <kelley.russell@wt-group.com>
Subject: Re: Tweet by White House OSTP on Twitter

Hi Kelley,

I haven't had any time to think about this today. Very busy preparing for meetings at EPM and ASCO tomorrow and Wednesday. Maybe we can discuss on Thursday.

Steve

Steve Tauber
The Walchli Tauber Group, Inc.
2225 Old Emmorton Road, Suite 201
Bel Air, MD 21015
Phone: 443-512-8899, ext. 103

~ The man who stops advertising to save money is like the man who stops the clock to save time ~
Thomas Jefferson

From: Kelley Russell <kelly.russell@wt-group.com>
Date: Monday, February 24, 2020 at 9:28 AM
To: Stephen Tauber <stephen.tauber@wt-group.com>
Subject: Fwd: Tweet by White House OSTP on Twitter

Hi Steve,

I just received this from Bob H. regarding tweeting comments about O.A. to the White House OSTP. Please let me know if you send something as I may want to use some of what you send!

Thanks,

Kelley

Kelley Russell
The Walchli Tauber Group
214-704-4628
Kelley.russell@wt-group.com

From: Bob Henkel <bhenkel@asn-online.org>
Sent: Monday, February 24, 2020 7:28 AM
To: Shari Leventhal; Susan Willner; Bernie Stukenborg; Kelley Russell; kimberly@accucoms.com
Subject: Fwd: Tweet by White House OSTP on Twitter

FYI

Bob Henkel
Sr. Dir. of Publishing

Please excuse any typos, this message was sent from my hand held device.

This transmission (including attachments) may contain confidential information. Use of such information by anyone other than the intended is prohibited. If you received this transmission in error, please notify the sender and permanently delete all copies.

Begin forwarded message:

From: Tod Ibrahim <tibrahim@asn-online.org>
Date: February 24, 2020 at 8:07:18 AM EST
To: Bob Henkel <bhenkel@asn-online.org>, Shari Leventhal <sleventhal@asn-online.org>, Rachel Meyer <rmeyer@asn-online.org>, Zachary Kribs <zkribs@asn-online.org>
Subject: FW: Tweet by White House OSTP on Twitter

FYI.

From: Tod Ibrahim <todibrahim@gmail.com>
Sent: Monday, February 24, 2020 5:22 AM
To: Tod Ibrahim <tibrahim@asn-online.org>
Subject: Tweet by White House OSTP on Twitter

White House OSTP ([@WHOSTP](https://twitter.com/WHOSTP))

[2/19/20, 11:48 AM](#)

[@WHOSTP](#) is seeking additional comments on public access to peer-reviewed scholarly publications, data, & code resulting from federally funded research. Let us know what you think: govinfo.gov/content/pkg/FR... [#science](#)

[Download](#) the Twitter app

From: Eric Kernfeld <eric.kern13@gmail.com>
Sent: Sunday, March 1, 2020 10:58 PM
To: MBX OSTP Public Access <MBX.OSTP.PublicAccess@ostp.eop.gov>
Subject: [EXTERNAL] RFI Response: Public Access

Dear Dr. Nichols,

I am writing to as an individual in response to the recent RFI on public access to federally-funded research. This letter represents my own views, not those of my employer.

There are many successful open-access, peer-reviewed scientific journals. One simple approach to the questions you ask in the RFI would be to require that federally-funded research be published in these journals rather than in paywalled journals. This minimal change would require no new infrastructure, thus minimizing delay, and it would take advantage of pre-existing organizations in other sectors, thus maximizing access. To address your third goal of enhancing usability, note that many journals already require public release of data and code; the government could work with journals to encourage this essential part of making research usable. The government could also encourage uniform standards in reporting, as it has already begun to do with GEO, MIAME, and MINSEQE.

Aside from uniform availability of research, quality is another issue that could be improved through changes in the way research is presented to the public. Anonymous and closed-room peer review is neither necessary nor sufficient to ensure high-quality research. Editors, not reviewers, make the final decision about what gets published, and frequently, dissenting voices never appear in print. Reviews often contain crucial points that the average reader would miss, and in many cases, these insights jeopardize or qualify the main contribution of the entire paper. Journals obviously have no reason to publish this sort of commentary, and indeed most of them do not.

Therefore, the government could have a valuable role in improving public access not just to the research itself but also to the crucial context that experienced reviewers can offer. At a bare minimum, reviewers' comments should be published alongside each paper. Sites like StackExchange have demonstrated the feasibility and value of continuously updated, crowdsourced responses that sit alongside the primary content of interest. Government support of similar practices in mainstream academia could benefit most readers by giving them access to a full range of experienced perspectives on each paper. This open dialogue would accelerate the progress of science, especially by reducing the chance that incorrect findings become entrenched for years or decades.

Journals, scientists, and institutions are likely to object to any heavy-handed policies that encourage this type of open criticism, though. Such systems would also be vulnerable to attack by ideological extremists: for instance, a vote-based forum on climate change or vaccination could be co-opted by paid or politically motivated participants. Moderation would be difficult in general, as it is for any comments section in any website. The best strategy may be to quietly cultivate an option where interested scientists could share knowledge paper by paper, with no requirement for journals to participate.

Sincerely,

Eric Kernfeld
Bioinformatician
University of Massachusetts Medical School

--
Eric

From: Mike Cariaso <cariaso@gmail.com>
Sent: Sunday, March 1, 2020 4:15 AM
To: MBX OSTP Public Access <MBX.OSTP.PublicAccess@ostp.eop.gov>
Subject: [EXTERNAL] RFI Response: Public Access

What current limitations exist to the effective communication of research outputs (publications, data, and code) and how might communications evolve to accelerate public access while advancing the quality of scientific research?

Paywalls, and particularly inconsistent interfaces to them, are a major barrier to scientific progress. In too many cases I've seen and done, sci-hub and other 'illegal' tools are used, not because the article is copyright protected, but because it provides a uniform interface to information with multiple sources with different access policies and interface.

What are the barriers to and opportunities for change?

Don't try to get this perfect. Just continue to promote (and remove roadblocks against) plain text downloads of all scientific publications. Metadata, Classification and grouping are downstream problems which can be solved by larger domain specific audiences once the core content is readily available.

--
--

Mike Cariaso
><http://www.cariaso.com><

RFI Response: Public Access
Corinne Jones, PhD, CCC-SLP
Assistant Professor
The University of Texas at Austin

NIH and other federal granting agencies require that results of taxpayer-funded research to be disseminated publically through open-access journals or through PubMed Central. This open access of results is vital for the appropriate dissemination of results. Barriers to this public access include:

- Unclear instructions on the journals' parts in how the article should be submitted to PubMed Central. Some journals will deposit manuscripts on behalf of the authors, whereas others will not. However, this information is nearly impossible to find on publishers' websites. This takes up a good portion of my time and could be streamlined better
- This dissemination of results requires the results to be acceptable to a journal. It's not a surprise that it is difficult to publish null results, which leads to a significant publication bias. However, not being able to publish negative findings prevents the full dissemination of results of taxpayer-funded research

There are some options for dissemination of code (e.g., GitHub), but it would be beneficial to have a centralized center for authors to upload relevant code and for others to find and evaluate relevant code. This could be something set up similarly to PubMed Central, with a direct link from the respective manuscript on PubMed. This code is often necessary for adequate replication of research. If there is no requirement for sharing code, this increases delay, minimizes access, and impedes usability.

Some publishers are moving towards an open-access data policy. Currently, as I understand it, the NIH only requires peer-reviewed manuscripts to be shared publicly, but not the data underlying in the publication. A move to require taxpayer funded research data, not just results, to be shared would be a good step towards the goal of free and public availability of the fruits of taxpayer dollars.

From: Peter Uetz <uetz@vcu.edu>

Sent: Saturday, February 29, 2020 10:43 PM

To: MBX OSTP Public Access <MBX.OSTP.PublicAccess@ostp.eop.gov>

Subject: [EXTERNAL] Request for Information: Public Access to Peer-Reviewed Scholarly Publications ...

What current limitations exist to the effective communication of research outputs
(publications, data, and code):

The main problem is that published information is often very difficult to find, not just the paper itself, but also the information inside a paper, or worst, information across papers:

Solution: we need more or better databases, that is, more (long-term) funding for professional databases.

I understand that databases are often set up ad hoc, e.g. for grad students, but many could develop into professional long-term repositories with some funding.
In many cases it may be necessary or preferable if a database merged with another one, but that could also be supported by funding.

How would American science leadership and American competitiveness benefit from immediate access to these resources?

I don't know any quantitative study on this, but I guarantee that good databases would save millions of man-hours and thus tens of millions of US\$\$\$, because an insane amount of time is wasted by searching for information, especially complex datasets (not just single bits of information).

Hence, good databases benefit all Americans, the American taxpayer, the scientists, industry etc ... — EVERYBODY.

Sincerely,

Peter Uetz, PhD, Associate Professor
Center for Biological Data Science (CeBiDaS)
(formerly Center for the Study of Biological Complexity)
Virginia Commonwealth University
Richmond, VA 23284
USA

Reptile Database (><http://www.reptile-database.org><)
><http://people.vcu.edu/~uetz/><

From: Halsey, Duke <dh955@drexel.edu>
Sent: Friday, February 28, 2020 8:48 AM
To: MBX OSTP Public Access <MBX.OSTP.PublicAccess@ostp.eop.gov>
Subject: [EXTERNAL] RFI Response: Public Access

Lots of people still watch the news. Maybe there could be some way of defining parameters of the most widely viewed news outlets and mandate that they invite someone from NIH, NSF, et cetera, to provide weekly briefings to news audiences on the important findings of federally funded scientific research. Cultural and political biases will persist, yes. But maybe there would be ways of directing people to the full studies through the social media accounts of said news outlets, buttressed by the social media accounts of the applicable federal agencies posting the same studies the same day.

Plenty of other possibilities exist too. Keys would include making the entry point for people relatively effortless, exposing people to palatable bites of information, and making it easy to dive deeper, fact check.

I'm glad efforts are being made to expand public access to research findings.

Thank you,
Duke

R. Duke Halsey
IRB Project Coordinator
Human Research Protection

1505 Race Street, 7th Floor
Philadelphia, PA 19102
(267) 359-2476 they / him
duke.halsey@drexel.edu



Click [here](#) to check out the updated IRB webpage! Access new protocol templates, consent templates, and regulatory tools.

From: Tammy Le <karichi@gmail.com>
Sent: Wednesday, February 26, 2020 4:16 PM
To: MBX OSTP Public Access <MBX.OSTP.PublicAccess@ostp.eop.gov>
Subject: [EXTERNAL] RFI Response: Public Access

To Lisa Nichols, Assistant Director for Academic Engagement:

I am writing in fierce support of 85 FR 9488 to encourage publicly funded research be made open access to the public.

Like any thoughtful investor, citizens require visibility into the system they're funding, in order to evaluate and speak to their efficacy. Not enabling this visibility robs citizens of the ability to advocate in an informed way for the future of funding scientific research.

Furthermore, increased access means a broader audience of researchers, scientists, and public citizens may participate in and further not only the academic process, but the democratic process.

Finally, if it is our expectation and duty, as citizens, to challenge fake news, produce accountability, and verify the integrity of scientific research, it is imperative for citizens to have full access to the data, methods, and results behind claims.

Thank you for your efforts to improve the accessibility of U.S. research.

From: Michael Karpeles <michael.karpeles@gmail.com>
Sent: Wednesday, February 26, 2020 3:31 PM
To: MBX OSTP Public Access <MBX.OSTP.PublicAccess@ostp.eop.gov>
Subject: [EXTERNAL] RFI Response: Public Access

To Lisa Nichols, Assistant Director for Academic Engagement, OSTP:

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Finally, if it is our expectation and duty, as citizens, to challenge fake news, produce accountability, and verify the integrity of scientific research, it is imperative for citizens to have full access to the data, methods, and results behind claims.

Thank you for your efforts to improve the accessibility and usefulness of U.S. research.

P.S. If there are actionable ways the [Internet Archive](#) (my employer) may be helpful in supporting this direction (offering storage, endorsing, etc) I'd be delighted to forward these points to the right people for their consideration.

best wishes,

- mek

><https://mek.fyi><

Citizen of the World

Open Librarian @ openlibrary.org

-----Original Message-----

From: Shane Riley <shane@shaneriley.com>

Sent: Wednesday, February 26, 2020 3:00 PM

To: MBX OSTP Public Access <MBX.OSTP.PublicAccess@ostp.eop.gov>

Subject: [EXTERNAL] RFI Response: Public Access

To Lisa Nichols, Assistant Director for Academic Engagement, OSTP:

I am writing in fierce support to encourage publicly funded research be made open access to the public.

Like any thoughtful investor, citizens require visibility into the system they're funding, in order to evaluate and speak to their efficacy. Not enabling this visibility robs citizens of the ability to advocate in an informed way for the future of funding scientific research.

Furthermore, increased access means a broader audience of researchers, scientists, and public citizens may participate in and further not only the academic process, but the democratic process.

Finally, if it is our expectation and duty, as citizens, to challenge fake news, produce accountability, and verify the integrity of scientific research, it is imperative for citizens to have full access to the data, methods, and results behind claims.

Thank you for your efforts to improve the accessibility of U.S. research.

From: Khan, Ali S <ali.khan@unmc.edu>
Sent: Wednesday, February 26, 2020 12:09 PM
To: MBX OSTP Public Access <MBX.OSTP.PublicAccess@ostp.eop.gov>
Cc: McElroy, Emily J <emily.mcelroy@unmc.edu>
Subject: [EXTERNAL] RFI Response: Public Access

Lisa Nichols,
Assistant Director for Academic Engagement, OSTP

Dear Ms. Nichols:

As a physician and public health practitioner, I can affirm that expanding open access to our nation's cutting edge research will save lives.

The scientific literature is invaluable for sourcing the latest information on pathogenesis, diagnostics, therapeutics, and prevention strategies.

The majority of this nation's biomedical research is funded by the federal govt, as is the salary of the researchers and reviewers of our peer-reviewed articles. And then the federal govt, through F&A to Universities and Libraries, pays for these same researchers to access their own data and enrich for-profit publishers. This is a predatory publishing scheme that is contra to all market-based business principles. They do nothing but make billions because physicians want to read the newest science and save lives – and are willing to pay to do so. Unfortunately, the predatory pricing has led to a situation where many clinicians can not access this govt-funded knowledge.

The recent decision of many of these publishing houses to NOT put coronavirus articles behind a paywall as their contribution to saw lives exposed their duplicity. Are the lives of people with diabetes or heart disease or cancer not worth saving?

Please require that ALL govt funded research be published in non-profit, peer-reviewed open-access journals that adhere to the highest ethical standards as espoused by such journals as PLOS.

Thank you,

Ali

Ali S. Khan, MD, MPH MPH

Retired Assistant Surgeon General, USPHS

Dean and Professor

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From: Brookes, Paul <Paul_Brookes@URMC.Rochester.edu>
Sent: Wednesday, February 26, 2020 10:51 AM
To: MBX OSTP Public Access <MBX.OSTP.PublicAccess@ostp.eop.gov>
Subject: [EXTERNAL] RFI Response: Public Access

I am a Professor at a private university (University of Rochester) whose research is funded by the National Institutes of Health. I am writing in response to the RFI from OSTP about open access to results of federally funded research. I would like to make the following points:

(1) The academic publishing industry is a barnacle on the scientific process. It is the only industry where the raw material (data) is free, the labor (peer review) is free, the costs (running a website) are minimal, AND the companies get to sell the end product back to the producers for a profit! Billions of dollars in turnover and 35-40% profit margins are common in the industry, and the "added value" is minuscule. As such, any policy on open-access needs to address profiteering by the publishing industry. Importantly, from a US national perspective, many of the major publishing corporations are based in Europe (in particular Elsevier and Springer/Nature). As such, changes in US policy that curb their profits should not result in major job losses on this side of the Atlantic.

(2) The current embargo imposed by the publishers (6-12 months), and facilitated / implemented via NIHMS (NIH manuscript system), is not compatible with rapid dissemination of scientific information. A zero-embargo policy (papers available as soon as they are published) would be far more preferable to academia.

(3) What has happened over the past decade, is a shifting of costs away from research library subscription, and onto article-processing charges (APCs) that are paid by researchers from their federal grants. The modular budget NIH grant has been static at \$250k for almost 2 decades now, so the imposition of \$5-10k in new publishing fees represents an unfunded mandate. A CAP ON ARTICLE PROCESSING CHARGES that publishers are allowed to levy when publishing federally-funded research, will help to stop these runaway costs from escalating. A black-list of publishers who over-charge, and with whom federally-funded researchers are prohibited from publishing their work, would be a useful instrument to reining in these costs.

(4) At small universities and colleges with limited financial resources, access to some journals can be a huge problem (for example, I work on metabolism and *Nature* last year launched a new journal, *Nature Metabolism*, but my library does not have a subscription). In many cases, researchers are turning to illegal mechanisms to obtain access to papers, such as the website Sci-Hub which is based in Russia. Clearly any website based in that country carries security risks, but simply banning such sites is not a long-term solution. The fix has to involve taking away the need to use illegal methods, by improving access to the underlying material that researchers want.

Thank-you.

Paul Brookes

^^^

Paul S. Brookes, PhD.
URMC Anesthesiology
>www.psblab.org<

From: Ian Lock <ian.lock@duke.edu>
Sent: Wednesday, February 26, 2020 7:56 AM
To: MBX OSTP Public Access <MBX.OSTP.PublicAccess@ostp.eop.gov>
Subject: [EXTERNAL] Re: Request for public comment on Open Access

I apologize for the previous message that did not contain the content that I wanted to portray.

I would like to say that not only is open access crucial for propagation of research to the general public, but it is, in my opinion, more useful for scientists at small institutions. During my time at a small liberal arts college in the midwest, I found very large discrepancies in access between the papers that I was able to access through my institution rather than through my research position at the University of Minnesota. I found that my classmates often had to wait a long period of time to be granted access whereas I was able to gain access quite quickly. This often meant that my peers shied away from using the most current research in their papers that were due on a short timeline.

This has also been true in my volunteer work. I have peers at the American Cancer Society looking for updated information on research in their field who do not have access through their institution. This makes volunteer input into scholarly works at the ACS much harder and represents a large barrier to including volunteers in a broader scope of advocacy at the legislative level as well as in their communities.

Best,
Ian Lock

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From: Ian Lock
Sent: Tuesday, February 25, 2020 3:25:09 PM
To: publicaccess@ostp.eop.gov <publicaccess@ostp.eop.gov>
Subject: Request for public comment on Open Access

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- Current limitations to the effective communication of research outputs

The existing system of scientific dissemination works relatively well. Authors have choices in submitting their research papers to any of several journals, the best of which support good peer review and compete for readership and notoriety. Publishers in the existing system necessarily utilize paid professional editors. The system allows for the use of search engines to find papers, archival repositories, peer review done by scholars for no compensation but as a shared professional responsibility, and essentially all the key elements for effective dissemination that allow for assigning timely credit, evaluation of quality (acceptance or rejection), broad distribution, and long term archiving. The existing system also allows for its financial support, with funds supplied primarily from indirect costs charged to sponsors of grants for research, which are then used to purchase journal subscriptions from publishers.

The major limitation to the existing system is the lack of availability of research publications to all who might desire them, including small businesses and individuals without access to large library systems that can afford subscriptions to most or all journals. While cost efficiencies should always be evaluated, and effects of any changes in the existing system may be felt disproportionately across the enterprise (e.g., at large or small universities, theorists or experimentalists, etc.) the system appears relatively efficient. The cost of publishing typically ranges from \$2000 - \$4000 per published paper, and that can be justified by considering the costs of the specific functions of publishers as noted above. Additionally, this expense is a fraction of the total cost of a research grant (for salaries, equipment, etc.) that results in a paper.

- What can Federal agencies do to make research results freely and publicly accessible

Federal agencies could work with Congress to flip the “subscription-based system” to an “author-paid system,” where a direct cost line in a grant would provide Article Publication Costs, paid by the author to their publisher of choice, and allowing for open access to their paper. Long term costs of the new system would not exceed current costs but might require a temporary infusion of additional federal funds as there will be transition costs, as lower indirect costs are re-evaluated for institutions and agencies, and library roles at institutions are re-evaluated.

- How would American leadership and competitiveness benefit from immediate access

U.S. publishers, primarily associated with professional societies, provide an excellent service and ensure quality of publications, primarily through their facilitation of peer review, which is perhaps the most important role of a publisher. We should ensure that quality U.S. publishers thrive and remain competitive with emerging international and commercial publishers, as we make any changes to the existing system.

Public access to peer-reviewed publications, data and code resulting from federally funded research

Response by Peter Kasson, University of Virginia

The quality and rigor of scientific communication is critical to advancing the public mission of US scientific, technological, and medical progress. The United States has some of the strongest and most rigorous scientific research in the world, and US-based scientific societies also publish some of the best scientific publications in the world. Current federal policies on public access--namely the availability of publicly funded publications after a limited embargo--do an excellent job of maintaining this rigor while also providing availability. This complements well the growing use of preprint servers, which provide immediate availability but not quality controls (as seen by some of the false and potentially hazardous information placed on preprint servers surrounding COVID-19). Quality review takes time and money, and the current policy does an excellent job of maintaining the rigor required for US research and technology leadership. Recent efforts by ideologues in Europe to institute a disruptive "Plan S" have placed availability ahead of quality. These efforts, fortunately, have largely failed, as their proponents have backed off the more radical visions in favor of limited compromise approaches. The interests of the United States would be best served by maintaining course and resisting similar ideological temptations.

In addition to availability of publications, data and methods sharing are key to scientific progress, scientific rigor, and technological impact. There is no good ideologically driven "one size fits all" approach here, although making available enough information to reproduce the reported results is a key element. What needs to be optimized in a policy is total benefit to US society: the cost of data sharing versus the benefits. Some datasets are extremely large and essentially "write-once-read-never", while other datasets are of immense public interest and benefit. So in this case, a field-specific approach is probably best, either maintaining current policies of having investigators specify and justify data-sharing in funding applications. One alternate would be to have field-specific "preferred sharing pathways" that investigators could either adopt or justify why they are not applicable. A federal framework for data sharing could facilitate this, although the cost to the country in terms of #1 cost of storage and access and #2 cost of investigator time should be balanced against the benefit. In many fields, there are well developed data sharing mechanisms, and arguably the sharing of research methods presents a simpler area for progress.

From: Michael Greenberg <michael.greenberg@pomona.edu>
Sent: Monday, February 24, 2020 12:29 PM
To: MBX OSTP Public Access <MBX.OSTP.PublicAccess@ostp.eop.gov>
Subject: [EXTERNAL] Response to 85 FR 9488 (document number 2020-03189)

Hello,

I am an assistant professor of Computer Science at Pomona College. I strongly support any initiative that compels immediate and free dissemination of research results.

Computer science is a fast moving area, but the research is often low stakes---few lives hang in the balance of the proof of a theorem or efficiency of a research implementation. But especially in other areas---medicine, for example---rapid dissemination is critical.

But the immediacy of dissemination is only part of the story. Access to computer science research is often behind paywalls, even though the work was typically produced on the taxpayer's dime! These paywalls disproportionately disadvantage those who can't afford access to, e.g., the ACM DL: hobbyists, open source developers, and small companies.

The arXiv is a good start, but I think the Library of Congress would be a natural place to keep a publicly funded, arXiv-like repository.

Finally, I would urge the OSTP to think carefully about who opposes this move (publishers) and what they have to gain (more money, at the expense of research dissemination).

Thank you,
Michael

From: David Darais <David.Darais@uvm.edu>
Sent: Monday, February 24, 2020 10:24 AM
To: MBX OSTP Public Access <MBX.OSTP.PublicAccess@ostp.eop.gov>
Subject: [EXTERNAL] RFI Response: Public Access

Dear Lisa Nichols,

I'm responding to this RFI:

><https://www.federalregister.gov/documents/2020/02/19/2020-03189/request-for-information-public-access-to-peer-reviewed-scholarly-publications-data-and-code><

I'm an assistant professor in computer science at University of Vermont.

><http://david.darais.com><

My research expertise encompasses computer security, data privacy, and programming languages, and I am traveling this week to serve on an NSF panel which determines which competitive grants in computer science research will receive grant dollars from NSF.

As an academic, I strongly support open access (i.e., removal of paid access) for publicly funded publications, data and code. As a citizen, I support it just as strongly. Anecdotally, 99% of my academic colleagues share my support. 100% of my colleagues in industry or non-academic appointments support this as well.

My Dean, Linda Schadler, strongly supports open access of tax-payer funded research as well. Not just researchers, but even the administrative layer of higher education is in strong support of this as well.

There is a strong lobby for the paywalled publishing industry, and there is no lobby of similar size or strength to represent academics and/or taxpayers. Please take messages like mine into consideration accordingly.

The only barrier to open access is that it disrupts the funding model for publication agencies. This funding model is both not justifiable, and not sustainable. It needs to change.

When a publisher "publishes" a manuscript, the labor that goes into it is as follows:

1. The actual research work — this is at no cost to the publisher, and usually paid for by federally funded research dollars, which come from taxpayers
2. The scientific peer-review of the work — this is at no cost to the publisher; academics volunteer their time to do this without pay
3. The long-time archiving of the work — this currently costs roughly \$5 per manuscript per year (estimated costs of arxiv.org, which provides exactly this service); this is mostly a fixed cost, and as more papers are published, the per-paper cost should go down slightly over time

Publishers will claim that their publications are their intellectual property. Some publishers require authors to sign over their intellectual property rights, so this may be true from a purely legal standpoint, but it is not true in any way traceable to effort or financial investment on the part of the publisher.

Other publishers do not retain full IP rights for published works.

****Publishers are double-dipping: they get the manuscripts to publish and peer-review of them for free, and they charge extremely high prices for access to them.****

Researchers are held hostage by the “brand” and critical mass that publishers have. Our reputations get wrapped up in publishing in “prestigious” journals, and we are therefore wary of changing to a publisher which would treat us less unfairly.

Tax payers are entitled to open access to the published works that they fund through tax dollars, and there is no value added by publishers which justifies keeping these works behind a paywall.

****The only solution to equity in the publishing ecosystem is a federally mandated policy of requiring open access, and prohibiting publishers from profiting unfairly off of works and efforts donated by researchers for the good of the scientific process and society.****

Best,

David Darais

Assistant Professor, Computer Science

University of Vermont

><http://david.darais.com><

From: Tian, Xiuchun <xiuchun.tian@uconn.edu>
Sent: Monday, February 24, 2020 9:03 AM
To: MBX OSTP Public Access <MBX.OSTP.PublicAccess@ostp.eop.gov>
Subject: [EXTERNAL] RFI Response: Public Access

Dear Sir/Madam,

As a scientist who has published more than 100 research articles, I strongly urge the federal government to adapt the policy to immediately release all federally-funded research to the public. Publishers are paid already by page charges through federal grants when researchers submit their work for publication. Publishers are currently double-dipping by charging universities and readers again through subscription fees. These fees are astronomical to university libraries because publishers can charge whatever they want. They have the most unfair practice in businesses by also forcing authors to accept extremely unfair copy-right agreements, leaving the authors/scientists no rights to their own work. All of these must stop.

I strongly support the White house to take actions to stop the monopoly and greediness. The lame argument of protecting intellectual properties makes no sense at all. Any innovations once published are no longer protected anyway, so no researchers would publish work that they intent to patent.

Thank you.

Xiuchun (Cindy) Tian, PhD
Professor of Biotechnology
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>[http://animalscience.uconn.edu/faculty/Xiuchun%20\(Cindy\)%20Tian.php](http://animalscience.uconn.edu/faculty/Xiuchun%20(Cindy)%20Tian.php)<

From: Aubert, Clement <CAUBERT@augusta.edu>
Sent: Monday, February 24, 2020 9:02 AM
To: MBX OSTP Public Access <MBX.OSTP.PublicAccess@ostp.eop.gov>
Subject: [EXTERNAL] RFI Response: Public Access

Good Morning, Lisa Nichols,

I'm an Assistant Prof. in Computer Science at Augusta University.
I would be proud to see a mandate for open access to all federally funded research and believe that requiring that code and data necessary to reproduce results be made available as well. This would tremendously simplify my every-day research, help me in spreading my findings, and ease the collaboration with multiple collaborators, inside and outside of the US.

Best,
And thanks,
Clément.

--

Clément Aubert, Assistant Professor of Computer Science,
School of Computer and Cyber Sciences, Augusta University,
spots.augusta.edu/caubert/

From: Jared <bldfr5@gmail.com>

Sent: Monday, February 24, 2020 2:48 AM

To: MBX OSTP Public Access <MBX.OSTP.PublicAccess@ostp.eop.gov>

Subject: [EXTERNAL] RFI Response: Public Access

All non-classified research, data, and code that is federally funded should be considered public domain. A single web portal with access to the repositories that currently hold this data, as outlined in GAO-20-81, should be instituted as the primary means of access for these repositories. To address the delay in selecting and implementing a leading collaboration practice, the OSTP itself should take the lead and make a decision, instead of allowing the co-chaired council to delay and pull in opposite directions. It has been 7 years since the agencies were instructed to begin this process. The fact that they are still delaying in sub-committees indicates that they are working at cross purposes, I would assume out of a sense of inter-agency rivalry. As the executive branch's representative in this matter, it is the OSTP's responsibility to provide guidance instead of allowing delays.

Sincerely,
Jared Viano

From: Rene Sugar <rene.sugar@gmail.com>

Sent: Sunday, February 23, 2020 11:16 PM

To: MBX OSTP Public Access <MBX.OSTP.PublicAccess@ostp.eop.gov>

Subject: [EXTERNAL] Comments on Increasing Access to the Results of Federally Funded Scientific Research

To whom it may concern,

Re: ><https://www.federalregister.gov/documents/2020/02/19/2020-03189/request-for-information-public-access-to-peer-reviewed-scholarly-publications-data-and-code><

Currently, results from federally funded research are often behind a paywall making analysis of all existing research prohibitively expensive.

Sites like Amazon Web Services, Microsoft Azure, GitHub, GitLab, Bitbucket.org, etc. could be used to make code and data from publicly funded studies available.

The code and data needs to continue to be available long after the funding for the project that generated it ends.

GitHub, GitLab, etc provide free storage to open source projects.

The time between basic research, replication studies, and translation into medical treatment is indeterminate.

Analysis of the data will cross disciplines - machine learning, deep learning, virology, microbiology, immunology, neurology, translational medicine, epidemiology, etc.

New treatments can be developed more readily with public access to code and data.

The treatments may involve repurposing one or more existing drugs to come up with new cost effective treatments to help control the cost of healthcare.

References:

[>https://www.theguardian.com/society/2020/feb/20/antibiotic-that-kills-drug-resistant-bacteria-discovered-through-ai<](https://www.theguardian.com/society/2020/feb/20/antibiotic-that-kills-drug-resistant-bacteria-discovered-through-ai)

[>https://www.technologyreview.com/s/615141/an-algorithm-that-can-spot-cause-and-effect-could-supercharge-medical-ai/<](https://www.technologyreview.com/s/615141/an-algorithm-that-can-spot-cause-and-effect-could-supercharge-medical-ai/)

René Raymond Sugar

From: Jonathan Aldrich <jonathan.aldrich@cs.cmu.edu>
Sent: Sunday, February 23, 2020 10:20 PM
To: MBX OSTP Public Access <MBX.OSTP.PublicAccess@ostp.eop.gov>
Subject: [EXTERNAL] RFI Response: Public Access

Dear OSTP,

I am writing to encourage you to do everything you can to promote open access to the published results of federal research. I support the existing policy to make all publications available, but it would be ideal to eliminate the 12-month embargo period. Science moves fastest, and ideas are commercialized most rapidly, without barriers to the spread of knowledge!

Sincerely,

Jonathan Aldrich
Professor of Computer Science
Carnegie Mellon University

From: Barbara Cereghino <barbara@cereghino.net>
Sent: Saturday, February 22, 2020 11:35 AM
To: MBX OSTP Public Access <MBX.OSTP.PublicAccess@ostp.eop.gov>
Subject: [EXTERNAL] RFI Response: Public Access

To:

Lisa Nichols
Assistant Director for Academic Engagement OSTP

I support free public access to research articles when the research was supported by public funds. I have read the argument that this would give foreign readers undeserved and dangerous access to American scientific research. However, in most cases anyone can already access publicly funded research articles if they pay to do so. It is particularly important for people to be able to read articles about medical issues.

Barbara Cereghino
6938 Custis Parkway
Falls Church, VA 22042

Sent from my iPad Pro

TO: Lisa Nichols,
Assistant Director for Academic
Engagement
OFFICE OF SCIENCE AND
TECHNOLOGY POLICY
Request for Information: Public
Access to Peer-Reviewed Scholarly
Publications, Data and Code Resulting
From Federally Funded Research
Office of Science and
Technology Policy (OSTP).
publicaccess@ostp.eop.gov

FROM:
Brian Hanley, PhD
Butterfly Sciences
PO Box 2363
Davis, CA 95617
(415) 518-8153
brian.paul.hanley@gmail.com

RFI Response: Public Access

More is at stake than simple access.

I think this issue has multiple aspects that interlock. It is not as simple as deciding whether to require immediate free access to all publicly funded scientific work. This issue includes the problems of predatory journals, the definition of what a predatory journal is, an increase in lesser quality, or outright malarkey articles appearing in top-tier journals, open-criticism/whistleblower sites, and the catch-22 situations that researchers increasingly find themselves in. Without acknowledging and addressing all of these issues, the situation is likely to worsen.

Open-access motivation and careers

I watched the rise of independent open-source journals, and I have published in them. I am also in the unusual position of publishing in both bioscience journals and in an economics journal, which are very different experiences.

In grad school, I got to know one of the instigators of the open-source movement a bit, a professor I rather liked, one of a pair of scholarly brothers. And I observed and discussed the *why* of this movement.

One of the major motivations for creating new journals like PloS One, or the BMC or MDPI, or others is that academics too often display what Max Planck acidly noted:

“A new scientific truth does not triumph by convincing its opponents and making them see the light, but rather because its opponents eventually die, and a new generation grows up that is familiar with it.”

In the context of publishing scholarly articles, competition to publish in journals becomes competitive as the “top journals” polish their brand by exclusion. Since the product that academics are paid for is research publications, essentially this means they are gatekeepers to careers.

I was at a hearing in DC 16 years ago on biodefense, an area I have contributed to. I happened to sit next to the Editor in Chief of Nature. The headliner speaker for this event was Craig Venter. He gave a short talk, and during the talk made a number of statements that I knew were simply wrong. This showed me that this particular hero had feet of clay, first of all. But I also told the EiC what they were.

I was younger and less cynical then, so I assumed he might have some interest. In the end he turned to me, hissed, “I don’t give a shit,” and when the talk was over, he got up and made his way to Venter, and was obviously buttering him up. The point of that story was that it was the first time that I saw directly how the politics at this top journal actually worked. And no criticism of Venter appeared in their pages.

It was in response to the entrenched interests problem of which the above is just one little wavelet on an ocean that young, bright scientists staged an end-run around the wall with the gatekeepers guarding the entrance. That end-run was the open-source journal movement. It enabled them to publish their work, and in addition, their work didn’t have to be modified to fit the whimsy of some arbitrary set of reviewers.

These young scientists also developed alternative sources of funding in order to move forward. Obtaining funding can be quite difficult, with an NIH RO1 grant being the prize that so many aspire to. Some scientists have difficulty getting such large grants. I was quite surprised a few years ago when talking to George Church at Harvard, when he told me that he had never gotten an RO1. I assumed that he had because his lab is around half the size of the entire Buck Institute for Aging.

Working in a lab that did have an RO1 when I was in grad school, and observing some of the shenanigans/horsetrading that go into obtaining large grants, I have come to the conclusion that to a significant degree it is a mutual back scratching society. One needs allies, and one of the ways to get allies is to be, well, not exactly the leader. Thought leaders are scary and obnoxious to those who want to be that but are not. And some people are in science research as their “business” not really because they care that much.

So, in a nutshell, the open-access journal movement enabled new researchers who were excluded from the clubs that allowed advancement to do so. Yes, it is also about open-access. Today, papers that are published open-access are more likely to get cited. I suspect this is because it’s just easier for scientists to read them. Scientists at lesser universities have long had libraries that didn’t subscribe to everything.

The rise of “predatory” journals

I don’t have a ready statistical analysis of introduction of predatory journals by year. What I have is years of interaction with Jeffrey Beall, an activist librarian who created Beall’s list, and reading his list. Jeffrey was forced into retirement by his institution as a result of his activism, which is something I find quite disturbing. I found this out in correspondence with him this January.

I don’t agree with everything Jeffrey has said and done. I think that his list was a “one big hammer” approach to a problem that requires considerably more nuance. In my most recent correspondence I proposed to Jeffrey that nuance is necessary using the metaphor of a paper I published last year on the ethics of self-experimentation.

When writing this paper, I was asked to create a survey of what scientists think about self-experiments. And yet, technically speaking, a blood drop collected from a fingertip lancet is a self-experiment. On the other end of the

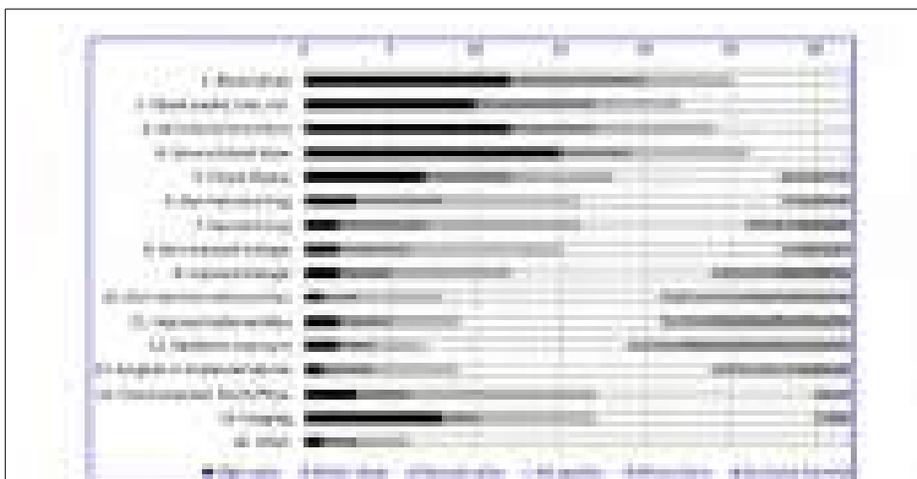


Figure 4 from: Hanley, Bains, Church (2019) Review of Scientific Self-Experimentation: Ethics History, Regulation, Scenarios, and Views Among Ethics Committees and Prominent Scientists. *Rejuvenation Res.* 2019 Feb;22(1):31-42. doi: 10.1089/rej.2018.2059

spectrum is something like drinking a radioactive tracer, or inserting a catheter into one's own heart. For that paper, I created the first categorization of self-experiments. This was long overdue.

We need to do something along these lines for evaluating journals. Some objective scale needs to be created that we can agree on. A privately held open-access journal company that has editorial boards for its journals which are real, has good peer review, but may have a weird final edit process, or has a CEO whose antics are odd, is a quite different kettle of fish from a journal that performs no review, claims editors that it does not have, or impersonates a real journal by grabbing a URL for the purpose of fraud.

These are the starting criteria I propose. Some of them may provoke argument. Others will probably be received well by most readers.

1. *A journal needs a bona fide editorial board* of people with recognized qualifications as long as those people have not published falsified work.
 - A) A journal may have a single editor, or a system in which editors perform reviews rather than sending them out. If so, this must be stated, and the qualifications of the editor(s) posted.
2. *We need a better process for bringing journal articles into PubMed's NCBI archive.* The process now is problematic because a journal must operate for a period of time, collect good articles, and then be evaluated. This creates a Catch-22, as there is a real risk that such articles will never be accepted for reasons other than being evaluated as not passing NCBI review.
 - A) This happened to me. I was published in a journal that had started the process¹, then this journal was acquired by MDPI. MDPI decided that the only thing it wanted to retain was the name, and did not take the previously reviewed and accepted papers.
 - B) As a result, since it has been submitted and accepted, I cannot submit it elsewhere. This is an author's Catch-22. To a great degree, if a paper isn't included in PubMed, it doesn't exist.
3. *I propose that journals make application and get provisionally accepted by PubMed up front before collecting papers.* The current policy was created in response to the plethora of open-access new journals. The published papers would go into the archive. If the journal ceased operating acceptably, it would have its archive privileges removed.
4. *A journal has the obligation to not only review submissions, but to police reviews.* At the very least there should be a statistical quality control process in place to rate the quality of reviews.
 - A) A scholarly review should be required to be specific, raise addressable issues that are clearly defined, not conflict with itself, and not claim spurious facts.
 - B) There should be a way for authors to appeal to editors regarding reviews. Editors should be obligated to throw out reviews that are poorly done and get new reviews done.
 - C) For any article, an author may request open review of their article.
5. *I believe that only not-for-profit organizations should operate scientific journals.* There should be no for-profit operation nor ownership of journals.
 - A) Corollary to this, there should be reasonable cost to publication.

There is a wide range of predatory behaviors. On the high end there are journals (like Springer-Nature) that are money grubbers. This tier of journals have profit margins of 30%². In economics this is

1 Hanley, B. (2011) Dual-gender macro-chimeric tissue discordance is predicted to be a significant cause of human homosexuality and transgenderism. *Hypotheses in the Life Sciences*. Vol 1, No 3. <http://www.hyls.org/index.php/hyls/article/view/57/0.html>

2 Andrew Suarez, Terry McGlynn (2017) The Fallacy of Open-Access Publication. *The Chronicle of Higher Education*. <https://www.chronicle.com/article/The-Fallacy-of-Open-Access/241786>

called rentier behavior. The sector has caught the attention of private equity enough to hit the pages of PitchBook which tracks PE and VC activity³. The mid-tier are journals like PloS and the BMC journals which were recently acquired by Springer-Nature on an acquisition binge.

On the low end some journals have lousy internal operations but actually do good quality reviews and (at the time I submitted) a sound editorial board (my experience with the OMICSONLINE Journal of Bioterrorism and Biodefense⁴). For what it's worth, my experience with the BMC journals back end final edit process was actually worse than my experience with Mr. Gdela's OMICSONLINE system. To get the final edit to be correct when the editor I was assigned consistently screwed it up required a phone call to BMC headquarters in London and some irate speech. I was able to educate the final edit gentleman from Mr. Gdela's organization without resorting to that.

At the bottom of the barrel are journals with fake editorial boards using guile to sucker the unwary, and fake their reviews, or have no review process.

Arguably, those journals that impersonate real journals to defraud submitters out of their money, without publishing anything, are the least damaging academically. When this happens, the manuscript can be submitted elsewhere. It will not end up in a no-man's-land academic limbo, published, but not respectable. That does not mean, however, that there shouldn't be vigorous pursuit of both kinds of bottom-feeder predatory journals.

Recommendations:

- A fair process for vetting a new journal with PubMed/NCBI before it starts. Creating treaty language to enforce some version of this in other nations.
- Create an objective set of standards of conduct for academic journals as discussed above.
- Create a process for working with the gray area journals like OMICSONLINE to bring them into compliance. Create tools for pushing them.
- Create a process by which authors can petition to have their submissions reviewed for submission to PubMed/NCBI if they are caught in Catch-22 situations.
- Create tools for enforcement, or else funding for enforcement of actually fake journals.
- Legislation specifying that academic journals may only be operated by non-profit entities. Create treaty language to get other nations to sign up.

Open-access criticism web sites

PubPeer is the site that some journals and academics love to hate. It allows anonymous critique of papers, and automatically notifies authors. This has resulted in exposure of issues with papers placed in "top journals" with the highest impact factors, some that are more technicalities⁵, others very serious problems with their basic science^{6,7}.

Retraction watch is another such site. Together, they are trying to improve the quality of science.

3 (2020) PE-backed Springer Nature renews €7B+ IPO plans. <https://pitchbook.com/newsletter/pe-backed-springer-nature-renews-7b-ipo-plans>

4 Hanley BP (2013) Security in a Goldfish Bowl: the NSABB's Exacerbation of the Bioterrorism Threat. J Bioterr Biodef S3: 013. doi:10.4172/2157-2526.S3-013 <https://www.omicsonline.org/security-in-a-goldfish-bowl-the-nsabbs-exacerbation-of-the-bioterrorism-threat-2157-2526.S3-013.php?aid=11953>

5 Leading diabetes researcher corrects paper as more than a dozen studies are questioned on PubPeer.

<http://retractionwatch.com/2015/01/12/leading-diabetes-researcher-corrects-paper-dozen-studies-questioned-pubpeer/>

6 Apollo Lunar Astronauts Show Higher Cardiovascular Disease Mortality: Possible Deep Space Radiation Effects on the Vascular Endothelium Scientific Reports (2016) - 7 Comments <https://pubpeer.com/publications/28976568184E8C7FF4FB248F6B488C>

Perhaps something should be considered relative to this and what a proper journal is.

My economics journal experience

Having only a science journal experience, I was quite surprised when I wound up publishing a paper in an economics journal⁸. There was no article charge. The submission process was streamlined, completely removing the back-end final editing that science journals do.

I was given a template. Initially, this was a LaTeX template, but I found my equations could not be represented in TeX. So, they gave me an MSWord template. It was up to me to format everything exactly as I wanted it, and to follow the citation format. I submitted, it was format checked, posted as a pre-print, and sent out for review. It passed, and that was that. A year or so later I had a small correction and was allowed to update it. There is one format for the paper, a PDF. It works fine.

I suppose that economists could be expected to be economic in their publishing. I might submit that something along these lines could be adopted as a standard for science publication. PubMed now supports HTML, something called PubReader which looks like full-screen HTML, ePub (an ebook format), and PDF. I imagine that there is one format given to PubMed from which it automatically generates the four formats.

I am quite sure that scientists could master any format that PubMed asked for to submit their articles, and look at translation into the 4 formats and make them look right.

Summary:

If we want to fix academic publishing, we need to look at the whole problem. Some of it, such as the predatory journal issue has been created by Open-Access, but it is not going away. Some of it is the burden of history from old-school publishers. We should do the following:

- Create a set of objective standards that all science journals should be measured by. Work with, or prosecute those that don't measure up. Create better mechanisms for dealing with publication problems for scientists, including obligations to police reviews. The hoary peer review needs some standards it should meet. Create ways to correct problems that have emerged such as authors caught in Catch-22 situations with their publications because they didn't realize a journal article would not go into the archive.
- Consider integrating open-access criticism sites such as PubPeer and Retraction Watch into the overall science mechanism, or watch this area and find a way to nurture it without killing it.
- Seriously look at how other areas of academia that are not as well funded handle open-access publishing and minimize cost. Consider simplification with templates that leave all formatting up to the authors. I can see a future where essentially, a journal is created by its approved access to submit reviewed papers into government archives like PubMed.

7 Cosmic radiation exposure and persistent cognitive dysfunction Scientific Reports (2016) - 1 Comment <https://pubpeer.com/publications/121B6724F1A7697B16B2164421DBD8>

8 Hanley, B. (2013) Release of the Kraken: A Novel Money Multiplier Equation's Debut in 21st Century Banking. Economics. University of Kiel. No. 2012-3 <http://www.economics-ejournal.org/economics/journalarticles/2012-3>

From: Levental, Ilya <Ilya.Levental@uth.tmc.edu>
Sent: Friday, February 21, 2020 3:01 PM
To: MBX OSTP Public Access <MBX.OSTP.PublicAccess@ostp.eop.gov>
Subject: [EXTERNAL] RFI Response: Public Access

I believe all science produced using Federal funding should be non-embargoed Open Access.

--

Ilya Levental, PhD
Associate Professor of Integrative Biology and Pharmacology
CPRIT Scholar in Cancer Research
McGovern Medical School at the University of Texas - Houston
713-500-5566
>www.levental-lab.com<

Dear OSTP,

This letter is a response to comment on your Request for Information post in Vol.85, No.33, 9488 in the Federal Register and re-circulated by multiple science news agencies.

“Free” access to unclassified public research supported by the U.S. Government is a pride and joy of our nation’s outstanding immigrants and established families. If it were not for such federally funded scientific research programs, my father would not have been able to afford to study in the United States up to his Ph.D. degree and advance science in collaboration with the People’s Republic of China. My father gave up his Chinese citizenship and lucrative position that Beijing offered for him to return to China and naturalized to become a United States citizen. Today, we could imagine President Donald J Trump say that was a very stupid decision of him because he could have joined his colleagues to make hundreds of millions of dollars with the Communist Party of China. Instead, he had me who was born in the United States as a natural born citizen.

When we say “free” access to unclassified public research, we mean “free” access in reliance of our public libraries and universities and telecommunications infrastructure. This is not “free”. Our nation’s outstanding immigrants did not immigrate to the United States to be heckled and insulted at every political rally waiting to be bashed by a political contender looking for the popular vote. OSTP policies on Open Science are not only an insult to our outstanding immigrants, but also an insult to the many established American families that took great risks and efforts to convince us to become U.S. citizens. (1) “Free” access to unclassified research is not free at all. Most obvious, we require a visit to a public library, open university, or telecommunications service to access such unclassified research. (2) The selection of federally funded research is not “free”. There are many political agendas in the selection of unclassified federally funded research that advances commerce for industries. Though, it is important to note that significant efforts have been made since President Donald J Trump’s administration to award unclassified research based on “merit”. What “merit”? It appears to be “merit” that attracts the most money from investors. This is also not “free”. (3) The goals of unclassified scientific research as of 2020 are dramatically different from the goals of unclassified scientific research that has been changing since the end of George W. Bush’s administration all the way to the beginning of our open door policies in immigration. This statement is not to point fingers. This statement is to emphasize unclassified scientific research.

Why should every American taxpayer fund unclassified scientific research? For over fifty years in US policy, this has been to bring “free”-dom and the best, brightest, and hardest working immigrants to the United States of America. That was a rational deal. The federally funded unclassified scientific intervention of industries that are already receiving hundreds of millions of dollars to be capitalized out of America’s pockets does not seem to bring “free”-dom. This is overburdening already existing outstanding immigrants and established American families working in such industries, for whomever or whatever are the owners of such industries (are these corporate owners of such industries even American?). I personally understand the struggles of living and working in such high stakes industries as early I established memory permanence when I was five years old. There are already many lost family and unstable boys and girls who have little to no common sense about how to take care of themselves and worsening. To burden both capital owners and federal funding to such unclassified industries is a personal warning that I have been attempting to deliver the message to our fellow Americans and those seeking U.S. citizenship (again, are these corporate owners even American?). (4) Unclassified scientific research in the United States requires common leadership for common people out of common taxes. Our common voter has limited understanding about the potentials and perils of unclassified scientific research. Restating problem (3), much of our outstanding immigrants and established American families already owe so much duty to others. President Donald J Trump’s selection of research that is reserved for up to hundreds of billions of dollars in federal funding is not the solution we can take without caution about the intents of lobbyists and leaders in our executive powers. Even if I refuse and protest to allocate my federal tax dollars to people who are burdened by capital investors (again, are these corporate owners even American?), I can only voice my protest against using such dollars to our already burdened outstanding immigrants and established American families. (5) These points are not exclusive.

With my written protest to OSTP’s solicitation for comments, I address the comments you solicit. I will continue my protest since former President Barack Obama’s inaction and demonizing of our situation between established American families and outstanding immigrants versus the common public.

What current limitations exist to the effective communication of research outputs (publications, data, and code) and how might communications evolve to accelerate public access while advancing the quality of scientific research? RESPONSE: Outsource to private companies. Do not hire any of

our established American families and outstanding immigrants willing to volunteer or do the job with statutory government wages. You do not even have the human resource administrative capacity anymore to know who are loyal to the United States. This question is begging for an answer.

What are the barriers to and opportunities for change? RESPONSE: Nothing. Since former President Barack Obama's administration, our nation has been outsourcing our infrastructure responsible for the lives of hundreds of millions of Americans, each, in the hands of corporate investors of unknown origin.

What more can Federal agencies do to make tax-payer funded research results, including peer-reviewed author manuscripts, data, and code funded by the Federal Government, freely and publicly accessible in a way that minimizes delay, maximizes access, and enhances usability? RESPONSE: Publish through multiple platforms. This question is also begging for an answer.

How can the Federal Government engage with other sectors to achieve these goals? RESPONSE: Outsource. You are again begging for an answer.

How would American science leadership and American competitiveness benefit from immediate access to these resources? RESPONSE: You are again begging for an answer. People are defending with their lives to protect our non-unclassified research and development that President Donald J Trump's administration continues to assault on Americans since former President Barack Obama.

What are potential challenges and effective approaches for overcoming them? RESPONSE: Outsource. You are again begging for an answer.

Analyses that weigh the trade-offs of different approaches and models, especially that provide data, will be particularly helpful. RESPONSE: Use the same unclassified models as your Central Intelligence Agency. Their unclassified resources are freely available to anyone who can access their government website. PUBLICATION TITLES: On Thinking and Writing: Cognitive Science and Intelligence Analysis, A Tradecraft Primer: Structured Analytic Techniques for Improving Intelligence Analysis, Curing Analytic Pathologies: Pathways to Improved Intelligence Analysis, Analytic Culture in the US Intelligence Community: An Ethnographic Study, Intelligence and Policy: The Evolving Relationship, Roundtable Report June 2004, The Founding Fathers of American Intelligence, Psychology of Intelligence Analysis, Sharing Secrets With Lawmakers: Congress as a

User of Intelligence. HYPERLINK: <https://www.cia.gov/library/center-for-the-study-of-intelligence/csi-publications/books-and-monographs/>

Any additional information that might be considered for Federal policies related to public access to peer-reviewed author manuscripts, data, and code resulting from federally supported research. RESPONSE: You are again begging for an answer.

I hope my response to your solicitation for comments will be useful under your continued leadership over OSTP and serious unclassified advice to our second consecutive President of the United States of America besieging our own nation (~14 years self-siege), and certainly not the first nor last.

Alan Jerry Pan
@alan.pan@alumni.iu.edu
PhD Student at Beijing Normal University
US Citizen

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May 6, 2020

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BY ELECTRONIC SUBMISSION

Response to OSTP Request for Information – FR Doc. 2020-06622 – “Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research”

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Dear Dr. Droegemeier,

I am grateful for the opportunity to respond to this request for information. In particular, I write to caution OSTP against adopting a policy mandating the free distribution of peer-reviewed manuscripts earlier than one year after publication.

MULTIMEDIA REVIEW

EDITOR-ELECT

Matthew Carper, Ph.D.
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As an editor for the Association for Behavioral and Cognitive Therapies, we publish cutting-edge research and research-informed clinically useful articles that move science and practice forward and help ameliorate the human condition. I am incoming Editor of *Cognitive and Behavioral Practice (C&BP)*. *C&BP* is an evidence-based journal designed to bridge the gap between empirical research and clinical practice of **cognitive** and **behavioral therapies**. *C&BP* differs from other journals in our field in that it is not a primary outlet for the publication of outcome studies. The primary focus is on application and implementation of therapeutic procedures. Accordingly, topics are selected to address current challenges facing practitioners, both in terms of technique, process, and the content of treatment. To meet this goal, articles may include rich descriptions of clinical interventions, case examples including client-therapist dialogue, embedded video clips readers can view online, and significant case descriptions.

EDITORIAL ASSISTANT

Bonnie Brown, RN

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Ultimately, we strive to support the progress of science by producing and broadly disseminating the highest quality peer-reviewed journals possible. Publishers and societies have worked to strengthen scholarly communication and promote open science. However, it is critical that these efforts take place within a framework that respects intellectual property rights and our ability to invest in high-quality publications, and that does not hinder researchers from communicating their discoveries.

COORDINATOR OF PUBLICATIONS

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As you are aware, federal agencies currently require that peer-reviewed manuscripts be made freely available online—within one year of publication—if they discuss research funded at least in part by a government grant.¹ This policy represents a significant compromise that balances our shared goals of providing broad access with the need for our organization to recoup the substantial investments we make in the peer-review, editing, publication, distribution, and long-term stewardship of these articles. This one-year compromise contrasts with the length of a full copyright term of life-of-the-author plus 70 years. Importantly, this compromise reflects Congress' guidance in the authorizing legislation for the current policy that the Administration must “take into consideration the role that scientific publishers play in the peer review process in ensuring the integrity of the record of scientific research, including the investments and added value that they make.”¹

DIRECTOR OF COMMUNICATIONS

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¹ These policies were developed pursuant to OSTP's requirement that agencies “shall use a twelve-month post-publication embargo period as a guideline for making research papers publicly available . . .” See OSTP Memorandum on “Increasing Access to the Results of Federally Funded Scientific Research” (Feb. 22, 2013).

This policy represents a significant compromise that balances our shared goals of providing broad access with the need for our organization to recoup the substantial investments we make in the peer-review, editing, publication, distribution, and long-term stewardship of these articles. This one-year compromise contrasts with the length of a full copyright term of life-of-the-author plus 70 years. Importantly, this compromise reflects Congress' guidance in the authorizing legislation for the current policy that the Administration must "take into consideration the role that scientific publishers play in the peer review process in ensuring the integrity of the record of scientific research, including the investments and added value that they make."¹

Reducing or eliminating the current one-year embargo would significantly jeopardize our editorial process that produces the high-quality peer-reviewed journals that our readers in psychology community rely on. In so doing, such a policy would contravene Congress' clear guidance to take our role and investments into consideration. Furthermore, such a policy would directly result in a reduction in either the quantity or quality (or more likely, both) of peer-reviewed journal articles produced by hundreds of organizations like ours.

This would not only be harmful to the research enterprise, it would also be harmful to the psychology researchers, clinicians, students, teachers, and clients who are the ultimate beneficiaries of the scholarly journals we produce.

We urge you not to disrupt our ability to support the advancement of research and patient care in psychology, and we look forward to working together to identify solutions that advance the goals of open science without undermining the communication of research findings and analyses through peer-reviewed journals.

Thank you again for the opportunity to submit these comments.

Sincerely,

A handwritten signature in black ink, appearing to read "Nikolaos Kazantzis". The signature is fluid and cursive, with the first name being the most prominent.

Nikolaos Kazantzis, Ph.D.
Editor-Elect
Cognitive and Behavioral Practice

¹ America COMPETES Reauthorization Act of 2010, Section 103(b)(9), available at: <https://www.congress.gov/111/plaws/publ358/PLAW-111publ358.pdf>.



May 6, 2020

Lisa Nichols
Assistant Director for Academic Engagement
Office of Science and Technology Policy
Executive Office of the President
1650 Pennsylvania Ave NW
Washington, DC 20504

Re: Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research

Dear Dr. Nichols,

On behalf of the American Educational Research Association (AERA), thank you for the opportunity to comment on the Office of Science and Technology Policy (OSTP) request for information on Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research.

AERA is the major national scientific association of 25,000 faculty, researchers, graduate students, and other distinguished professionals dedicated to advancing knowledge about education, encouraging scholarly inquiry related to education, and promoting the use of research to improve education and serve the public good. AERA has a long-standing commitment to providing public access to research and scholarly publications, and the data and code supporting those publications, regardless of federal funding. AERA has advanced open access through publication of an open access journal, *AERA Open*, open access to articles in *Educational Researcher*, and through providing authors in all seven AERA journals with toll free links that they can be listed on their vita and posted on their website. In addition, AERA has an Online Paper Repository for peer reviewed papers at early versioning stages of the knowledge production cycle that is freely offered to authors and to users with a Digital Object Identifier (DOI) and with space where authors can include a further citation to the final publication, reinforcing the value of versioning control.

AERA also has a longstanding commitment to data sharing as set forth in Standard 14.06 (a)–(f) of the AERA Code of Ethics (<https://doi.org/10.3102/0013189X11410403>) and in the *Standards for Reporting on Empirical Social Science Research in AERA Publications* (<http://journals.sagepub.com/doi/pdf/10.3102/0013189X035006033>) as well as in the presence of a dedicated repository in collaboration with the Inter-University Consortium for Political and Social Research (ICPSR) for education research data from investigator-

initiated NSF studies and in AERA's research awards for dissertation and small grant support to early career scientists, among other initiatives.

We very much appreciate and support the attention of the OSTP and the Subcommittee on Open Science to building on the progress of federal agencies in developing public access plans to enable the availability of peer-reviewed scholarly publications and data as indicated in the 2013 OSTP memorandum ("2013 OSTP memo"), Increasing Access to the Results of Federally Funded Research.

AERA's input related to issues taken up in the 2013 memorandum was initially provided in response to a 2011 OSTP Request for Information (RFI) for "Public Access to Digital Data Resulting from Federally Funded Scientific Research"

http://www.aera.net/Portals/38/docs/Education_Research_and_Research_Policy/Open%20Access/AERAResponsePublicAccessDigitalDataOSTP_FR76,No%20218,70176_1-12-12_.pdf. This comment speaks to key elements that guide your current request for information and may also inform the efforts of the Joint Committee on the Research Environment, in particular with respect to data access and sharing data. AERA's comments herein address the three topics on which OSTP and the Subcommittee on Open Science have specified a primary interest.

1. What current limitations exist to the effective communication of research outputs (publications, data, and code) and how might communications evolve to accelerate public access while advancing the quality of scientific research? What are the barriers to and opportunities for change?

One limitation to communicating research outputs is determining appropriate ways to measure and value these contributions, particularly in the cases of sharing data and code. Another limitation is the lack of systematic convergence across stakeholders and leaders. A third limitation is how to communicate the science residing in publications and data in ways meaningful and accessible to the public that our sciences serve.

In an effort to build knowledge about research outputs and evolve an aligned culture of academic and scientific support, AERA and the Council of Graduate Schools with funding from the National Science Foundation are jointly undertaking an initiative to address what counts as open science productivity and quality for research products beyond scientific articles—with the sharing of data and code high among the key forms of scientific activities being taken into account (reporting on null results and replication studies being two other examples). We have been holding listening sessions for science and academic leaders since September 2019, with most recently a very strong turnout of chairs of sections of the American Association for the Advancement of Science in February 2020. This information gathering effort and the research we are undertaking will culminate in a working conference to examine concrete models of what counts as quality science, address the barriers to change, and develop actionable strategies that can be "tested" in institutions interested in rethinking performance metrics and modes of assessing productivity beyond publication in highly ranked journals. While no one initiative alone is sufficient, it represents a genre of work that can matter.

At the investigator level, there are costs and technical expertise needed to clean, store, protect, and share data. AERA applauded the National Institutes of Health (NIH) for including draft supplemental guidance on allowable costs for data management and sharing as NIH finalizes its agency-wide Data Management and Sharing Plan (see https://www.aera.net/Portals/38/docs/Gov_Relations/AERA%20Comments%20-%20Draft%20NIH%20Data%20Management%20and%20Sharing%20Policy_1-10-20_FINAL.pdf). We urge OSTP to encourage agencies to support reasonable costs for access to data sets and code from federally funded research and to the allocation of resources to cover article-publishing costs that are also about data and code.

Without diminishing the value of project-related funding, resources might be allocated to research institutions, including scientific societies, that could be used for similar purposes but at a more sustainable and systematic level to support data sharing for federally funded and non-federally funded science. Perhaps most important is to invest in data repositories and certify those of the highest quality that can provide what scientists and even big team science cannot provide for themselves—an environment with the dedicated expertise to make discoverable, accessible, sustainable, secure, and safe data, code, and other related science assets. We made this point in our letter to you of March 17, 2020—emphasizing the value of investing in the best data repositories across fields of science to efficiently and effectively serve science and society (see https://www.aera.net/Portals/38/AERA%20Comments_OSTP%20RFC%20Draft%20Desirable%20Characteristics%20of%20Repositories_03-17-20_FINAL_v2.pdf).

A third issue in seeking to reduce barriers for effective public access to science resides in the disjuncture between scientific publications and their accessibility and readiness for public access. One of the areas of inhibition about open access publishing is the high cost relative to the low public gain. That may indeed be true, but presents us with an opportunity to elevate access to science as a more accessible public good. Making knowledge free does not mean it is accessible or will be used. We urge OSTP to examine this very question and consider the potential role of scientific societies in translating and mediating the communication of knowledge to diverse public and policy communities, building communications capacities in our next generation of scientists, and expanding the accessibility and relevance of content through accompanying “science facts and findings” and “data counts” type resources. AERA and other science societies have actively move in these directions and would welcome discussing such opportunities with OSTP.

2. What more can Federal agencies do to make tax-payer funded research results, including peer-reviewed author manuscripts, data, and code funded by the Federal Government, freely and publicly accessible in a way that minimizes delay, maximizes access, and enhances usability? How can the Federal Government engage with other sectors to achieve these goals?

Scientific societies serve as reviewers and disseminators of quality research through scientific publishing attest to work of the highest quality. They advance cumulative and innovative knowledge through a vetting process based on high standards of peer review. They also serve as knowledge catalysts, reinvesting resources generated through

scholarly publishing into efforts to further advance their fields. The revenue from publishing is currently essential not only to sustain high-quality publishing but also to support capacity building for the next generation of scholars (e.g., doctoral dissertation grants), professional development, and other programming (e.g., funding research conferences) core to the scientific enterprise.

During the development of the 2013 OSTP memo, AERA then supported the 12-month embargo on public access to peer-reviewed scholarly publications currently in place. Even with this embargo period, there are options that publishers and scientific societies offer to have published articles available prior to the 12-month timeframe that also provide financial resources to scientific societies. As one example, AERA has long offered the option for authors to pay an article processing charge in order to provide ungated access to authors. AERA provides toll free links for journalists and science writers covering education research. And, the Association readily harvests and makes openly and widely accessible substantive content when connected to a significant issue of public relevance (e.g., the COVID-19 resource page on the AERA website); we have routinely provided free links to articles and resources on many issues over the years—including bullying and violence in communities and schools just to name two.

In addition, as noted above, AERA in its partnership with SAGE Publications has provided the option of toll-free links to all authors for sharing gated articles, as noted above. Toll-free hyperlinks can be utilized immediately upon publication without danger to the sustainability of the enterprise. Such links also help to ensure proper use and citation counts, which would be compromised if articles were maintained separately in multiple archives where metrics of downloads from multiple locations would be far more difficult to ascertain and concerns about final authentic versions more uncertain.

We also value rethinking the models now in place. We would encourage investing in partnerships that hold promise of building platforms around data, publications, capacity building, training in data and data use, and fostering new communities of science and scientists. NSF had that vision when the Directorate for Education and Human Resources called for data hub proposals in STEM education research one year ago and in January selected the AERA-ICPSR data hub (Partnerships for Expanding the Education Research in STEM) to make that ambition a reality, <https://www.era.net/Newsroom/NSF-Selects-AERA-and-ICPSR-to-Create-New-Data-Hub-to-Boost-STEM-Education-Research-Efforts>. We would welcome the opportunity of discussing this research and data hub with OSTP and the Subcommittee on Open Science as a model that could realize the very goals that we support and OSTP seeks.

We have already seen more specific ongoing partnerships with organizations that provide archiving and metadata capabilities and can link federal funding to publications, data, and code. ORCID is one example that allows researchers to create individual identifiers that connect their publications and associated data sets to them. In addition, CHORUS uses data submitted by authors in the Crossref Open Funder Registry in order to link publications to federal grants. Several federal agencies already are partners with CHORUS to broaden public access to the research they support.

3. How would American science leadership and American competitiveness benefit from immediate access to these resources? What are potential challenges and effective approaches for overcoming them? Analyses that weigh the trade-offs of different approaches and models, especially those that provide data, will be particularly helpful.

We can point to some empirical data on the impact that open access to all journal publications has in the dissemination of research. As AERA's publisher, SAGE Publications, transitioned to a different online platform in 2017, the six AERA "gated" journals were made open access for a two-month period. The temporary lifting of the paywall was not announced. While there was an increase in downloads of articles during that timeframe ranging from 55 to 95 percent by individual journal, there was also an additional result – downloads decreased for the Association's overall open-access journal, *AERA Open*, in that period, and possibly affected download rates for other education research journals. While it was estimated that the number of downloads may have resulted in as many as 250 citations for *Education Researcher*, the authors of the article on this topic noted that citations are not necessarily the best measure for impact in policy and practice. In addition, they recommended that researchers should make working papers or other pre-publication versions available.¹

AERA values the benefits that accrue to science and society of open knowledge. For scientific societies like AERA we face a formidable challenge of how to underwrite the costs of doing so and at the same time generate the modest revenues through affordable publishing that support high-quality, trustworthy scientific journals; our own material investments in dissertation grants programs, early career scholars, and related professional development activities; dedicated programming directed to advancing scientific diversities in our field; projects that cultivate a culture of best practices in science, including related to data sharing, and most recently engaging with issues related to professional behavior, climate, and conduct.

AERA applauds and shares the goals and ambitions enunciated over the years by OSTP. The challenge for all organizational partners is to arrive at models that can nurture, sustain, and support our next generation of innovative and inclusive work. We appreciate the opportunity to work with you and to advance this comment.

Sincerely,



Felice J. Levine, PhD
Executive Director
flevine@aera.net
202-238-3201

¹ Gershenson, S., Polikoff, M. S., & Wang, R. (2020). When Paywall Goes AWOL: The Demand for Open-Access Education Research. *Educational Researcher*. <https://doi.org/10.3102/0013189X20909834>.

RESPONSE: Public Access to Peer-Reviewed Scholarly Publications, Data and Code Resulting From Federally Funded Research

John Willinsky, Khosla Family Professor of Education, Stanford University, and Director, Public Knowledge Project

What follows is a recommendation that OSTP ask the United States Copyright Office to consider whether copyright reform might be among the more effective ways of supporting public access to peer-reviewed scholarly publications. I present a line of reasoning for such changes, which I am developing into a book-length treatment (draft [here](#)). There is a case to be made for amending copyright law to ensure broad public access to not only federally funded scientific research but to the whole of this body of work, with such access in accord with the constitutional directive for copyright law, which empowers Congress to fashion laws “to promote the progress of science.”

1. Creating public access to “federally funded research” financed by one of the major federal funding agencies, such as NIH, NSF, NEH, as well as the Departments of Defense, Energy and Education, etc. makes perfect sense at one level, as the federal government, the principal investigator, and the researcher’s institution enter into a contract that can include require the author to grant a non-exclusive license to the government permitting public access.
2. However, the resulting “public access” continues – in the case of the NIH Public Access Policy, for example – to be compromised by the need to accommodate publishers who, having no viable alternative to subscription revenues, insist upon public access embargoes and final-draft requirements that protect the subscriptions. Until publishers are offered an alternative legal structure for securing compensation, they are going to find it difficult to provide immediate and complete public access.
3. This public access is also compromised as it is only applied to federally funded research. In the biomedical field this tends to exclude vital systematic reviews, which are typically not funded, as well as other critical areas of the research literature. The result for a user is a hit and miss experience with paywalls and public access that we have found discourage physicians and other health professionals from consulting the literature.¹

¹ Lauren A. Maggio, Ryan M. Steinberg, Tiziano Piccardi, John M. Willinsky, “Meta-Research: Reader engagement with medical content on Wikipedia” *eLife*, 2020;9:e52426, [link](#).

4. On the other hand, it can be argued that federal support extends to virtually all research through such means as, but not restricted to, the tax-exemptions extended to private research institutions as well as their endowment; the tax credits extended for industry research; other federal support for students and colleges. Pursuing public access to all peer reviewed scholarly publications delivers far more value for the broad public investment in research and higher learning.
5. Providing public access for all peer-reviewed scholarly publications is also merited by the consensus that has emerged among scholarly publishing's stakeholders (including researchers, society leaders, research librarians, research funders, and publishers) on the value of public access for scientific research. The big publishers in particular, who fought public access for a decade, are now onside if an alternative to subscription revenue can be ensured.
6. Despite this consensus on public access, the last three decades have been marked by countless publishing experiments, pilots, startups, legal workarounds, and other initiatives that have yet to demonstrate a clear road to public access for research, while driving the price of access to the brink of unsustainability. It has resulted in public access to perhaps a third of the literature, with much of it in the compromised form indicated above.² Projections suggest that it could take until 2060-2070 to reach universal public access.³
7. For all the experimentation that has gone on, copyright's role in impeding and facilitating public access to research has received little attention. This is understandable as copyright reform is a considerable undertaking. Yet Congress has amended copyright nearly 60 times since the arrival of the internet, to ensure that the law serves the public interests in video games, cellphones, music streaming, and so on.⁴ It has not yet considered how copyright might better promote the progress of science in the digital era.
8. If it is research's turn for a digital-era copyright update, the one change that is needed is to provide publishers with a similar legal assurance to the subscription

² Heather Piwowar, Jason Priem, Vincent Larivière, Juan Pablo Alperin, Lisa Matthias, Bree Norlander, Ashley Farley, Jevin West, and Stefanie Haustein, "The State of OA: A Large-scale Analysis of the Prevalence and Impact of Open Access Articles," *PeerJ* 6 (2018): e4375, [link](#).

³ Heather Piwowar, Jason Priem, and Richard Orr, The Future of OA: A large-scale analysis projecting Open Access publication and readership, *bioRxiv* 795310 (2019); doi: <https://doi.org/10.1101/795310>.

⁴ *Copyright Law of the United States and Related Laws Contained in Title 17 of the United States Code*, Circular 92, Washington: U.S. Copyright Office, Dec 2016, pp. vii-xii, [link](#).

system for now providing immediate and complete public access. a viable alternative to the subscriptions system that served journal publishing well enough in the age of print, without disrupting the economies of other copyright industries.

9. Copyright does have a legal structure that is employed sparingly, largely in markets that have failed to provide a valued service at a fair price. This is “compulsory licensing,” which has been most recently updated with the Music Modernization Act of 2018. In this case, compulsory licensing could be applied to peer-reviewed scholarly publications under terms that require public access on publication, with publishers compensated by the principal institutional users and funders of the research at prices set by the Copyright Royalty Judges.
10. The complexity of introducing compulsory licensing into scholarly publishing is not to be minimized. Yet its use in the music industry for over a century has been reviewed, adjusted, and extended many times, even as the U.S. music industry continues to dominate the musical world. Scholarly publishing does possess an advantage over the music industry in having a comprehensive and sophisticated digital indexing and tracking systems already in place.
11. While copyright reform remains a matter of national jurisdictions, the United States has a good record of participating in international intellectual property harmonization through WIPO, TRIPPS, and other agreements, suggesting that leadership shown by the United States, as the world’s leading source of research, in achieving public access through copyright reform could become a global phenomenon that delivers universal access for the benefit of humankind.
12. The Copyright Office holds that compulsory licenses should be used “only for as long as necessary to achieve a specific goal,” because “authors should enjoy exclusive rights to their creative works.”⁵ In this case, once the goal of universal public access to peer-reviewed scholarly publications is the norm on a sustainable basis, this form of licensing can be withdrawn. But note that the immediate public access this licensing will create will enable researchers to enjoy greater rights in conducting research and have their work contribute to it.

⁵ *Legal Issues in Mass Digitization: A Preliminary Analysis and Discussion Document*, United States Copyright Office, Washington, 2011, pp. 32, 38, [link](#).



IUMRS SURVEY ON THE EVOLUTION OF SCIENTIFIC PUBLISHING

DATA ANALYSIS AND REPORT

By far, authorship of publications is the most frequent ethical issue encountered by researchers.

*My Editor is:
Dysfunctional
Condescending
Supportive
Perfunctory
Conciliatory
Professional
Distant
Ridged
Imperious
Pacating
Tutoria
Unfair
Biased
Adversarial
Deferential
Collegial*

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HaiDian District, Beijing 100048, China
Tel: 86 10 68726306, 68722032
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IUMRS Survey
on the
Evolution of Scientific Publishing

Data Analysis and Report

31 October 2019

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INTRODUCTION

The International Union of Materials Research Societies (IUMRS) is an association of Materials Research Societies from around the world. Each individual member of those societies is a researcher who publishes the results of research and relies on the scientific literature to learn about the results of others. Many protocols and traditions in the publishing process have arisen over a century or more, but the recent advent of electronic resources and demands for open access to research reports and their underlying data has greatly complicated this vital aspect of an individual scientist's or engineer's job as well as the entire fabric of our society's science and technology enterprise. The Survey on the Evolution of Scientific Publishing, initiated by IUMRS in October 2018, was intended to collect opinions and some related demographics which, when aggregated, may provide a fresh perspective on the scientific publishing enterprise from viewpoint of the very people who are most closely affected by it.

Although the Survey comprised 133 questions, except for the first two and final questions that all respondents were asked to answer, the remainder were allocated to respondents based on their self-identified roles in the academic publishing universe. After indicating the region of the world where they work in the first question, the second question is where respondents indicated their role. Respondents with multiple roles were free to re-enter the Survey and specify additional roles. The available roles (and number of related Survey questions) as presented to respondents was as follows:

- A researcher who publishes in journals and/or conference proceedings (22). NOTE: At the 21st question, you will have the option to continue in the USER/READER role.
- A user/reader of the scientific literature who searches for reports of others of relevance to one's own work (21).
- An editorial/production employee of a publishing company, a professional or learned society, or an academy or institute that produces scientific journals (16).
- A scientific editor for a medium such as an archival journal that publishes research reports (12).
- An educator at a college/university who prepares students for careers in which they may use and/or contribute to the scientific literature (13).
- An official of a government agency/ministry or not-for-profit foundation that allocates funds to researchers and their institutions (11).
- A manager of research who directs and evaluates the performance of researchers (20).
- A corporate executive who allocates support for internal corporate research (20).
- A librarian or archivist. I.e., an operator or designer of an access/retrieval/storage facility for the published literature, whether a physical library (18), or an electronic resource (14).
- A patent attorney or equivalent expert who identifies Intellectual Property and assesses its publishability (13).

Time devoted to the Survey by respondents ranged from five to 12 minutes, depending on their selected role. No personal identifying information was collected. This anonymous Survey's online host, SurveyMonkey®, is fully GDPR compliant. IP addresses of the devices used by respondents were recorded in order to estimate the number of respondents who took the Survey for more than one role. Assuming that a unique IP address corresponds to a unique respondent, we found that 48 respondents revisited the Survey for that reason.

An Executive Summary follows, notwithstanding the editors' inability to do justice to the full depth and breadth of the responses, especially of the free text responses. We therefore encourage readers to peruse

the litany of results provided in the main body of this report. First, however, a careful review of the sampling caveats called out in the Methodology section is strongly encouraged. Whereas we believe the overall results of this Survey do provide a valid picture, many venues of interest are under-represented or entirely absent due to a variety of practical impediments to the promulgation of a Survey of this kind by an association such as IUMRS.

Location by page number within this report of the data displayed in charts and tables is provided in Appendix A.



Geo-location of Respondents (See page 8)

EXECUTIVE SUMMARY

As requested in the previous section, we very much encourage reading the following Methodology section in order to place our summary and subsequent findings in proper context. By far, the role favored by the majority of respondents was RESEARCHER. Second place was occupied by USER/READER. Therefore, findings of note mentioned below derive primarily from those two roles. Although the role-identification question was posed only in order to segregate the various roles, it turns out that it actually revealed a strong bias among respondents to identify as RESEARCHERS when in fact they were clearly also READERS of the literature, EDITORS, and/or university EDUCATORS.

The Survey Results presented represent our attempt to portray the current attitudes and actions connected with the broad topic of scientific publishing, as perceived by many different communities served by, or dependent upon, the publication process. In the following pages, the detailed analysis of responses from various types of respondent are displayed graphically with explanatory comments where appropriate. Some broad conclusions drawn from the Survey are then presented.

After studying these carefully compartmentalized findings, we observe that there is, in general, a remarkable degree of consensus among the opinions of the various communities, regarding the merits, problems and future of the current landscape of scientific publishing. This is clearly reinforced when reading the collection of free-form comments offered by Survey respondents. Common themes repeatedly arise. They reflect a general concern about several major aspects of the social and professional environment in which we work. These include:

- Widespread unhappiness with the linkage between personal or professional success and both the number of publications produced and the obligation to publish in journals with high impact factor.
- Concern about the proliferation of new narrowly focused journals designed for easy acceptance of low-quality manuscripts.
- An ongoing concern about the fairness and objectivity of the peer-review system.
- A concern about the wide range of fees charged for open access publication as well as about nonuniform subscription costs paid by various subscribers—ranging from university libraries to individual projects and funding agencies.

In order to find more of such issues that concern or please this community, we recommend reading the lists of verbatim informal comments provided in Appendix C.

METHODOLOGY

Structure: As briefly described in the introduction, ten separate roles connected to scientific publishing were defined in the Survey's structure and offered to respondents from which to choose. A complete enumeration of questions posed to each role can be found in Appendix B. All respondents were asked for their home region of the world, their chosen role and, at the Survey's end, their preferred remedial steps to help a publication in financial straits. Beyond those, questions were tailored for the role selected. Three notes about the roles structure are in order. The manager and corporate executive roles, although separate at the outset for the role question, then are directed to an identical set of questions. Also, whereas a single role for librarian is offered at the outset, the next question splits the role into librarian at a physical library and archivist at an online service, each seeing quite distinct sets of questions. Lastly, when those who chose the RESEARCHER/AUTHOR role reach their final role-specific question, they are offered the option to continue to the set of questions for the USER/READER role without having to leave and re-enter the Survey. 341 respondents chose this option (see below).

Announcement: First, member societies of IUMRS were asked to announce the Survey to their membership and to additional colleagues at the institutions in their region. Subsequently, an email announcement campaign was pursued by sending relatively few direct email entreaties to leaders at universities, corporate and government laboratories, societies and associations, publishers, libraries, and government agencies and ministries worldwide. Then, we added use of a web-hosted sales communications service for "mass" emailing to staff email lists available through each target organization's web site. This second approach was found necessary when it was observed that leaders at the addressed entities were not adequately moved to transmit our announcement to staff in sufficient numbers.

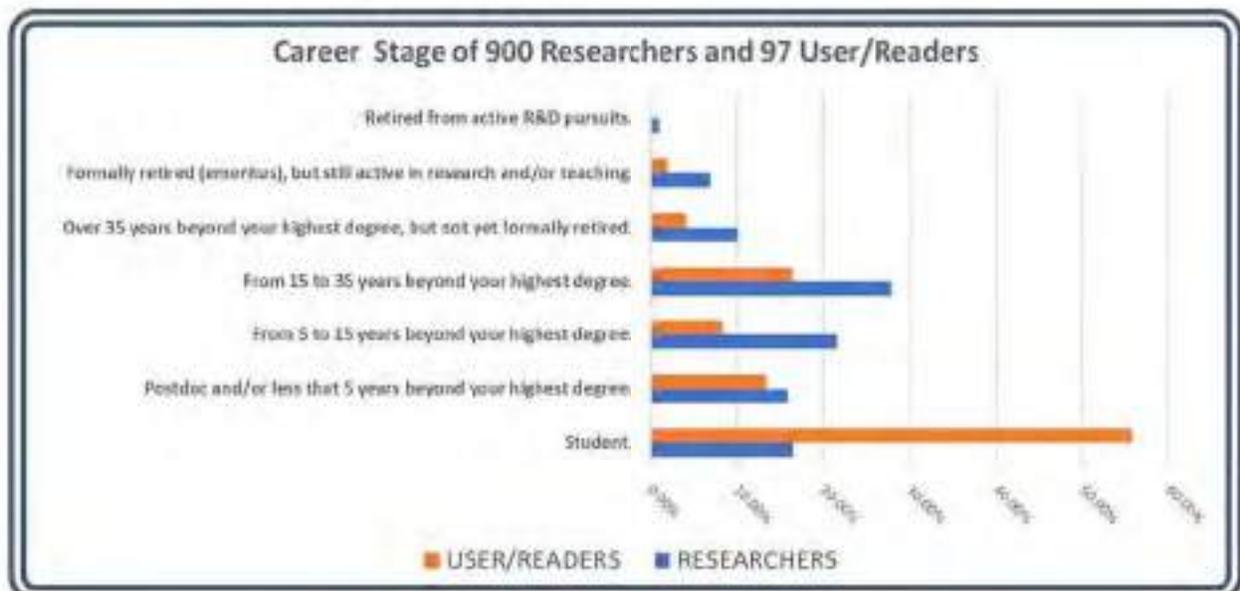
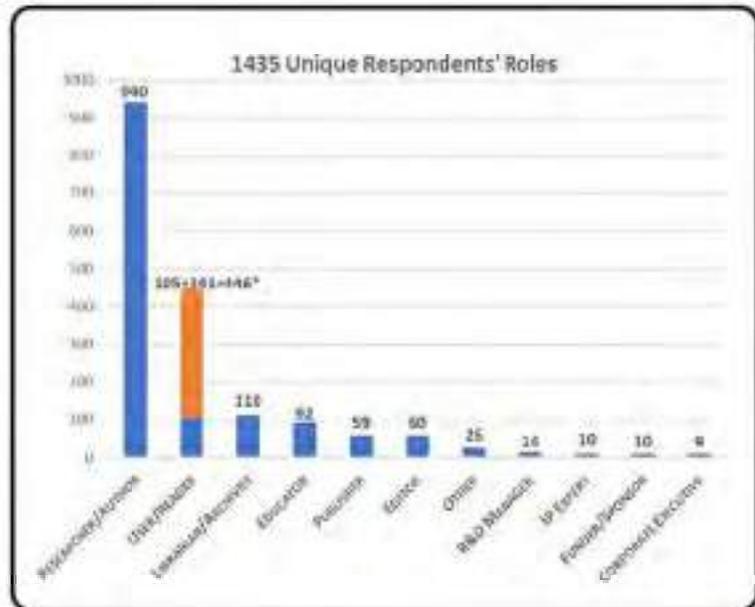
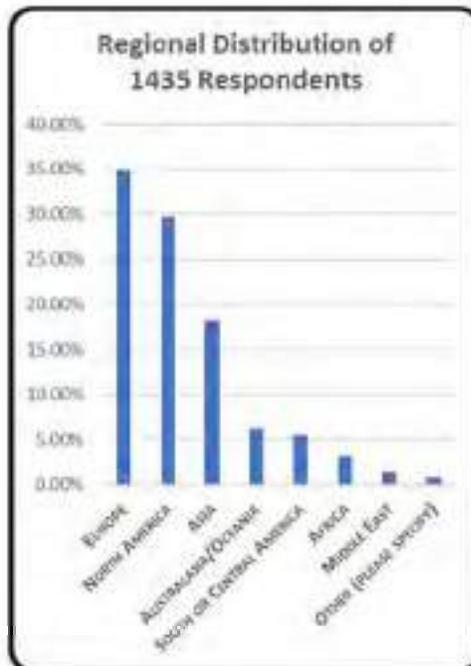
In addition, an announcement flyer was distributed for posting to many email recipients and the Survey was announced at the IUMRS web site's home page, the IUMRS Twitter account, and the web sites of other organizations, such as the European Science Foundation.

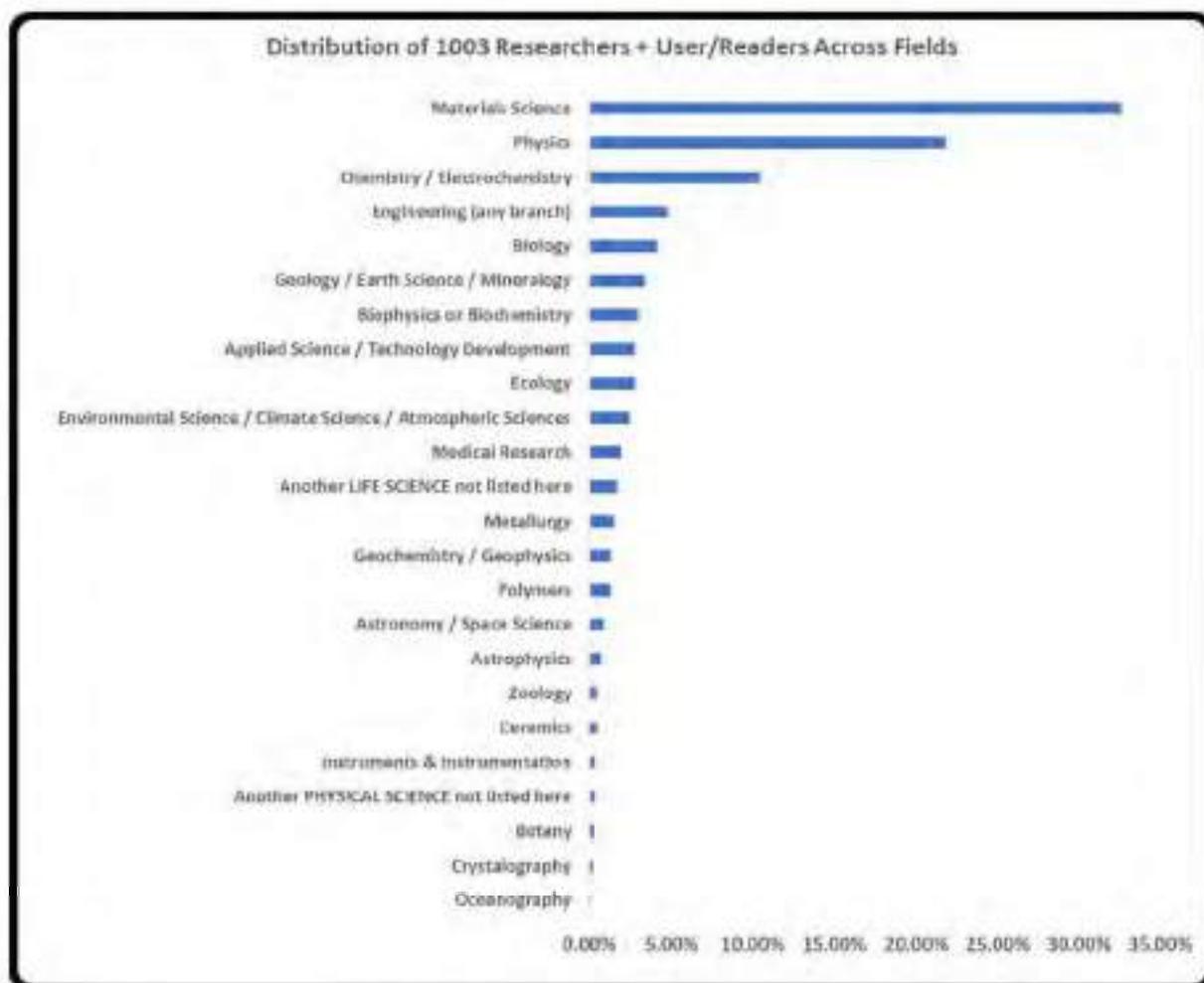
CAVEATS: The variability of leadership response to our requests and the fully justified protections, of uneven effectiveness, instituted by many organizations against mass emailing imposed substantial variability on our sampled population. The clearest bias this circumstance introduced favored responses from university personnel located in North America, Europe, and to a lesser extent Asia. Drastically reduced were responses from corporate and government personnel. Also, notwithstanding it being the accepted language of science, the Survey and its announcements being exclusively in English may have discouraged some respondents whose mother tongue is not English. Of course, adding to this Survey-specific variability, is the generic selection bias that affects all surveys – i.e., only those respond who (a) tend in general to respond to surveys of any kind and (b) find the topic of the Survey sufficiently aligned with their own interests. Speaking to the latter criterion, perhaps the greatest limitation to our Survey's sample is a recognition of personal relevance by recipients or lack thereof when encountering an announcement from the IUMRS and the materials-research-centric appearance that conveys. The preponderance of research fields of respondents revealed by question #3 (RESEARCHERS) and #22 (READERS/USERS) seems to confirm this bias where physics, chemistry and materials science are most favored.

Respondent demographics and behavior: From Survey inception to its close on 31 August 2019, 1435 unique visits to the Survey web site occurred. Those visitors are considered respondents because they began to answer Survey questions after presumably reading introductory text on the landing page. Visitors who browsed to the first page, but left without beginning the Survey, were not counted. If the 341 respondents who entered as RESEARCHER/AUTHORS and continued as READER/USERS are credited separately for each role, then the total number of respondents more accurately equals 1776. Some respondents skipped those questions for which a response was optional, and several failed to reach the final question and formally exit the site. We estimate the completion percentage at 77%, but those who did not reach the final question still supplied useful opinions and data within their respective roles. On reviewing

the points at which respondents prematurely left the Survey, it became apparent that our allocation of questions to successive web pages unfortunately caused some respondents erroneously to think that the last question on a page was the last question of the Survey.

The following summary data illustrate the demographics of 1435 unique respondents. The regional distribution is also evident from the geolocation map on page 5 above where each unique IP address of Survey visitors is plotted.





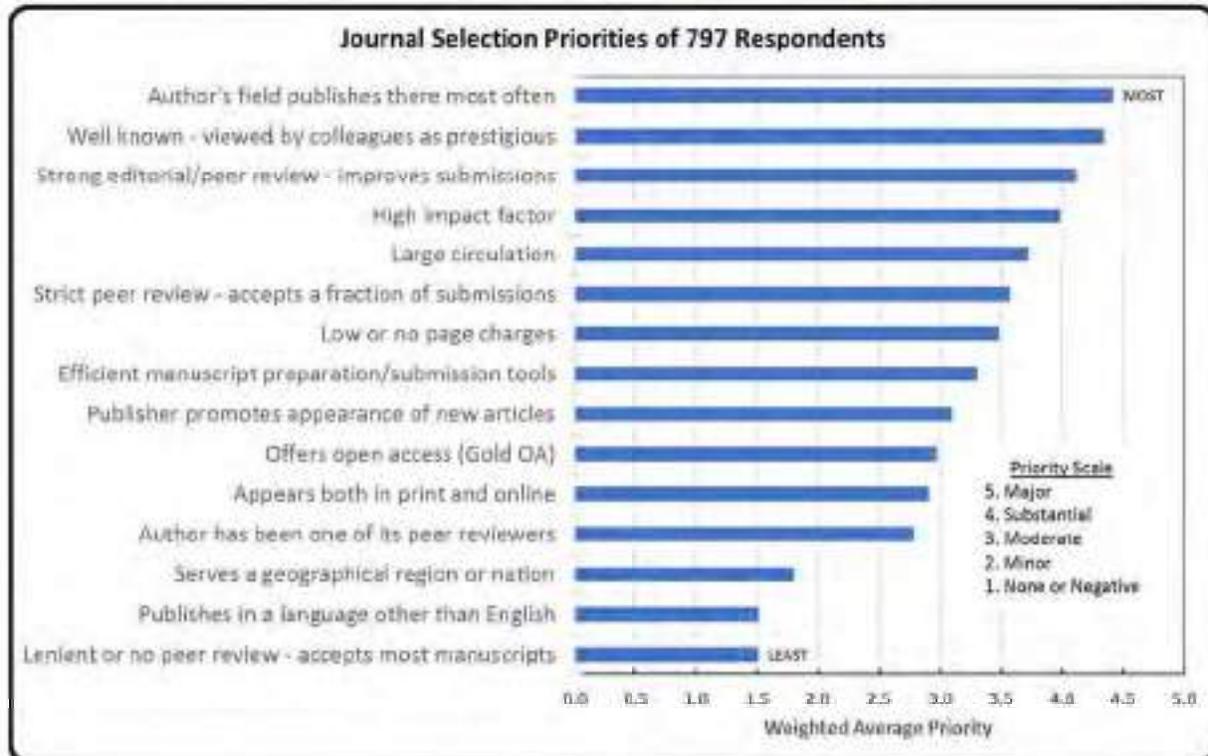
Analysis: It is clear from the demographics above that summary data will be dominated by RESEARCHER/AUTHORS and READER/USERS from Europe, North America and Asia who are in the fields of materials science, physics and chemistry. The number of respondents within that broad swath implies a margin of error⁵ of $\sim\pm 3.4\%$ for summary data relevant to the two most popular roles. The opportunity also exists to parse those responses according to field of study or geographical region while maintaining respectable statistical relevance. However, for several less popular roles, we must accept margins of error of $\sim\pm 10\%$ which borders on the anecdotal. The least populated roles cannot even reach that level and will be discarded, except for retention of narrative comments when judged by the editors to be particularly insightful. The following *Findings* sections present summary data and associated commentary organized according to respondent role. Where significant distinctions are observed based on a more refined categorization, such as by region or field of study, they are included.

⁵ The MOE is approximated here for a 99% confidence level and a simple $1/\sqrt{N}$ dependence on sample size.

FINDINGS

Researcher/Authors

Choosing a Journal

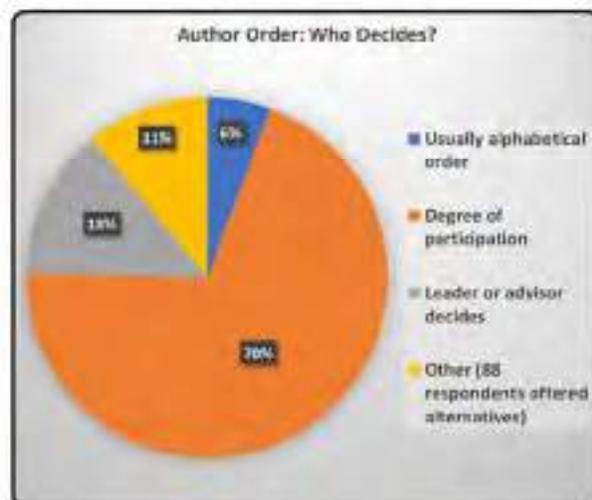
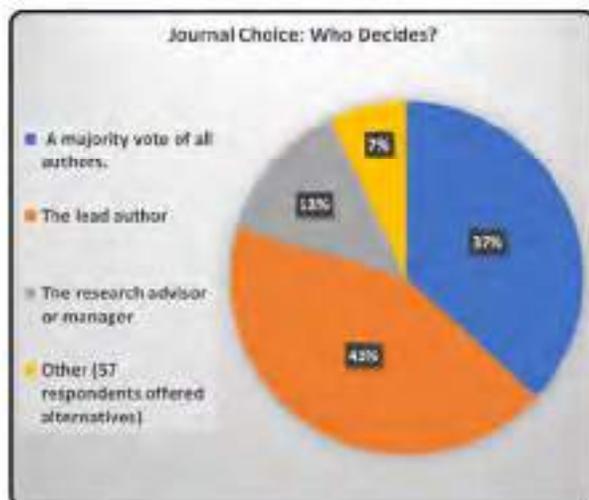


Predictably, author respondents strongly favor well known journals in their own field that apply strict standards. Cost and ease of submission are among other influential factors, but are not necessarily determinative.

Who Makes the Journal Choice?

Intra-author relationships may be bound by long-standing traditions, a hierarchical organizational structure, and often affect working protocols and the general atmosphere within which researchers work. We asked our 797 author respondents how their journal selections and bylines are decided.

What About Name-order in the Byline?

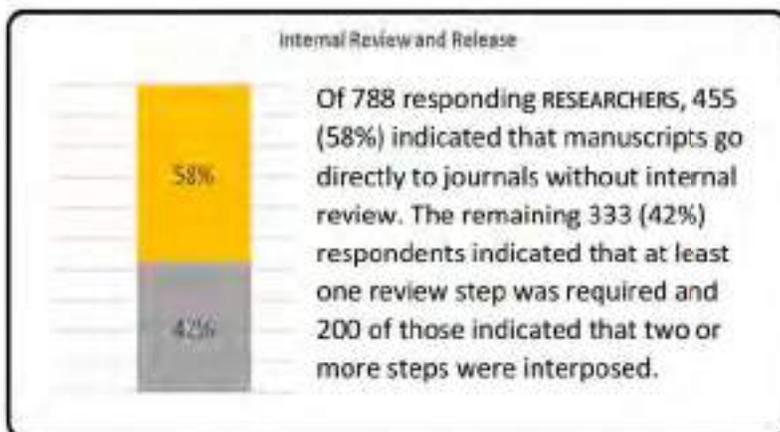


Analysis and Report of Responses

Interesting to see that whereas the author order is more often than not up to the researcher who has participated the most, that author may nearly as often defer to a more democratic path when it comes to journal choice.

Intervening Steps between Author and Journal

Somewhat relevant to what makes it into the open literature is the possibility of an intermediate vetting step interposed between author and journal. Our initial assumption was that when an article's content included proprietary or classified information, or when the host institution is corporate or governmental as opposed to academic, restrictions would apply. Our data says that among our respondents, less interdiction occurs than might have been expected.



REASONS FOR REVIEW/DELAY:

- Review for proprietary information
- Review for classified information
- Withhold until patent application is filed
- Subject to internal copy editing

It must be pointed out that bias in our sample likely affects, perhaps strongly, this result. Access to and responsiveness of corporate and government organizations being less successful than for academic institutions, those entities where proprietary or classified content is likely are underrepresented.

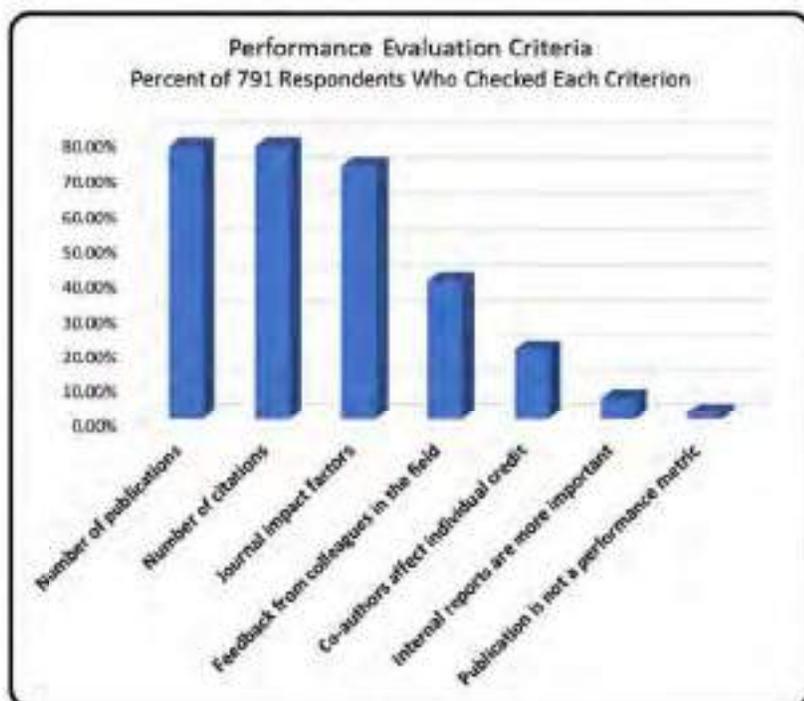
Career Impact

Beyond informing the scientific community of one's research results, there is a collateral motivation to publish.

Most of 791 respondents indicated that more than one criterion is applied at their institution when their performance as a productive researcher is evaluated.

These data confirm the continuing relevance of the clichéd "publish or perish" admonition.

Even though this Survey is anonymous, we refrained from asking about such questionable behaviors as unnecessary serial publication, assuming that forthright responses would not be forthcoming.

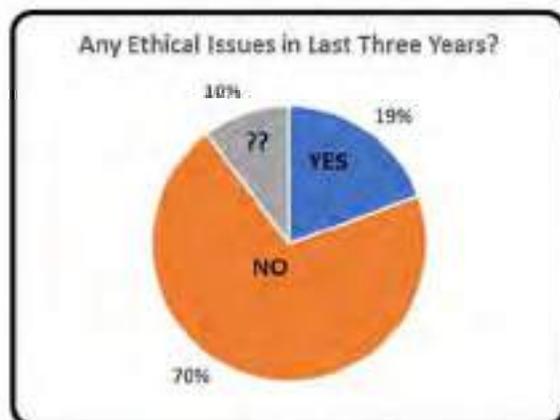


Preprints



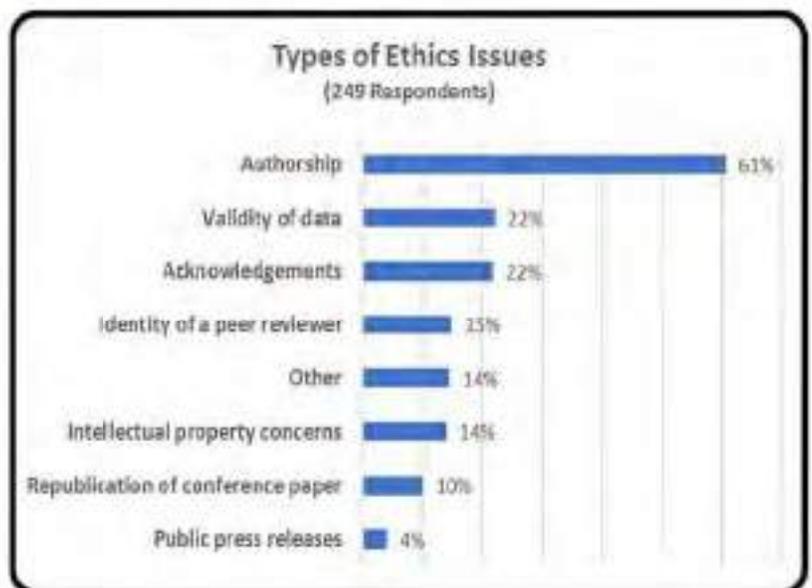
Distribution of preprints had been a common practice for many years, whether as near-final or final versions of a manuscript or as quite preliminary versions – but in all cases, versions that had not yet undergone an external peer review. Today, according to our Survey, distribution is rare for slightly over half of our respondents. The majority of those who do distribute them wait until the manuscript has been submitted to a publisher. Then, for those who do distribute them, there is apparently a rather evenly divided philosophy concern to whom they should be sent. One group limits them to researchers in their own field, whereas the other group prefers wide distribution, taking advantage of today’s online resources such as arXiv, Google Scholar, etc.

Ethics



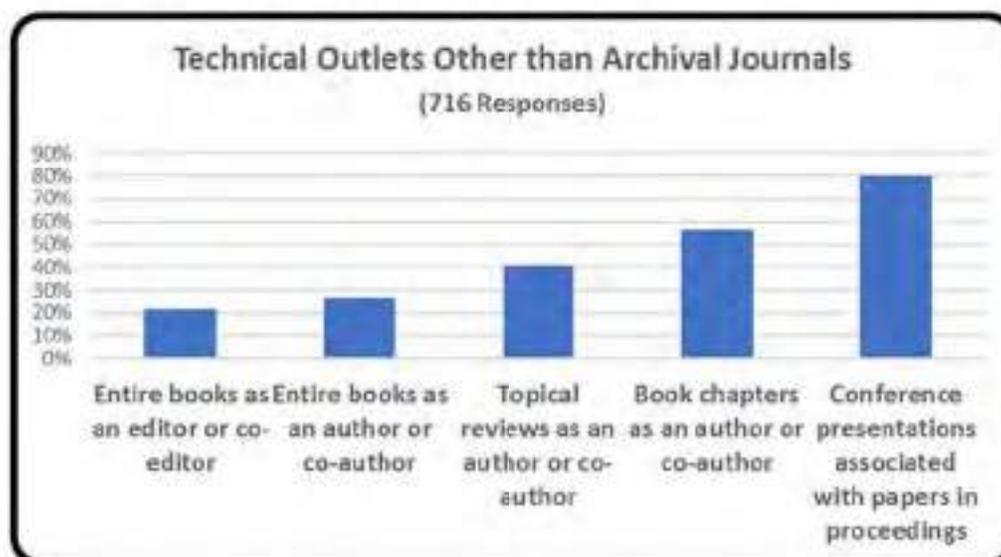
It is reassuring to know that about 70% of 783 respondents have not encountered ethical issues with respect to their publications. Another 10% are unsure – not a large fraction, but it may indicate that education as to what constitutes an ethical issue is not universal. Survey questions did not distinguish between internal matters such as authorship claims and more serious externally relevant ones such as data fabrication.

The number of responses to the right (249) exceeds the 19% who said yes above (152). Some who were unsure have apparently nevertheless added their observations to the list of possible transgressions. Just under two-thirds of replies refer to authorship issues. Beyond the order of author names in a byline as discussed above, whether an individual should or should not be considered an author can become a contentious matter. Plagiarism and violations of nondisclosure agreements were among the “other” 14% of replies.

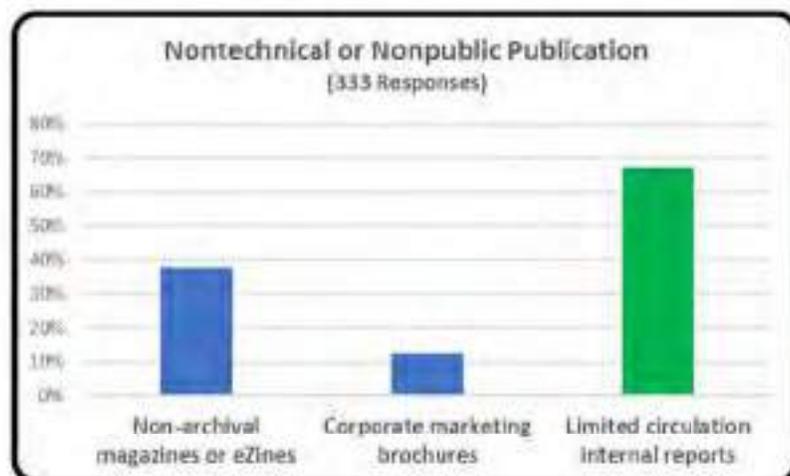


Other Media – Beyond Archival Journals

The typical researcher, especially a more senior one, often contributes through outlets other than the many archival journals available in his or her particular field. Below are data reflecting how frequent is contribution to some alternative channels. These are components of the technical literature, normally not accessible to the broader public.

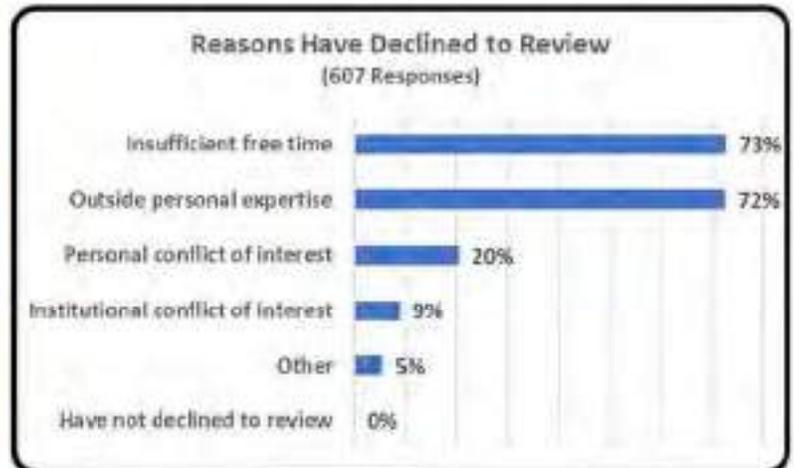


Whereas open access to published reports and underlying data remain relatively inaccessible to the general nontechnical public, semi-technical and nontechnical outlets do reach that population. Scientists are often encouraged to contribute there in order to raise public awareness and one hopes, favorable impressions concerning the R&D their tax dollars support.

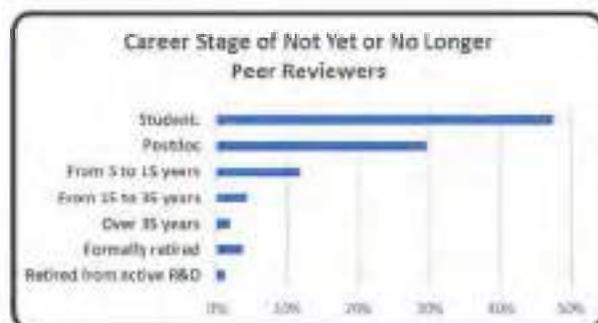


Fewer than half of RESEARCHER respondents indicated any nontechnical publication, and those who did emphasized reports internal to their own organization. Given that in our sample, corporate and government laboratories are underrepresented, the dominance of that channel is likely understated. Concomitantly, at least within a $\pm 6\%$ margin of error, we see less than 40% of our sample contributes to the more publicly accessible domain.

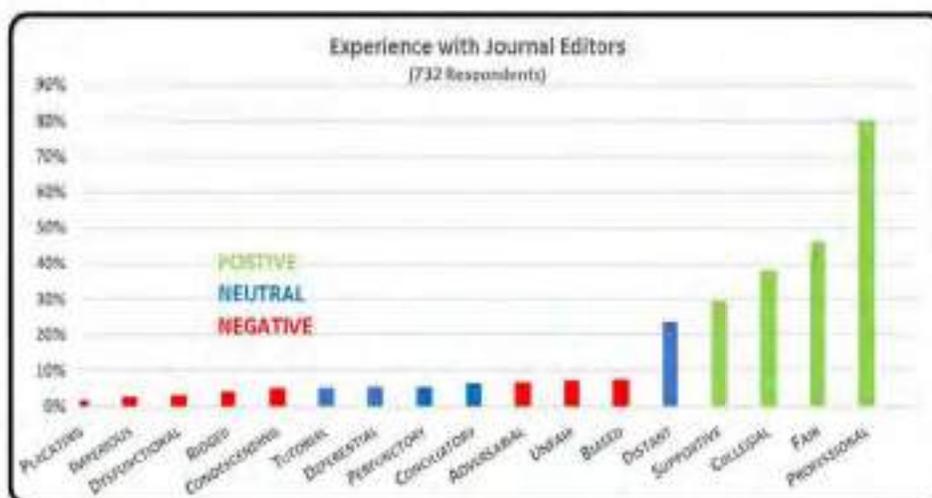
Peer Review Duties



Of 775 replies, nearly 80% indicate that they have performed one or more peer reviews for either a journal or a funding agency within the past five years (above left). This shows a welcome contribution of personal expertise to the publishing enterprise, providing intermediation that maintains the quality of the open literature. Comparing the career stage of those who answered yes to those who answered no (see below), we see that mid-career reviewers dominate while students and postdocs have for the most part not yet been invited as reviewers. It is also reassuring that review requests are often declined for good reason (above right), another factor that contributes to the integrity of the process.



Editors



Journal editors are the interface between author and publisher. They ensure submissions fall within the intended topical scope of their journal, manage the manuscript review process, mediate any and all debates between principals, and make final acceptance/rejection decisions. Below is a summary of how 732 of our respondents “feel” about their relationship with editors with whom they have interacted.

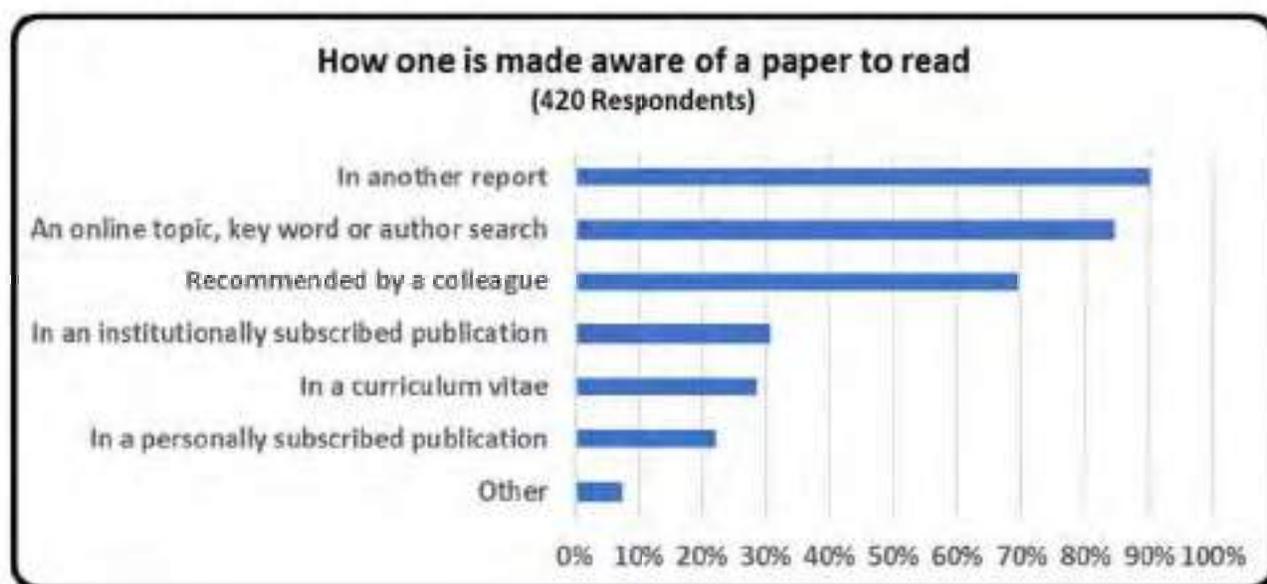
The preponderance of feelings is positive. Examination of how this may vary with career stage (not shown), indicated that the early career researchers have slightly more negative experiences.

Readers of the Literature

Of course, researchers are readers of the literature too. One set of Survey questions was devoted to accessing the literature. Those who entered the Survey as RESEARCHERS were offered the option to continue answering questions as READERS. 45% or 341 RESEARCHERS took advantage of that opportunity, bringing the total number of READER respondents to about 440. The three-quarters of the self-identified fields of READER respondents were physics, chemistry, or materials science. Over half of those who initially self-identified as READERS were students. Thus at ~20%, students are somewhat overrepresented in the READER sample compared to ~16% among the RESEARCHERS.

Identifying papers to read:

The first question to ask is “How does one find and decide to read a paper?” The data clearly reveal that paid subscriptions play a lesser role than online searches, recommendations of colleagues, and the knock-on effect of citations in reports already being read.



Where do libraries fit into this picture?

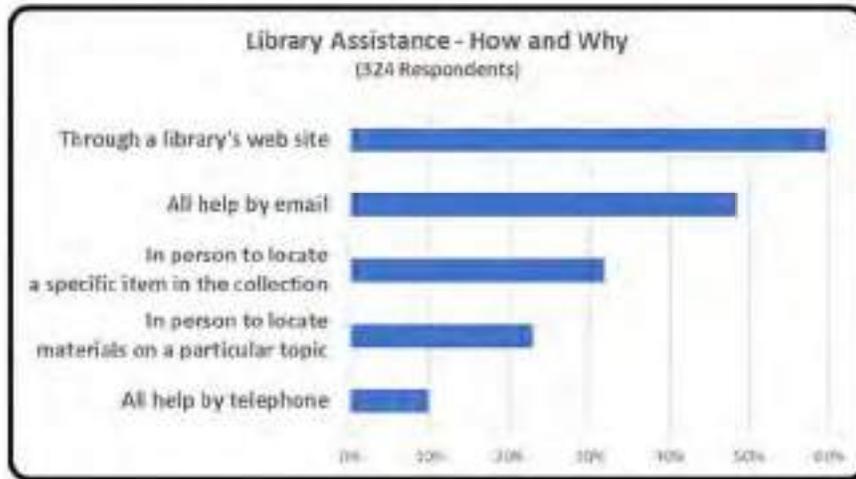


Do you routinely visit a library to browse recent publications with no specific report in mind?

(417 Responses)

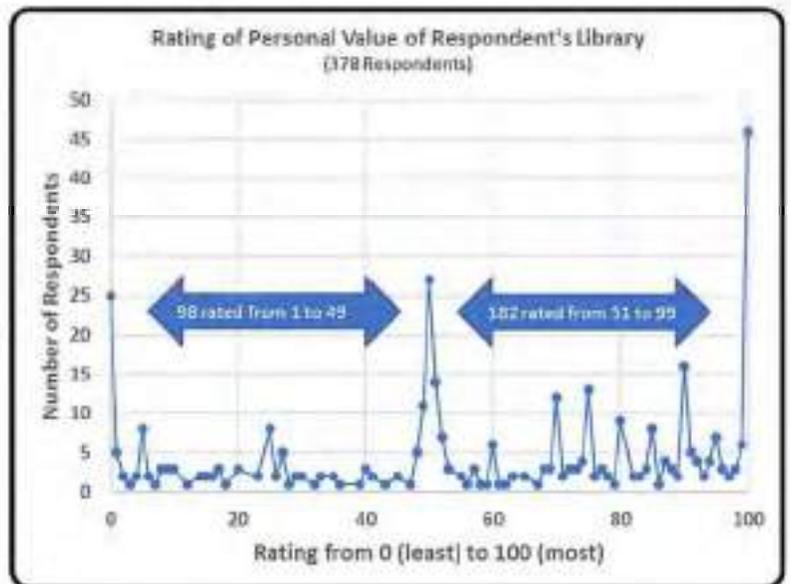


Very few (~110) Survey respondents self-identified as LIBRARIANS. We describe their data in a later section. However, our READER respondents provided some insight into the status and one might say plight of our libraries today. One sees here that physical libraries are significantly underutilized when it comes to in-person visits for both specific needs and for general enlightenment.

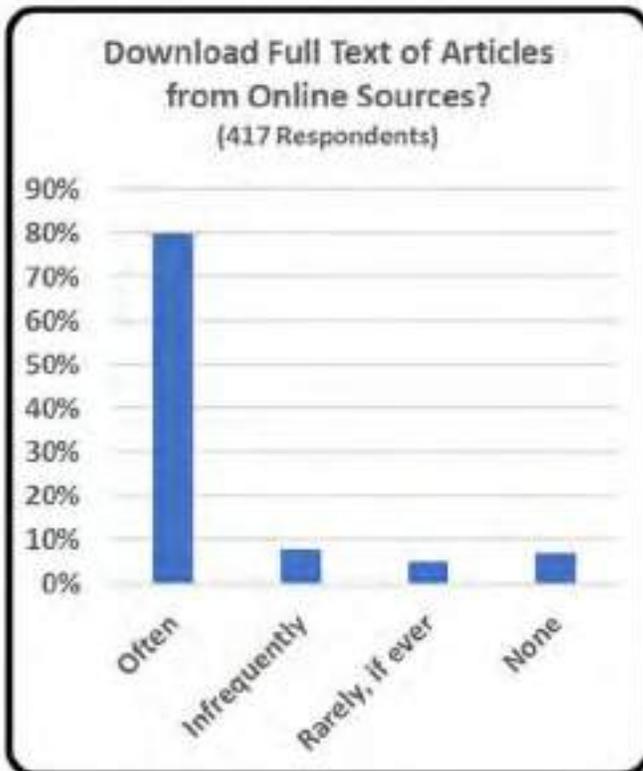


However, the expertise and the collections of the libraries do not go unused. On the contrary, more than supplementing in-person visits, they are now largely supplanted by remote communication, in particular by email and web-site tools.

Despite the transition to more remote access algorithms, libraries are still highly regarded by their customers. Not only do twice as many Survey respondents rate their library at 100 as opposed to zero, but that factor of two also applies to other ratings between the midpoint and the maximum as against those between the midpoint and the minimum.

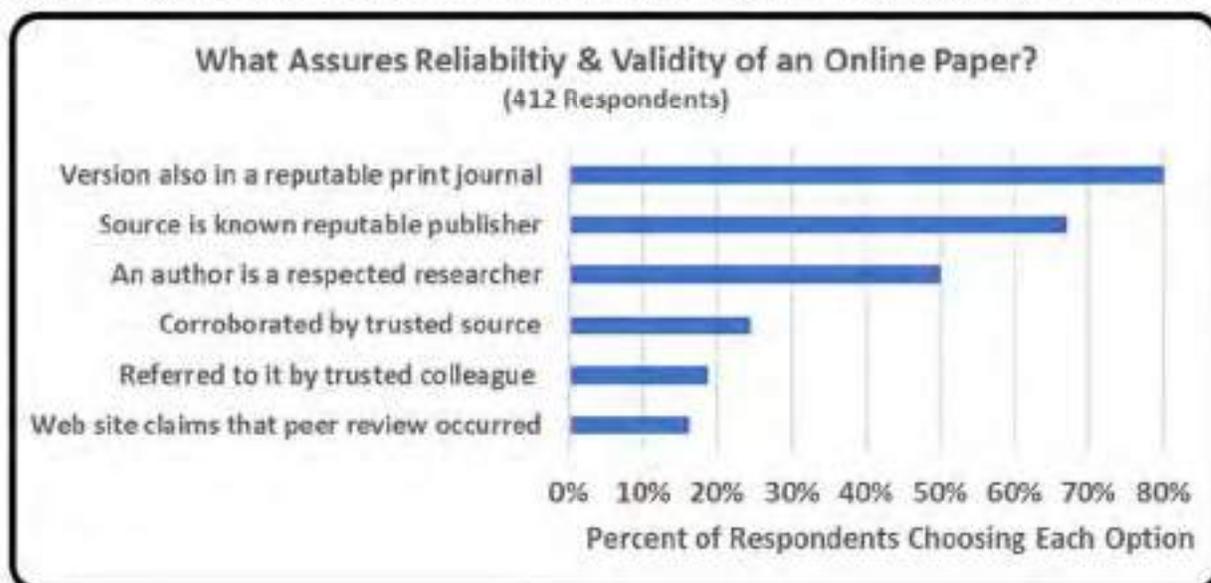


Strongly confirming the trend to digital alternatives are the 80% of respondents who tell us that they often obtain published articles by downloading from the several online services where publications are archived. An advance editorial prejudice moved us to check the career-stage demographics of those who do or do not tend to download papers. Fully expecting to see a trend of greater use of electronic means toward younger respondents, we found no such correlation. The career-stage profile was found to be independent of electronic medium proclivities in this case.



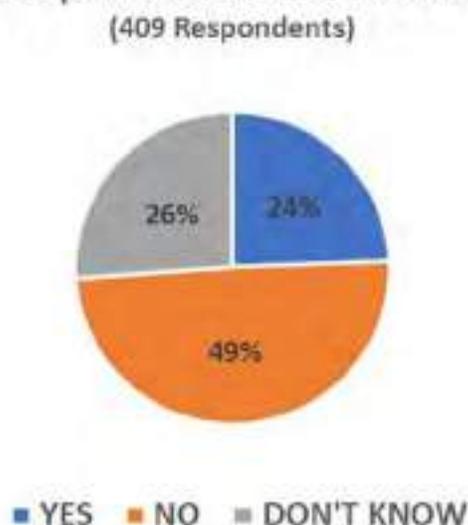
Can the literature be trusted?

Beyond egregious ethical issues such as data fabrication and plagiarism which are thankfully relatively rare, there are less serious but still crucial matters of completeness and accuracy of a publication's quoted data, the methods of data acquisition, an author's interpretation of results, suitability of assumptions and approximations, validity of conclusions and speculations, and finally, the completeness of citations to relevant work of others. Past standard practice has relied on peer review by experts in the field of the publication to ensure integrity of the process.



From the above data, we see that journal, publisher and author reputations remain the most cited sources of confidence in a publication's validity. The notion has been put forward that articles might be published first and only then be subjected to peer review, not by a few select experts but by readers at large. Below we see that only one-quarter of our respondents favor that approach.

Post-publication Peer Review? (409 Respondents)

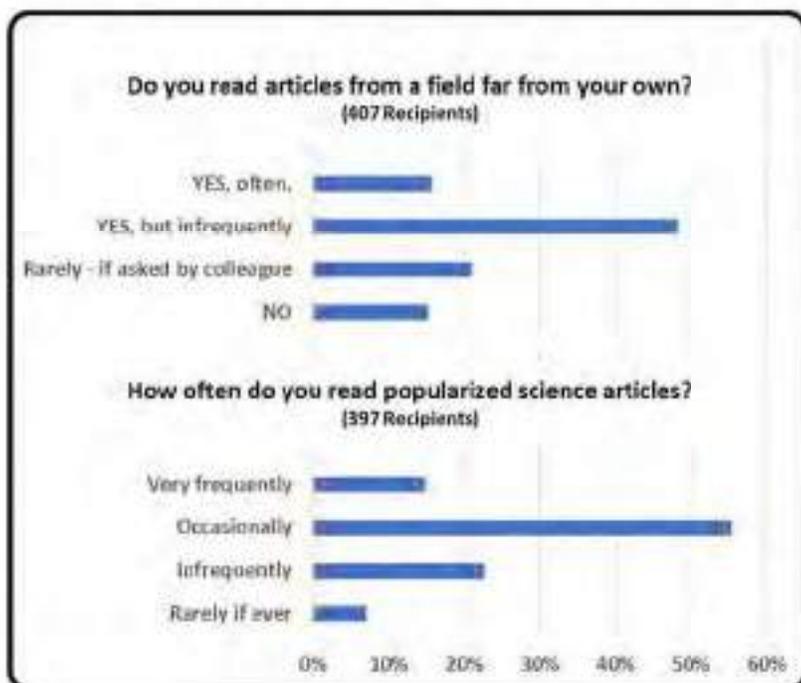


Data Access

With access to the underlying data (whether experimental or simulated) expert readers have an additional avenue toward added confidence in a paper's methods and conclusions. Also, researchers can more easily pursue independent duplication of results when called for. Of 410 respondents, about 45% tell us that they have accessed raw data archived separately from the corresponding research report.

Analysis and Report of Responses

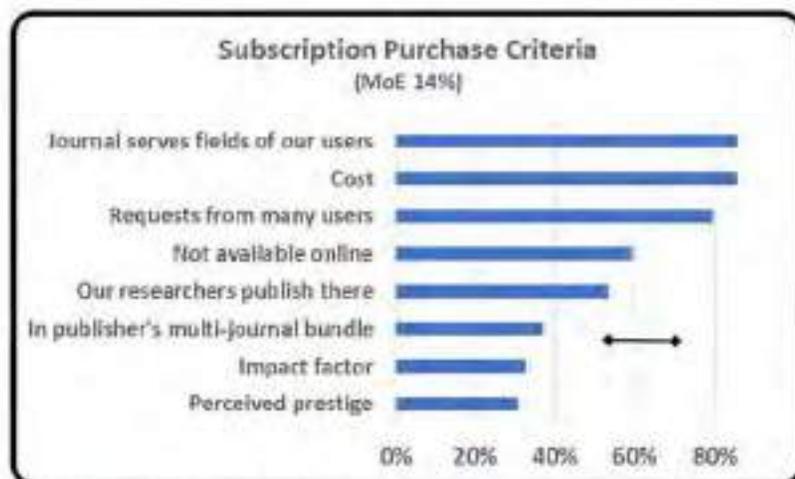
Above we asked READERS if they visited libraries just to browse. We also asked RESEARCHERS if they contributed to nontechnical outlets. Here we return to our interest in the extent to which our respondents go on excursions out of their comfort zones to fields far from their own or away from the purely technical literature itself.



We note the interesting similarity of the bar patterns in the two graphs at the left. Apparently, our READERS have the same percentage propensities to stray far from their fields within the scientific literature as they do to visit the lay public's magazines and other similar media.

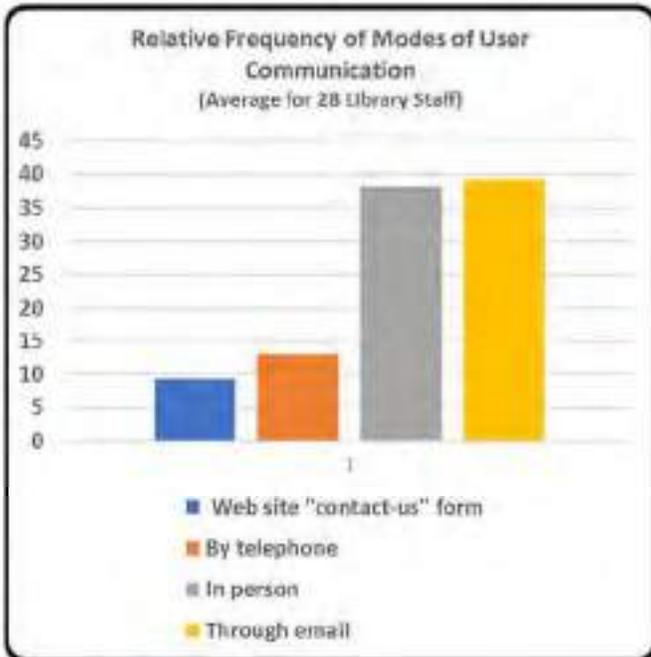
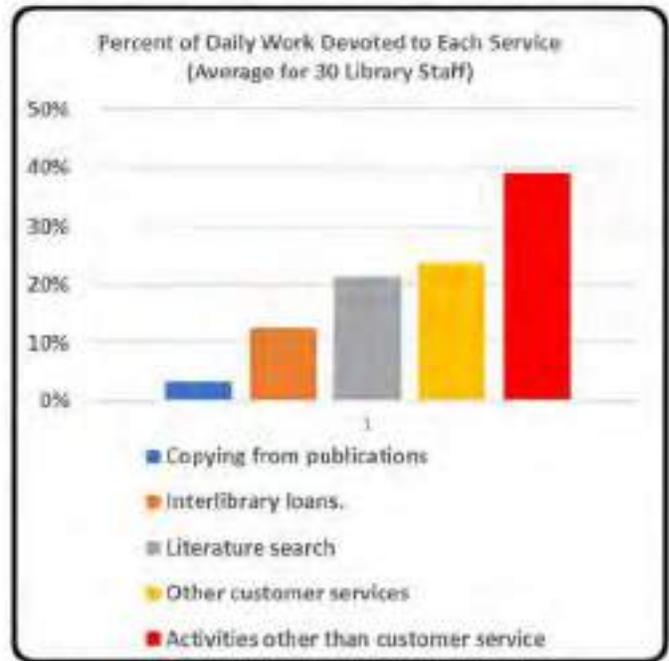
At the Library

Of the 73 unique LIBRARIAN respondents, 66 work at university libraries. All 73 subscribe to online resources through which their users can search for publications. As many as 76% of their libraries offer microfiche records, but half of those limit them to newspapers, magazines, and the like. While 46% offer scientific publications on CD/DVD, only 10% will provide translation services to their users. Additionally, the 49 LIBRARIANS who choose to respond further, indicated that all had catalogues accessible at their web sites, 88% had physical reference sections for encyclopedia and book series, and 65% offered a pre-binding new journal-issue section. Within the university environment, it appears that, within our $\pm 13\%$ margin of error, we can say that libraries continue to offer reasonably robust services.



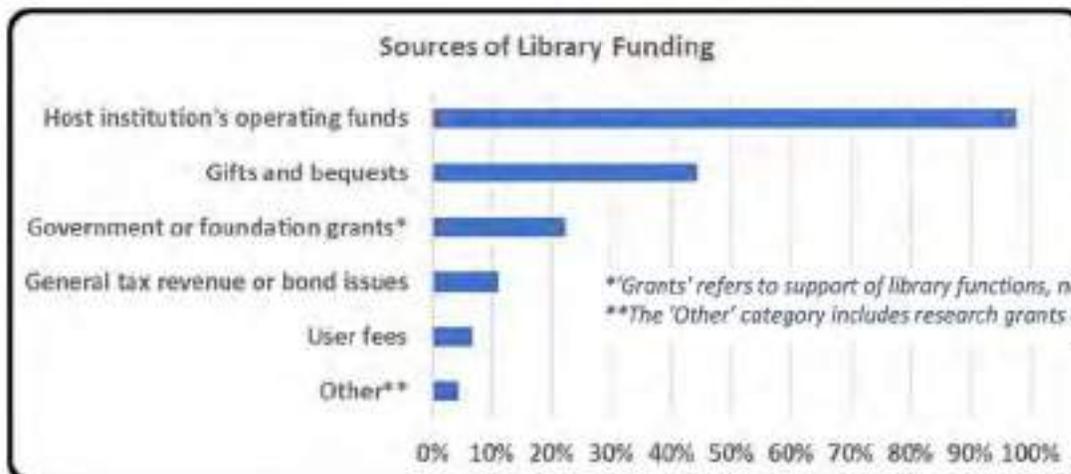
Library budgets are increasingly tight. Difficult decisions on purchase and retention of journal subscriptions (and book purchases) frequently must be made. Our respondents have indicated their priorities for such decisions. Overlap of content with library users' fields and cost are of greatest sway followed closely by explicit requests from the institution's users.

In order to obtain a more detailed internal view of typical library operations today, we asked respondents to estimate the time spent performing a few service activities relevant to user experience. The data from our respondents indicate that about 60% of the daily work load is devoted to direct customer service. The inquiry was not sufficiently granular to capture the full spectrum of services provided. Note the ~23.7% that was not adequately characterized.

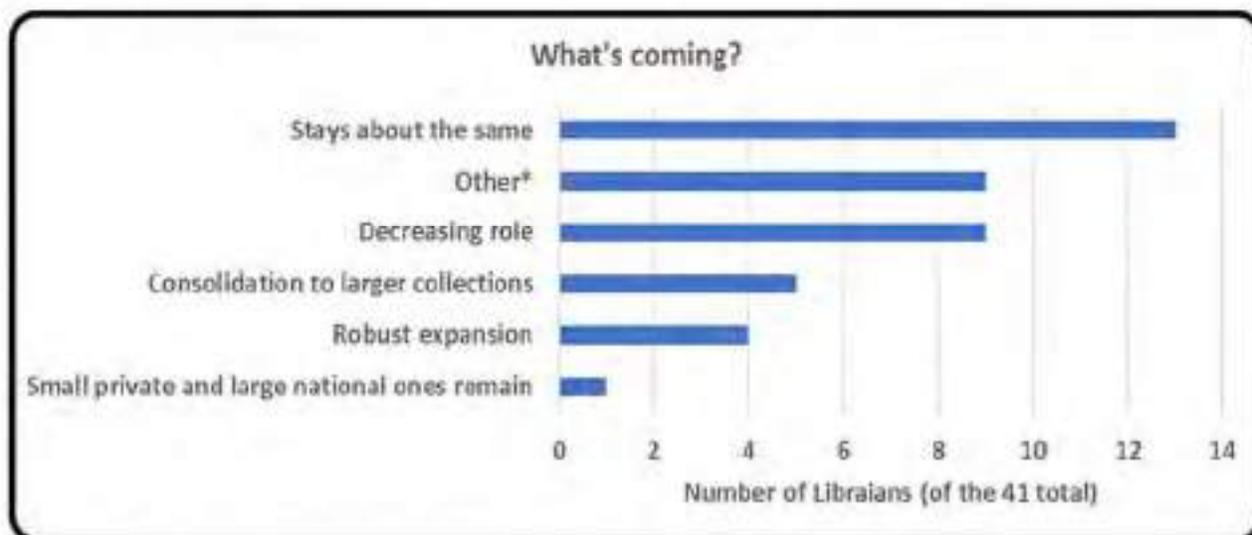


We also inquired about the favored modes of user communication with library staff. The data tell us that email and in-person visits dominate from the perspective of the staff. The question remains open as to why frequent in-person visits are experienced by staff while reader respondents have indicated a quite low rate of in-person visits. One hypothesis may be that in-person visits take more staff time and the interactions are more memorable, whereas most staff do not field inquiries via the web site or telephone.

Given the financial stress that seems to be endemic to libraries in general, the Survey asked 45 LIBRARIAN respondents to identify their revenue sources categorically. Note that the percentages below refer to the number of libraries indicating that they receive such support, not to the amount of funding received or the fraction of budgets that the monies represent.



The Survey asked 41 LIBRARIAN respondents the following vision question: "In the context of the rapid evolution of digital technologies, electronic media, and the Internet, what future for the physical library, as a repository for the scientific literature, do you envision?"



Three comments left for us under the 'other' option deserve to be repeated here [with minor edits for clarity]. They summarize a quite positive view of the future, if not for the physical collection, at least for the physical space and the interactions with a community of students and researchers.

Learning environments will offer students and faculty [space] to experiment, develop, practice, with guidance available to become self-directed and independent.

The physical collection might shrink, but the location is more than just the physical collection. The need for the library as a place will remain about the same, but the way the space is utilized will change.

Libraries haven't been 'repositories' for years. We are gateways. Librarians are not gatekeepers; we are guides. It will be a few generations before physical material completely go away, even then, libraries will still be needed to curate and provide access to online content. It is way too expensive for a researcher to purchase everything they need.

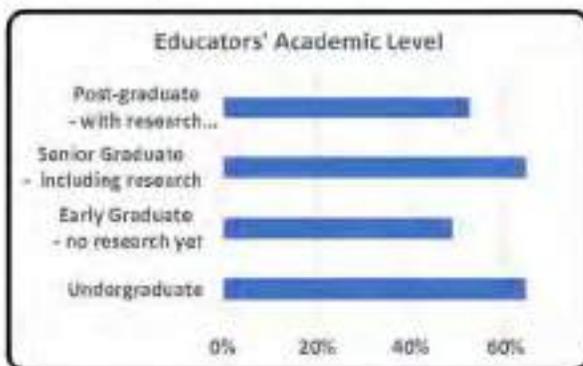
Archives Online

Too few (20) respondents identified themselves as ARCHIVISTS to justify a full exposition augmented with graphics. However, as anecdotes from experts rather than statistically validated reflections from a large group, many observations deserve to be mentioned here. Several visitors were affiliated with academic databases and search engines for published papers from multiple sources – others with open access repositories that accept original articles for online publication. Still others represented an archive for a single journal, an open access service for both published and unpublished reports, and a service that facilitates access to several databases, none of which are their own. Most provide open access to their own content or to other open access sites and found that open access is not problematic for them. For the most part, these services' operations are financially supported by larger parent firms in which they are embedded.

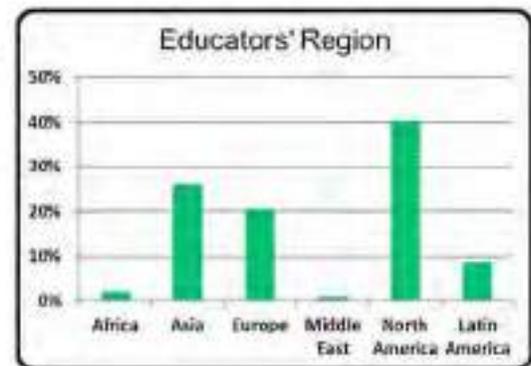
We encountered an interesting spectrum of concern about the validity of content. On the one hand, most respondents said that they only provide access to publications that have been peer reviewed at their source. Several others said that they inform the user whether or not each item has been validated in some way. On the other hand, some said they only make a “best effort,” or that it’s a “buyer beware” situation, or perhaps worst, that users must agree to a disclaimer that holds them harmless.

All archive represented permit free abstract downloads and most permit free full text downloads. Two thirds of the archives, however, do not provide a way for users to extract an excerpt from a longer document. Half of them do provide data curation applied to their content, while the other half rely on the curation done by sources to which they refer their users. Also, roughly half *yes* and half *no* were the responses concerning archiving data that underly the publications they maintain.

Educators



Our 84 EDUCATOR respondents worked at several academic levels, most at more than one, and worked in three principal geographical regions.



When asked if the majority of students arrive with writing and speaking skills consistent with their academic level, 57% said *yes*, and the remainder said *no*. The natural follow-on question as to whether remedial instruction is offered to those whose skills are initially deficient was answered *yes* by 67% of respondents. At a roughly similar level, 65% reveal that their institution does offer one or more courses that include explicit training in communication of technical information, e.g., as part of a professional development curriculum. This level rises to 90% with regard to providing editorial guidance and oversight to students and early-career colleagues who are writing their own reports or preparing presentation materials. Asked in a somewhat narrower sense about their own publications' junior co-authors, 96% said that they use that opportunity to coach in report preparation.

To the more general question about which learning paths are effective for developing communication skills in scientific fields, each of the 78 respondents selected (on average) no less than three of the options presented.

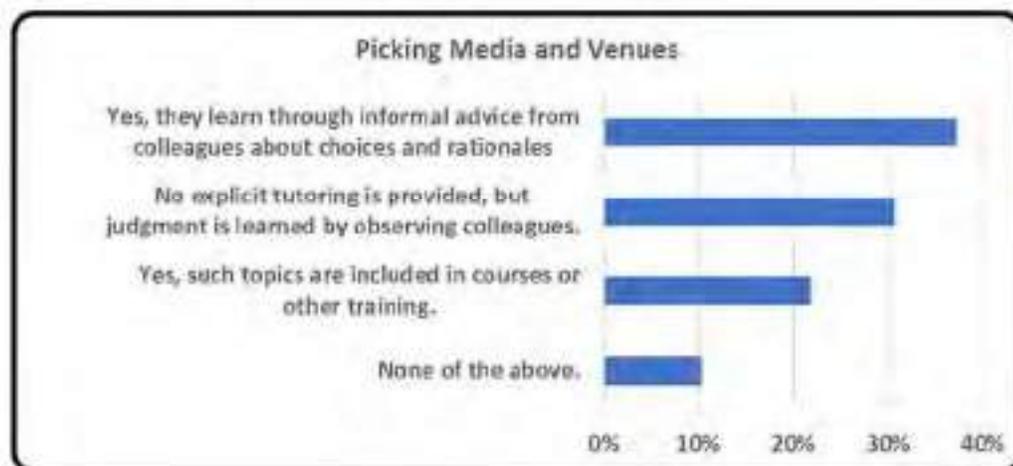
<i>Basic language courses in the lower grades</i>	54%
<i>Advanced courses in language and literature outside of the technical curriculum</i>	46%
<i>Courses devoted to general communication skills and techniques</i>	55%
<i>Formal training focused specifically on writing and presentation skills for scientific publishing and conference presentations</i>	65%
<i>On-the-job trial-and-error experience without formal training</i>	37%
<i>Observing and emulating more experienced senior colleagues</i>	49%

Analysis and Report of Responses

English has been the dominant language of science. For a great many researchers whose native language is not English, this presents an additional hurdle in writing and reading technical papers and understanding and delivering talks at conferences. Several situations are prevalent, as our respondents shown below.

<i>In an English-speaking region.</i>	<i>No special accommodation is provided for students or junior researchers whose native language is other than English.</i>	19%
	<i>To the extent that students or junior researchers whose native language is other than English arrive without adequate fluency in English, language proficiency support is made available.</i>	32%
<i>In a non-English-speaking region.</i>	<i>Students and junior researchers who have been studying science tend to arrive with some proficiency in English. Formal instruction in most science courses is given in English.</i>	21%
	<i>Students and junior researchers tend to arrive without proficiency in English. English language courses are offered and formal instruction in some but not all science courses is given in English.</i>	13%
	<i>All science instruction is in our local language. Students and junior researchers may add English language tutoring or full courses to their curriculum, if they so choose.</i>	14%
	<i>Other[§]</i>	1%

§ One EDUCATOR offered the following comment: *Ours is a multi-lingual society, but the language of instruction is English. Students are often able to communicate verbally with ease, but their knowledge of formal language structures is often minimal, and they struggle to write grammatically acceptable formal English. Hardly any of them reads for pleasure in any language - and social media mean that they read even less, except for papers needed for their studies.*



Beyond language itself, and beyond formal training, it appears from data at the left that an apprentice-style relationship is what often tutors junior authors on how to pick a journal or a conference.

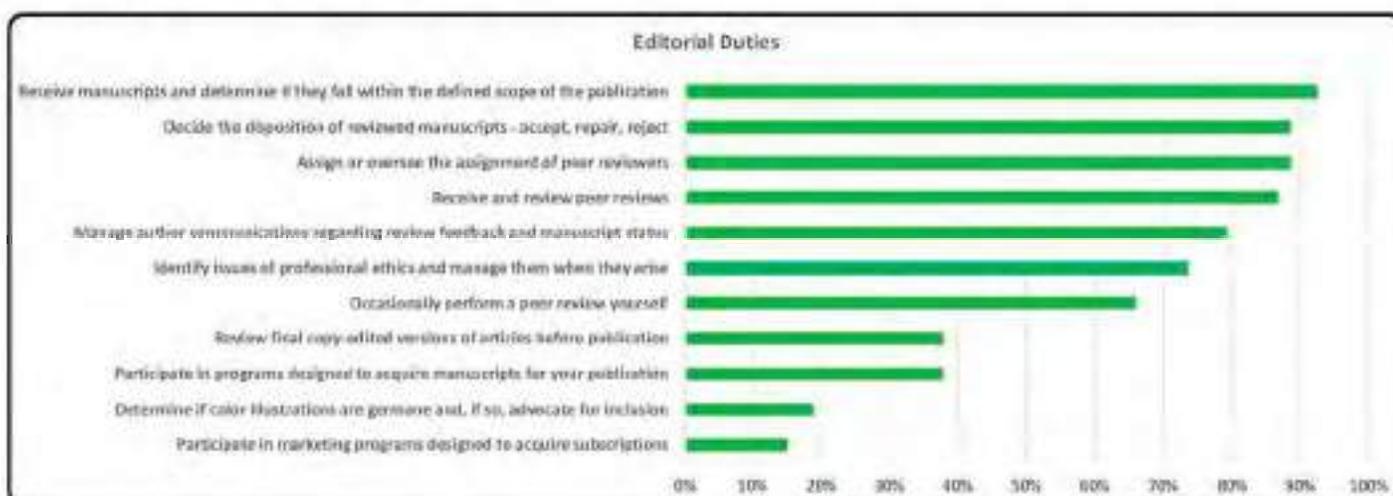
Editors

Our 55 EDITOR respondents are primarily either practicing researchers or educators who have been appointed as editor of a journal by its publisher (60%) or in-house employees of a publisher that produces both print and online journals and/or books (27%).

We have a distribution of publisher types represented by these EDITORS.

A commercial publisher.	33%
A professional or learned society or academy with individual members.	30%
A not-for-profit institute, union, or consortium of professional or learned societies.	24%
A university press.	11%

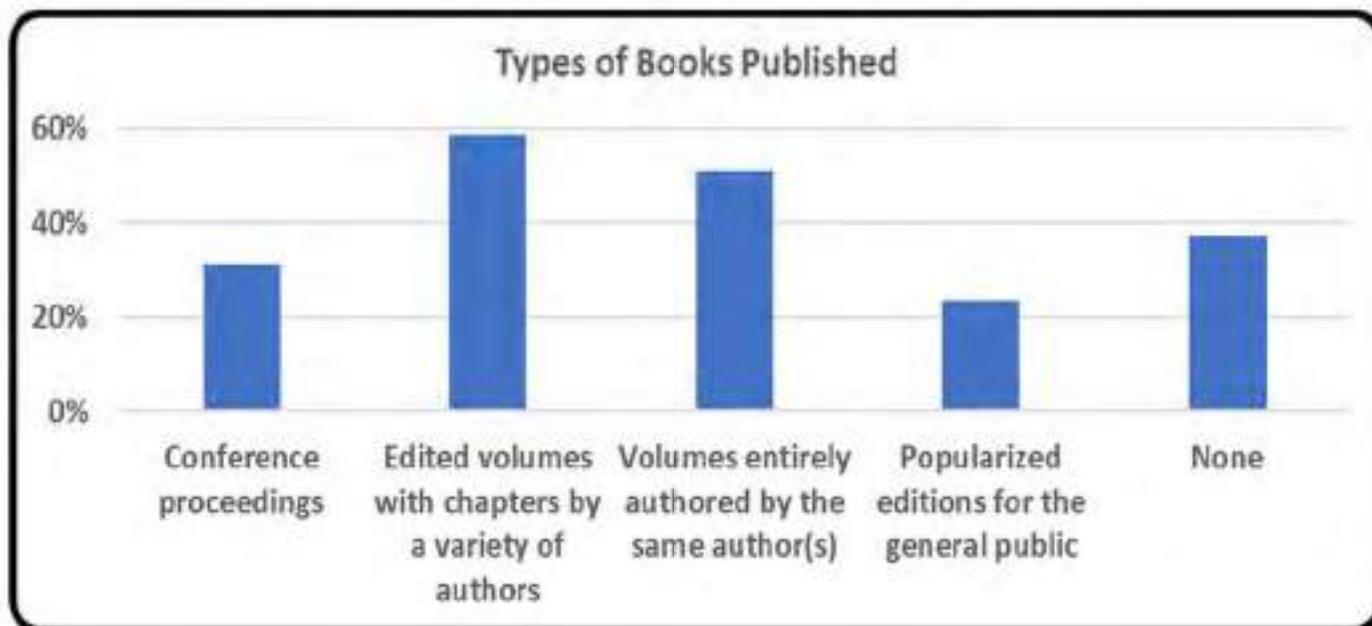
The tasks performed by editors are myriad. The typical editor in our sample checked, on average, between 6 and 7 of the chores listed. No doubt some checked them all.



When asked if they believed that broad distribution of preprints prior to peer review and publication is a net positive or negative, half of our EDITOR sample said positive and half said negative. With regard to whether conference proceedings should be subject to the same peer review standards as archival journals are, 62% said *yes* and 38% said *no*. An overwhelming majority (84%) do not permit serial publication of results that could easily be covered in one article. A similar number (85%) ensure that adequate keywords accompany a manuscript in order to guarantee success of future topical searches. Finally, inclusion of advertising in their publications as a way to defray publication costs was only the case for 29% of respondents. A result consistent with a view that scholarly publications ought to avoid commercial content.

Publishers

PUBLISHER respondents (54) primarily come from commercial houses (15%), professional societies (50%), university presses (19%) and other nonprofits (11%). 80% publish archival journals for scientific research reports.



Most of the houses represented in our PUBLISHER sample also publish the usual types of books comprising scientific and academic research reports. Of 53 respondents, 40 publish journals and/or books both electronically and in print, one dozen publish only electronically, and only one publishes only in print.

Manuscript preparation tools such LaTeX plus format and style guidelines	48%
An option for camera ready manuscripts	30%
An option for color illustrations	73%
Electronic manuscript submission	80%
Extramural or in-house scientific editing	63%
In-house copy editing	73%
Page proofs with markup instructions	78%
A repository for experimental data cited in an article	30%
On-site manuscript submission services at conferences for proceedings	5%
Royalties to authors and/or editors of books	40%

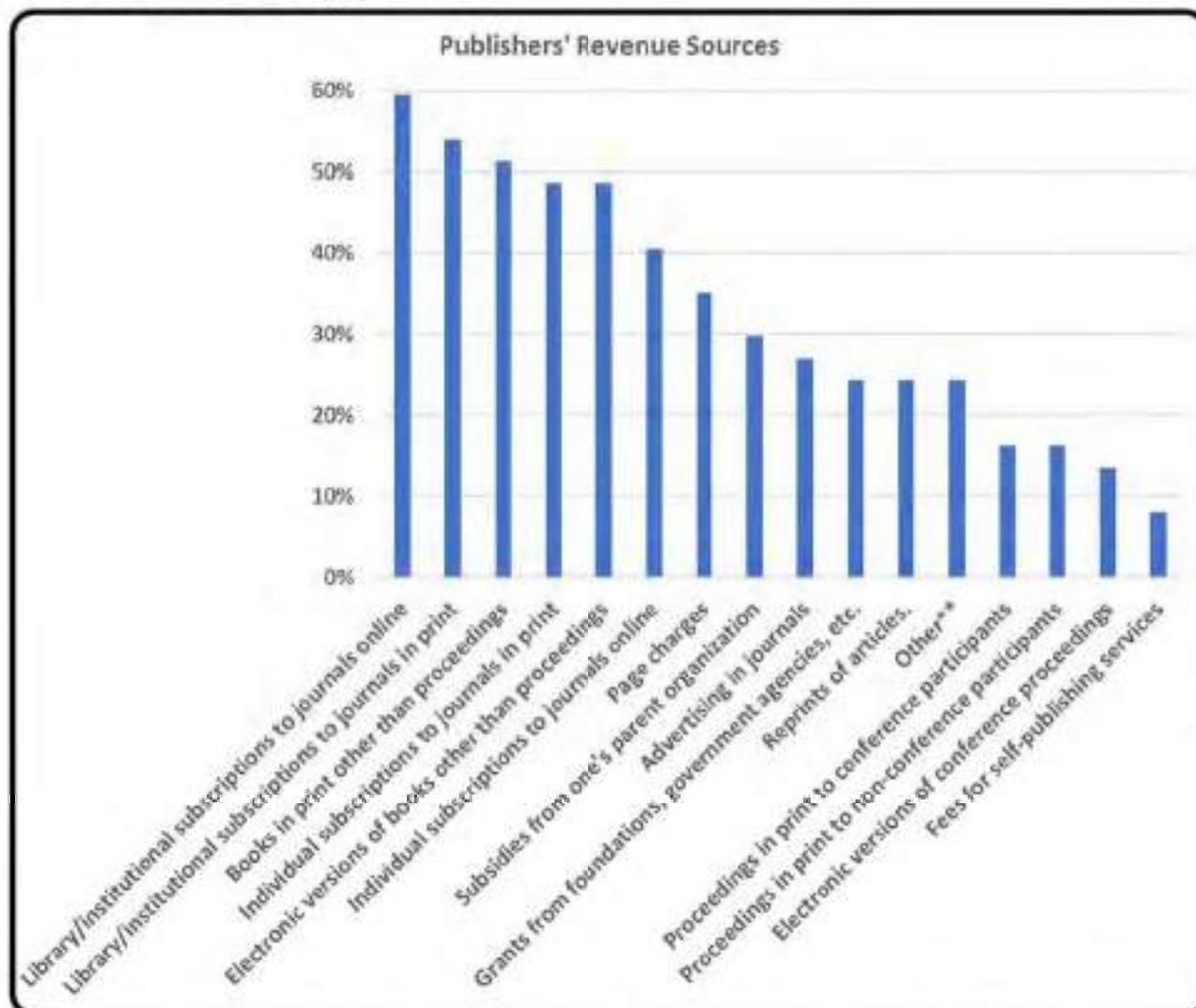
On average, 40 of our PUBLISHER respondents indicated that they each provide at least five of the above services to their content providers and publish in at least eight of the scientific fields listed below. The list of fields is the same as was presented to our RESEARCHER and READER visitors. Whereas those respondents primarily favored just three fields, the PUBLISHERS cover the gamut rather uniformly.

Physics	43%
Chemistry / Electrochemistry	35%
Materials Science	38%
Metallurgy	20%
Ceramics	18%
Polymers	20%
Biophysics or Biochemistry	38%
Geology / Earth Science / Mineralogy	38%
Geochemistry / Geophysics	28%
Astronomy / Space Science	28%
Astrophysics	25%
Crystallography	25%
Another Physical Science not listed here	15%
Biology	43%
Medical Research	40%
Botany	20%
Zoology	30%
Ecology	35%
Another life science not listed here	33%
Environmental Science / Climate Science / Atmospheric Sciences	45%
Oceanography	30%
Applied Science / Technology Development	35%
Instruments & Instrumentation	28%
Engineering (any branch)	43%
Other ⁵	35%

⁵Among the "other" topics volunteered by respondents are social sciences, humanities, psychology, health and medicine, defense and security, economics and labor, laboratory analysis methods, entomology, religion, archaeology, art history, pharmacy, computer science, neuroscience, cognitive science, evolution.

We accept the data from our PUBLISHER respondents in the context of this quite wide topical distribution and the broad constituencies that implies. About half of these PUBLISHERS indicate that wide distribution of preprints prior to manuscript submission does not affect acceptance decisions. The remaining group was about equally split between acceptance definitely being affected and it being affected only when a judgment is made about impact on sales of their publication.

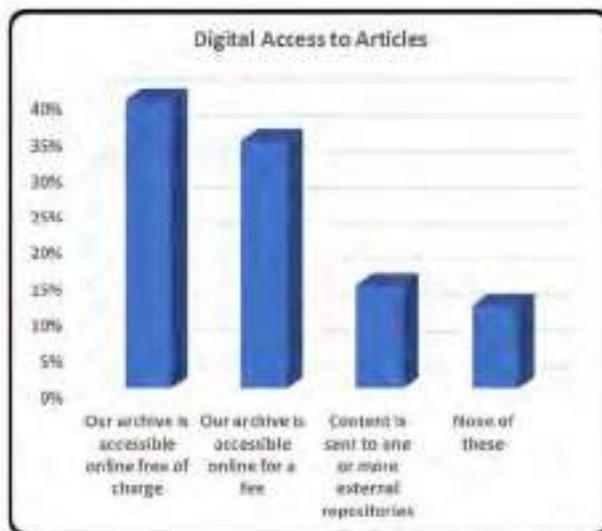
Publisher revenue sources are displayed below.



**Prominent among the "other" sources listed was 'Author Publishing Charges (APC) for Open Access.'

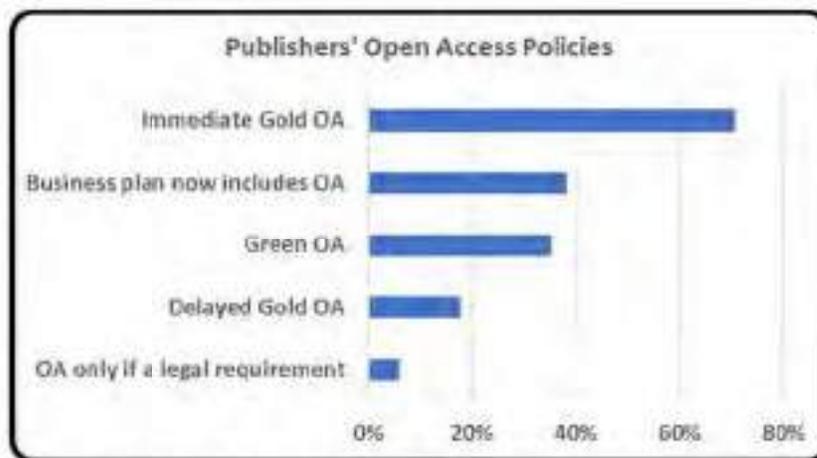
Turning to the question of online access to published scientific reports, most PUBLISHERS either provide an archive of their own (free or for a fee) or deposit content into other repositories where it is accessible.

Open Access (OA) is a relatively new issue in the context of the long history of academic publishing. It is still in a state of flux with varying policies from publisher to publisher and nation to nation. The current lexicon refers to "Gold OA" when a publisher hosts content on its own web site and provides free access, either immediately upon publication or delayed (embargoed) for a time. In some cases, authors are required to pay a processing charge (APC). "Green OA" refers to publishers permitting and perhaps facilitating access to articles at web site repositories not of their own and usually selected by



the authors and their institutions. Thirty-four of our sample of PUBLISHERS provided the following breakdown of their policies. Although we did not offer the explicit option in the Survey, some publishers commented that they operate a hybrid Gold/Green system depending on the specific publication involved.

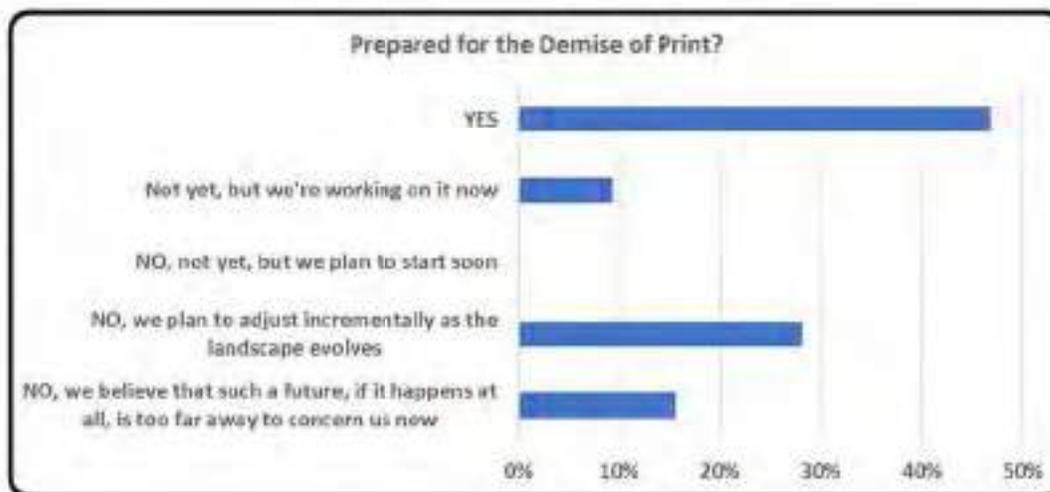
Copyright laws and regulations that protect proprietary interests of makers of original creative works, also cover authorship of scientific research publications. Publisher respondent opinions about copyright were solicited. In summary, it appears that current copyright law is not a serious issue for our PUBLISHER sample. Protections are deemed adequate and nearly half of our respondents require transfer of copyright before publication.



© Copyright Policy and Opinion ©

We require copyright assignment from authors or their employers before publication.	47%
The current domestic and international laws and regulations on copyrighting of scientific publications provide adequate protection.	26%
The domestic and/or international laws and regulations on copyrighting of scientific publications require updating to be effective in this digital age.	6%
Copyright laws and regulations are compatible with the trend toward open access to publications.	44%
We support and facilitate free "fair use" for scholarly purposes of our copyrighted publications and excerpts therefrom.	53%
We grant permission only on a case-by-case basis for substantial non-commercial use of copies of our publications.	18%
Our copyrighted publications are not normally provided through Creative Commons (CC) licenses or the equivalent that would enable their free and broad distribution.	24%

When asked, "Has your institution developed a plan for a transition to a fully electronic/digital print-free publishing environment of the future?" these responses were received. In this case, we have included the answer option that no one selected.



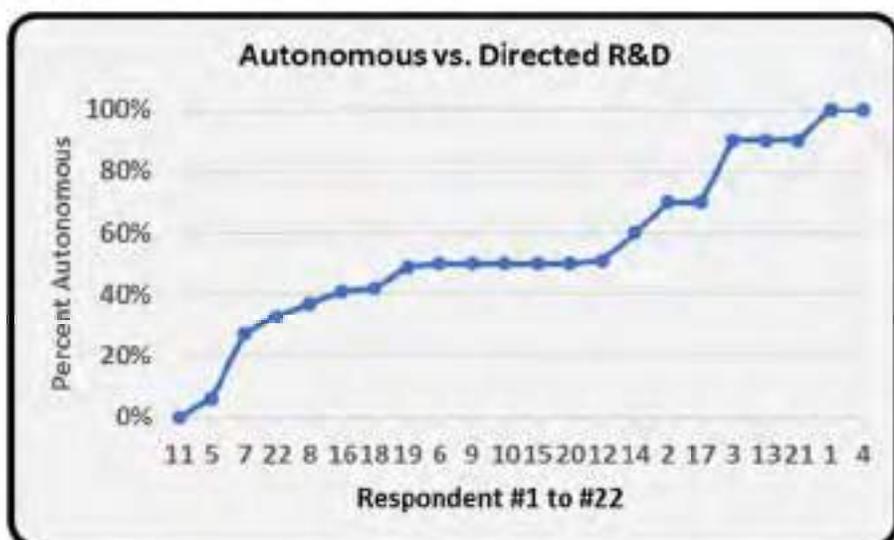
Managers; Executives; Sponsors; Intellectual Property Experts

Too few responses were received from R&D MANAGERS, CORPORATE EXECUTIVES, R&D SPONSORS, and INTELLECTUAL PROPERTY EXPERTS to claim statistical validity for any summary opinions. However, we can exercise some editorial judgment and present a few anecdotal observations that arise from the responses we have received.

Managers and Executives (23 respondents)

Most cite either an academic or government home base. A few cite industry. Two-thirds represent organizations with 200 or more employees engaged in scientific research. For three-quarters of these organizations, over half of their researchers hold doctorate degrees in science or technology.

Also, despite the ubiquity of digital access to publications today, eight of ten of these respondents provide a physical library for their staff. This is consistent with librarian comments we have seen above that a physical library is more than just a repository for books and journals. All respondents do however subscribe to one or more online resources that provide access to the scientific literature.



An interesting distribution relates the degree to which researchers are allowed to select their own projects. The range is quite wide with a plateau at the 50% level, a compromise between individual creativity and an organization's narrower mission needs.

In addition, below we see that two-thirds of respondent organizations support employees' individual subscriptions to journals, often with some restrictions.

All of these MANAGERS and EXECUTIVES encourage their staff to peruse the scientific literature as a way to stay abreast of the science and technology and to build on the work of others. They are also encouraged, in most cases, to publish their non-proprietary research in the open literature. At the same time, they enforce a review and release procedure to prevent release of proprietary information. When proprietary information is found, one-third of our sample provide editors and patent attorneys to help "sanitize" manuscripts, whereas the rest expect the authors themselves to rewrite and resubmit.



Our MANAGERS and EXECUTIVES sample have rather similar views about open access and copyright as do our PUBLISHERS sample as shown in the tables below.

Open Access Attitudes

We prefer Gold OA so that our work gets maximum early exposure	50%
We avoid early release so our researchers can lead in their fields	6%
We avoid early release so our company has a competitive advantage	11%
We have Green OA, so journal policy is not relevant	17%
Our work is publicly funded with OA regardless of journal choice	39%
We don't publish work we hold close without a legal mandate	17%

[Highlighted data are the only data that significantly exceed the margin of error for this sample.]

© Regarding Copyright ©

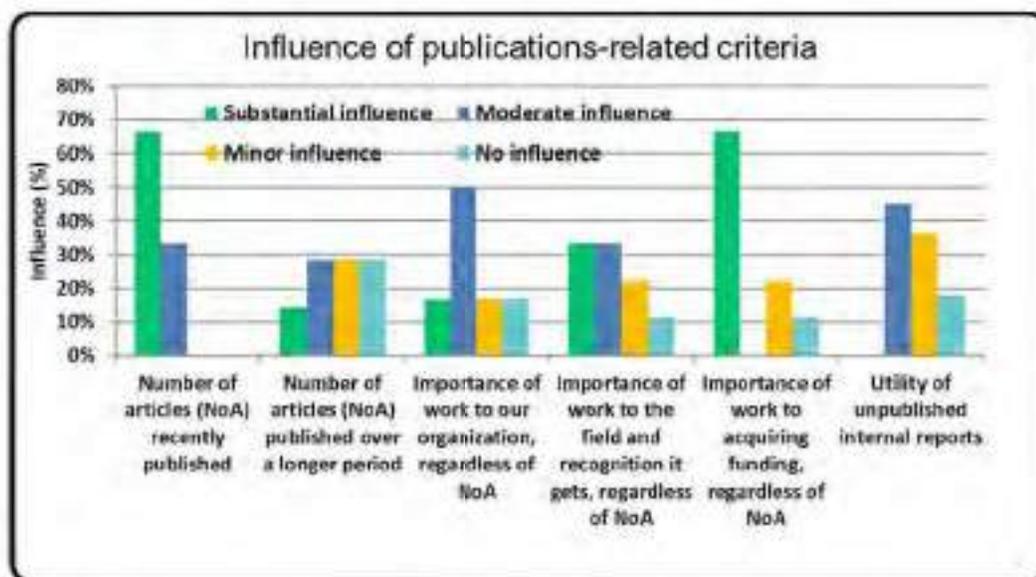
Our researchers perform "work for hire." Our organization owns the copyrights	53%
We often assign copyright to our researchers	12%
We negotiate copyright ownership as part of extramural research contracts	29%
We retain full and permanent ownership of copyrights	35%
We assign copyrights to publishers that require it	24%
"Fair use" of our copyrighted publications does not pose a problem	47%
We grant licenses for commercial use of our copyrighted publications	24%
Copyright laws are compatible with the OA trend	18%
We use Creative Commons (CC) licenses for free distribution of some copyrighted work	24%

[Highlighted data are the only data that significantly exceed the margin of error for this sample.]

Of substantial importance to authors themselves and a source of motivation (or pressure) to publish reports covering their work is the way in which such publications affect appraisal of their performance. Salaries, promotions and less substantive rewards may be directly tied to recent publication numbers and perceived impact. Our MANAGERS and EXECUTIVES sample data vary quite a bit in this regard, but most say an influence of about 80% or greater applies to employee evaluations.



Even though our sample size is small, we feel compelled to dig a little deeper on this subject because of the nuance that underlies how appraisals may be performed. Below we show which criteria our respondents do or do not regard as important.



A classic question among researchers when it concerns receiving credit for a publication is whether having co-authors, perhaps many co-authors, affects that credit. If there are N co-authors, is the total aggregate credit a factor of N greater so each author gets N , or does each receive $1/N$, because one publication has a fixed value to the organization. Our sample reveals that it is more nuanced in practice. 24% tell us that xN applies. 12% say $1/N$ is the case. But 64% say each coauthor's credit is in proportion to her/his perceived contribution to the underlying research.

An excerpt from one respondent's comments is worth reproducing here.

...it could be perhaps that the general proliferation of readily available information online, the vast majority of which is unsubstantiated and unreferenced, sets a mindset amongst newer researchers of publishing in a similar vein of "volume or number, not quality or depth." [...] ...the skills for the future probably have more to do with filtering and discernment in reviewing literature, than in thoroughness or rigor, as may have been the case in the past.

Sponsors (10 respondents)

National government ministries, foundations, corporations, and R&D services companies are included in the sample. All agreed that publication of sponsored research is rather, very, or extremely important. Whether publication in print or online is more, less, or of the same value did not find consensus. Publication costs are generally covered by research grants, whereas journal subscriptions may not be. Opinion was equally split over covering the cost of a proceedings volume that includes reports of the funded research. Most require an acknowledgement of the source of support in all publications of the sponsored research. Consensus was evident and positive about open access, Gold OA being preferred, where the journal itself maintains the online access.

IP Experts (10 initial respondents)

Unfortunately, the number of respondents dwindled quickly as they encountered publication questions, leaving us with no alternative than to demur. The essential questions about patent protection, copyright effectiveness and striking a balance between open publication and protection of proprietary information must be deferred to a future survey.

RESEARCHERS comment:

- *While I understand the pressure to get papers reviewed and accepted quickly, I feel that some journals are now asking for reviews to be returned far more quickly than I can do it given my other obligations. I'd like to see a more standardized timeframe for peer review.*
- *While I understand the desire for research to be open access, I am concerned that the increasing tendency to require payment from authors makes it difficult for those with little funding to get published...*

HYPOTHETICAL SCENARIO

Respondents of all roles were directed to a final question before exiting the Survey. 850 of 1435 Survey visitors chose to give us their responses. The question posed was as follows:

...your reaction to the following hypothetical scenario is requested. -- You are a senior manager at a profitable publishing house that serves the scientific community. -- A substantial reduction in the funding of scientific research occurs. -- As a consequence, the flow of manuscripts submitted and sales/subscriptions decrease markedly. Which of the remedial business actions listed below would you be likely to implement?

The remedial actions offered were:

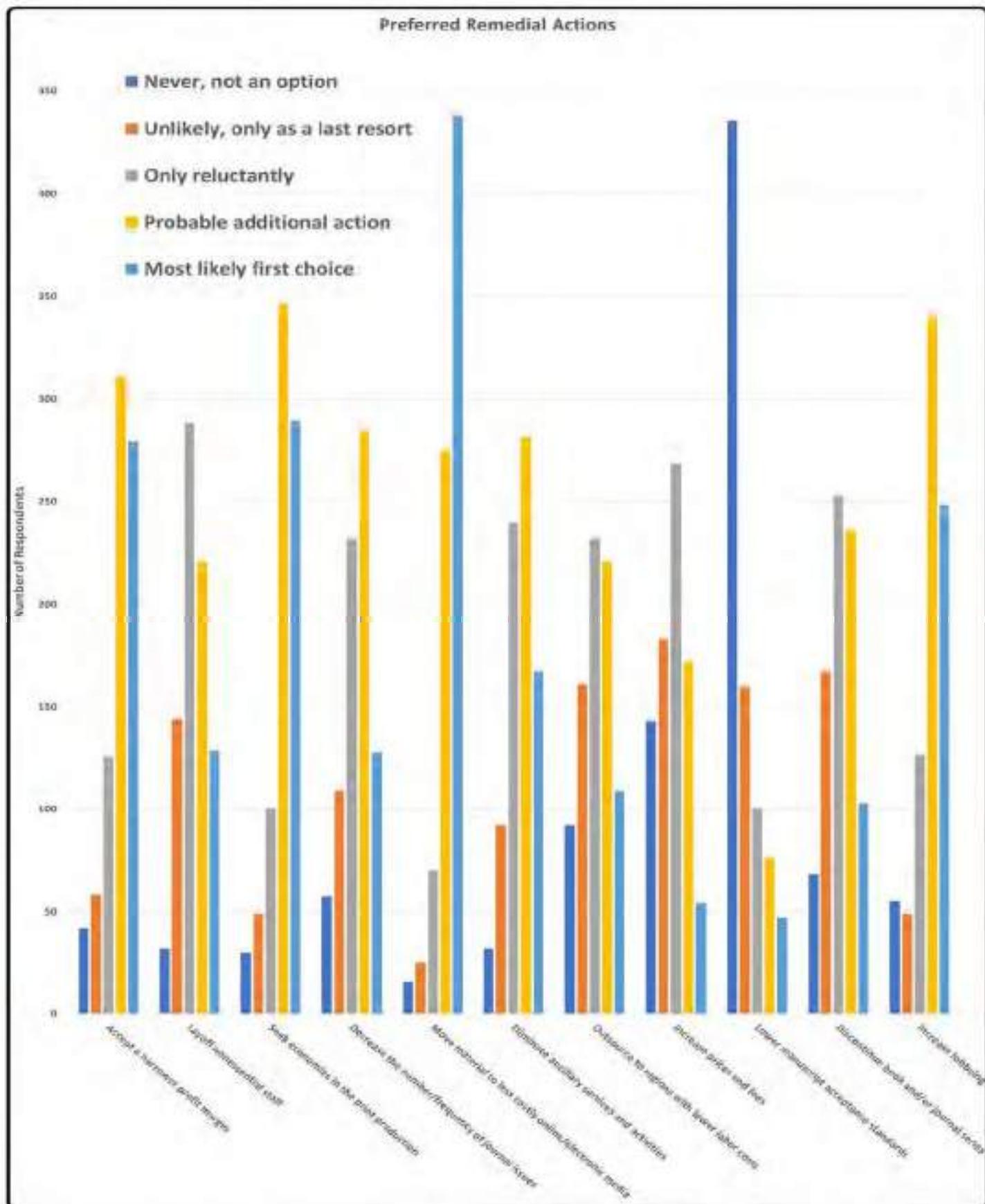
- *Accept a narrower profit margin in order to maintain employees' jobs and all products as they were before the downturn.*
- *Layoff nonessential staff.*
- *Seek economies in the print production processes such as less costly materials, stop four-color presses, etc.*
- *Decrease the number/frequency of journal issues.*
- *Move more published material to less costly online/electronic media.*
- *Eliminate ancillary services and activities such as advertising, pro-bono conference support, community service, etc.*
- *Outsource more customer service and production facilities to regions with lower labor costs.*
- *Increase prices and fees to make up for the shortfall in revenue.*
- *Lower manuscript acceptance standards in order to maintain the same number of published pages.*
- *Discontinue book and/or journal series that have been least profitable.*
- *Increase lobbying directed at sources of research funding in order to reverse the root cause of the problem.*

These are edited to conserve space in the graph on the following page.

Respondents were asked to rate each option according to the following five criteria:

- Most Likely First Choice*
- Probable Additional Action*
- Only Reluctantly*
- Unlikely, Only as a Last Resort*
- Never, Not an Option*

Referring to the data below, we see that there's a trend toward what might be termed "scholarly ethics." Lowering acceptance standards to increase page count is resoundingly rejected. Shifting to online, presumably lower cost, media is very strongly favored. Less extreme but still instructive are a clear resistance to increasing fees and discontinuing series and a clear preference for seeking economies in print and lobbying for increased R&D funding.



SURVEY CONCLUSIONS

It is rather reassuring that most data collected in this Survey reflect quite predictable findings. Easily anticipated by those who are already immersed in the scientific publishing enterprise, many facts and figures, especially some with commentary, may be revealing and unexpected to those more removed from the publication process. The factual data speak for themselves and require no drawing of additional conclusions. Opinions and experiences related through the Survey are more amenable to a bit of review. We can enumerate the general categories: preprints, open access, performance appraisals, copyrights, publication costs, peer review, quality of manuscripts, validity of reports, ethical matters, library roles, etc. Many of the Survey questions allowed open text comments. During the life of the Survey, more than 40,000 words found their way into the comment text fields – too many to reproduce here. As one might expect, the tenor of comments was generally critical of the topic at hand and the current state of affairs, but quite often they also proposed remedies. Our conclusions below have benefited from that visitor commentary as well.

Preprints: Physical preprint mailing is becoming rare. Electronic copies are either sent to close colleagues or, with equal probability, distributed broadly. Authors usually wait for articles to be accepted by a journal before distribution. A majority of users of the literature do rely on prints for early notice of developments whereas the publishers of that literature are about equally split between being agnostic about broad prepublication distribution and more limited to no distribution lest that affects sales and revenues.

Open access: Despite the current unsettled nature of the OA landscape, our Survey respondents have not reflected a heated debate. The general tenor of responses on the topic is positive, although preferences arise over immediate versus delayed release, author processing fees, and best publisher business models. Choices of OA algorithm among Gold versus Green versus hybrids, and the fees they engender, tend to revolve around the economics of commercial and not-for-profit publishers, author institutions with or without substantial resources (both financial and digital), and what requirements may be imposed by sponsors of the reported research. Authors, their institutions and publishers are the classical entities affected, but the digital repositories are the new entries. Their business plans rest on decisions about access fees, processing fees, subscriptions, and whether or not to incur expenses tied to an article's validation. One voice missing from the debate and from our Survey is that of the supposed beneficiaries of OA, i.e., the public who, in principle, will benefit from access to the scientific research. Without substantial worldwide acceptance by all stakeholders of the European Union's cOAlition S (so-called Plan S), which is supposed to take effect on 1 January, 2020, and which calls for immediate access upon publication, open access will continue to see a variety of algorithms and, one hopes, constructive debate.

Performance appraisals: Our sample of performance evaluators was too lean for conclusions to be statistically defensible. But the data are nevertheless consistent with expectations based on years of discussion in the open science press. And, more significantly, they are supported by the quite statistically significant impressions of our sample of evaluated RESEARCHERS. The number and perceived importance of a researcher's publications is taken as a substantive factor in judging that researcher's performance and value to their project, their program or their institution. Multiple co-authors may or may not affect how an individual's contribution is judged. Journal impact factors enter the assessments. Quite uniform and intense open-text comments contend that impact factors are not only an inappropriate measure of the importance and scientific value of the published research but have a negative influence on performance of the research and on the broad dissemination of its results.

Copyrights: Neither PUBLISHERS nor authors' employers in our sample have problems with the current copyright law and the occasional need for assignment. Often Creative Commons access is granted to nonproprietary work for hire and rights are assigned to publishers when required. The current domestic and international laws do not have critics in our sample.

Publication costs: Not surprisingly, authors and their employers and sponsors want fees for publishing to be low or zero. Nevertheless, cost alone does not normally deter submission of an important article to a high impact journal. Similarly, LIBRARIES consider cost as a major factor in choosing among journals for their users, but will yield to high demand from their own constituents. PUBLISHERS of scholarly journals in our sample have for the most part resisted inclusion of paid advertising to defray costs, however our sample did not include some quite well-known magazine-style publications that include news and current events sections in each issue.

Peer review: Besides personal time constraints, the most frequent reason a request to review is declined by an assumed expert is a mismatch of expertise. This implies that most reviews are done by the appropriate experts. The Survey did not delve into details of editor-reviewer-author interactions when acceptability questions arise. Respondents' complaints centered around accusations of supposedly incompetent and lazy reviewers and overly lax and permissive editors, contending that the quality of the literature has declined as a result. That's a minority view in our sample but may deserve more in-depth study. A more outwardly visible problem related to peer review is its admitted absence for some online repositories as well as for purely digital, possibly predatory, journals where a "buyer beware" philosophy seems to apply.

Validity of reports: A concern focused on online content in particular, it is closely tied to the peer review question. Our USER/READER respondents accept a variety of assurances, but primarily rely on identifying a reputable author, reputable journal, or reputable publisher.

Quality of manuscripts: Distinguishing quality from validity, quality speaks to whether authors produce well-written, complete and clear expositions of their work. Our EDUCATOR sample's data reveals considerable opportunity for students and younger colleagues to receive explicit training and experience through apprenticeship that ought to result in well written submissions. A few open text comments have expressed concerns about deterioration in this area because of inadequate language skills of authors and indifferent editors. Mentioned here for the sake of completeness, a narrowly focused study would be needed to identify any such wide-spread phenomena.

Ethical matters: Authorship ranked at the top of ethics issues in our sample. We assume this relates to whether a person has contributed enough to be listed on the byline. Perhaps adding an author who contributed nothing would be an ethical concern, but less egregious situations might be relabeled as issues of project management judgement, especially if personalities are involved. We found a low incidence of serious ethical issues and no evidence from the open text comments that any went unresolved to the extent that published reports were compromised.

Library roles: A general consensus exists that the growth and ease of use of online repositories and associated ubiquitous digital access will affect libraries of the future. Many libraries are however embedded in institutions from which they receive support, and for which they provide a much-valued interactive physical learning environment. A guarded optimism prevails.

Et cetera: in Appendix C, we provide excerpts from the open text comments accumulated from all respondent roles and all questions that offered the comment option. Criteria for choosing excerpts ultimately are a matter of editorial judgement and, indeed, preference. But the goal is to ensure that all salient topics get aired and that attractive ways of expressing relevant thoughts are included even when they repeat points already made.

RECOMMENDATIONS

Given that much of the data obtained through this Survey do not come as a surprise, and certainly have not shone a spotlight on an urgent time-sensitive remedial need, we can at most recommend that the efforts to address such ongoing challenges as library financial health, open access options and costs, and relevance and distortive influence of impact factors, all continue apace.

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APPENDIX B

All Survey Questions[§] Grouped by Respondent Role

The Scientific Publishing process spans many roles. Each contributes to the end product in a different way with different goals. For your responses to this survey to be meaningful, the questions must be relevant to the role you play in the process, based on your choice below. [Please note: If you play more than one role – for example you are both a researcher and an editor – after completing the survey for one role, you may reenter the survey, choose another role, and answer a correspondingly different set of questions.]

* 1. First, please indicate the home region of the principal institution with which * you are affiliated.

* 2. Please tell us what your relationship is to Scientific Publishing. (Chose your principal activity.)

Researchers (p. 8,9 & p. 10 et seq.)

Across scientific fields and disciplines, the Scientific Publishing process can differ markedly. To better understand your responses, identifying your field and/or discipline is required.

* 3. Please select the one category that most closely matches the field or discipline to which your published work corresponds.

4. You may specify a subfield that fits under the main field selected above.

5. Please indicate your current career stage.

Questions for researchers who publish their results.

6. Please indicate how influential each of the fifteen factors listed below is when you choose a journal to publish your research reports.

7. When your article has multiple authors,

8. When your article has multiple authors,

9. Performance of a researcher is often evaluated, in part, with reference to published research. In your case, (Check all that apply)

* 10. In-house manuscript review prior to submission (check * all that apply)

* 11. Preprints of our reports are distributed

12. When preprints are distributed

* 13. Within the previous three years, have you been concerned about and had to resolve any ethical issues pertaining to publishing your work?

14. If an ethical issue did arise within the past three years, did it involve (check all that apply)

15. In addition to archival journals, do you also contribute to the scientific literature through (check all that apply)

16. Do you provide articles on scientific topics to (check all that apply)

* 17. Have you provided peer review services to a publisher or funding agency/ministry within the past five years?

18. If you have declined to perform a peer review within the past five years, was that because of (check all that apply)

19. Which of these seventeen adjectives describe your overall interaction with journal editors? (Check all that apply)

* 20. Describe one substantial change you believe would be an improvement to a future scientific publishing process for researchers like you.

Thank you for completing the portion of this survey that focuses on your role as a researcher/author of scientific publications. Below you may choose to exit the survey now or continue to questions that focus on your role as a user/reader of the scientific literature. (An additional 16 questions)

* 21. Please choose whether to exit or continue.

[§]Multiple choice options omitted

User of the Scientific Literature (p. 8,9 & p. 15 et seq.)

Across scientific fields and disciplines, the Scientific Publishing process can differ markedly. To better understand your responses, identifying your field and/or discipline is required.

* 22. Please select the one category that most closely matches the field or discipline to which your use of the literature corresponds.

23. You may specify a subfield that fits under the main field selected above.

24. Please indicate your current career stage below.

Researchers, editors, indexers, reviewers and educators read and search the Scientific Literature. The following questions are meant to reveal how you access that literature, what difficulties you encounter, and what improvements you can suggest.

25. How do you identify published reports that you want to read? (Check all that apply)

26. How often do you visit a library to access reports in journals or books in print?

27. Do you routinely visit a library to browse recent publications with no specific report in mind?

28. How and why have you sought help from librarians or other library staff? (Check all that apply)

29. Please rate the overall value to you personally of the library you most frequently use.

30. Either through online subscription or pay as you go, do you retrieve full text versions of reports of interest from electronic media?

31. Upon what do you rely to judge the reliability and validity of reports accessed online? (Check all that apply)

32. Would you favor online post-publication peer review in which all articles are published without advance review but are accompanied by contemporaneous reviews posted by readers/experts such as yourself?

33. Do you ever access raw experimental data archived separately from the corresponding research report?

34. Do you rely on preprints to maintain awareness of the most recent R&D developments?

35. Which online resources do you frequent to search for reports of interest? (Check all that apply)

36. Within the past five years, have you paid to have an article translated from one language to another?

37. Do you read archival scientific reports, or excerpts therefrom, that are from a field of study far from your own?

38. How often do you read popularized accounts of scientific research in newspapers, magazines, or online news sites?

* 39. Describe one substantial change you believe would be an improvement to a future scientific publishing process for users of the literature like you.

Managers at Institutions at which Scientific Research is Pursued (p. 29 et seq.)

As a manager of research and researchers, your views on Scientific Publishing are needed.

* 40. Please specify the type of institution where you manage an R&D program * or portfolio.

41. How many of your employees are engaged in scientific research

42. What percentage of your R&D staff hold a doctorate degree in a field of science or technology?

43. On average, to what extent does your R&D staff select their own research topics?

The role of Scientific Publishing at your institution and its relevance to personnel management and institutional objectives are of interest.

44. Does your organization have library facilities for use by your R&D staff?

45. Does your organization subscribe to one or more online resources that provide access to the scientific literature?

46. Does your organization support your staff's individual paid subscriptions to journals, book series, etc.?

47. Is your research staff encouraged to peruse the scientific literature in order to build on the work of others?

48. Do you encourage your R&D staff to publish their non-proprietary research in the open literature?

49. Do you enforce a review and release procedure to prevent release of proprietary information?
50. Do you help researcher-authors remove proprietary information from manuscripts to enable publication of their work?
51. How do "open access" policies of some journals affect publication decisions? (Check all that apply)
52. Copyright laws and regulations that protect proprietary interests of makers of original creative works, also cover authorship of scientific research publications. Please indicate with which of the statements below you agree. (Check all that apply.)
53. When evaluating the performance of a research scientist in your organization, how important is their recent publication record?
54. Please indicate the influence publications-related criteria have on a researcher's next performance appraisal.
55. Does the credit a researcher receives for a published article depend of whether co-authors are involved?
- * 56. Describe one substantial change you believe would be an improvement to a future scientific publishing process for managers of R&D like you.

Intellectual Property Considerations in Scientific Publishing (p. 31)

The tension between preservation of the proprietary interests of the sponsors of research and the larger scientific community's need to access results of the latest research is an ongoing issue.

57. Are you a patent attorney?
- * 58. Please specify the type of institution for which you provide advice related to intellectual property concerns.
59. Do you review and recommend whether scientific manuscripts may be released for publication?
60. Do you believe "open access" publications are a net positive or negative for protection of trade secret and invention rights?
61. Would your response to the previous question be different if you could specify the embargo period before release to the public?
62. Does the type of open access repository (i.e., your own institution's [so-called Green OA] or a journal hosted [so-called Gold OA] archive) affect your evaluation of the appropriateness of publication?
63. How often do you seek worldwide protection of intellectual property as opposed to domestic only?
64. To establish invention priority, would you use a scientific publication's date of submission as evidence in addition to laboratory notebooks, etc.?
65. Do you agree that reports containing proprietary information must be considered "applied" research whereas those with no proprietary content may be considered "basic"?
- * 66. Copyright laws and regulations that protect proprietary interests of makers of original creative works, also cover authorship of scientific research publications. Please indicate with which of the statements below you agree. (Check all that apply.)

Sponsors of Research (p. 31)

- * 67. With what type of research sponsoring organization * are you affiliated?
68. Please indicate in the table below the importance of publishing reports of sponsored research.
69. Publication of the results of our funded R&D in print journals is:
70. Are the costs of publishing the results of funded R&D considered allowable expenses under your programs?
71. Is the cost of journal subscriptions an allowable expense under your programs?
72. Is the cost of conference proceedings in which your R&D results are reported an allowable expense under your programs?
73. Does your organization require acknowledgement of its support in published reports?

* 74. In what way, if any, does the trend toward "open access" publication affect your programs and policies? If open access is a concern, do you distinguish between author/institution hosted (so-called Green OA) and journal/publisher hosted (so-called Gold OA) repositories?

Editors (p. 24 et seq.)

Editors, as intermediaries between authors and the final published work, have a critical quality control role. However, the term "editor" describes many different jobs in the publication process. The next few questions will help identify your particular role.

* 75. Please select the role that most closely * matches your own.

76. The publisher with which you are affiliated is:

77. Please indicate the kinds of tasks your editorial responsibilities entail. (Check all that apply)

78. Do you believe broad distribution of preprints prior to peer review and publication is a net positive or negative?

79. Do you believe that papers in conference proceedings should be subjected to the same peer review standards as those in archival journals?

80. Do you allow "serial" publication of a sequence of results that could easily be collected and published in a single article?

81. Do you ensure that appropriate key words accompany an article so future topical searches succeed?

82. Does your publication accept paid advertising as a way to defray publication costs?

* 83. Describe one substantial change that you believe would be an improvement to a future scientific publishing process.

Publisher (p. 24 et seq.)

The publisher of scientific research reports is the vital intermediary between the researchers, their institutions, their sponsors and the consumer of scientific information. NOTE: Many publishing houses comprise multiple divisions, serve a wide variety of communities, and publish in a wide variety of genres. For purposes of this survey, please confine your responses to those applicable to publishing scientific research reports and reviews.

* 84. Please indicate the type of publishing organization you represent.

85. Do you publish one or more archival journals for scientific/academic research reports?

86. Do you publish books comprising scientific/academic research reports? (Check all that apply)

87. Are your journals and/or books published only in print, only in electronic media, or both?

88. What are the services that you provide to your authors/content providers? (Check all that apply)

* 89. In which fields do you publish journals or books? (Check * all that apply)

90. Does wide distribution of preprints prior to manuscript submission affect your decision to accept a manuscript?

91. Referring specifically to publication of scientific research reports, reviews, and books, on which sources of revenue does that part of your publishing business depend? (Check all that apply)

92. Retrieval of information without visits to a library is an increasingly common practice of researchers in this digital age. Does your institution maintain or support a searchable archive of your own publications for that purpose?

93. How is your institution responding to the trend toward, and in some cases to regulations requiring, open access publication? (Check all that apply)

94. Copyright laws and regulations that protect proprietary interests of makers of original creative works, also cover authorship of scientific research publications. Please indicate with which of the statements below you agree. (Check all that apply.)

95. Has your institution developed a plan for a transition to a fully electronic/digital print-free publishing environment of the future?

* 96. Describe one substantial change you believe would be an improvement to a future scientific publishing process.

Library/Archive Operator (p. 19 et seq. & p. 21 et seq.)

The utility of the scientific literature depends on immediate and long-term convenient access to that literature by researchers and their institutions. Repositories, be they library shelves with print journals or fully electronic searchable archives, provide a crucial service to those who contribute content and those who ultimately use it.

* 97. Please choose the information storage and retrieval service where you work. [If you work at a combined facility, please choose one now, finish the Survey, then return to the Survey's entry link and choose the other on your return.]

* 98. Please choose the type of library * where you work.

99. Does your library subscribe to online resources through which your users can search for publications?

100. Does your library offer a microfiche archive to users?

101. Does your library offer scientific publications on CD or DVD to local users?

102. Does your library provide or obtain translation services for local users?

103. Does your library provide a reference section where, for example, scientific book series and encyclopedia are offered?

104. Is electronic access to your library's catalogue offered?

105. Does your library provide a new-issue display for the latest journal issues prior to binding?

106. What factors affect the decision to subscribe to a journal in print or a book series? (Check all that apply)

107. Please enter the percent of library staff daily work devoted to customer service interactions directly with users for the following reasons. (Whole numbers only that sum to 100%)

109. What source of funds supports your library's operations and maintenance of your collections? Please exclude the capital costs of library construction and major equipment purchases. (Check all that apply)

110. In the context of the rapid evolution of digital technologies, electronic media, and the Internet, what future for the physical library, as a repository for the scientific literature, do you envision?

* 111. Describe one substantial change you believe would be an improvement to a future scientific publishing process.

Online Archive/Search Engine (p. 21 et seq.)

* 112. Please choose the type of online storage and retrieval resource where you work. [If more than one apply, please choose the one service most used by your customers.]

113. How is your service affected by "open access" policies?

114. What sources of revenue support your operation? (Check all that apply)

115. How does your service deal with questions of the validity of content (i.e., intermediation)? (Check all that apply)

116. Do you perform or sponsor data curation activities including development of subject-specific ontologies?

117. Are visitors to your service permitted to download/copy abstracts of articles free of charge?

118. Are visitors to your service permitted to download/copy full text and figures of an article?

119. Often, a user is interested only in a relatively small portion of a scientific article. Do you provide a means to copy/download short excerpts?

120. Does your service offer a repository for scientific data linked to a published report?

* 121. Describe one substantial change you believe would be an improvement to a future scientific publishing process.

"Other" roles are not included in our Survey's current scope.

If you would like to try again, select "Return to the beginning..." to choose a role closest to your own. Otherwise, select "Exit survey."

* 122. Choose to try again or to exit the survey.

Educators (p. 22 et seq.)

An educational institution provides knowledge and skills for pursuit of research careers. Communication of the results of research is one such vital skill that must be acquired.

* 123. Please indicate the academic level at which you contribute to the training of students in science and technology. (Check all that apply)

124. Do the majority of your students arrive with writing and speaking skills consistent with their academic level?

125. Does your institution offer remedial courses for those students who initially lack adequate language skills?

126. Does your institution offer one or more courses that include explicit training in communication of technical information, e.g., as part of a professional development curriculum?

127. Do you provide editorial guidance and oversight to students and early-career colleagues who are writing their own reports or preparing presentation materials?

128. When you and a student or junior colleague are co-authors of a report, do you use that opportunity to coach your co-author in report preparation?

129. Which learning paths do you believe are effective for developing communication skills in scientific fields? (Check all that apply)

130. English has been the dominant language of science. For a great many researchers whose native language is not English, this presents an additional hurdle in writing and reading technical papers and understanding and delivering talks at conferences. Please choose the description that best matches your situation from the list below.

131. Beyond requiring writing, composition and presentation skills, are students and junior researchers also provided criteria for selecting publication media and presentation venues.

132. Describe one substantial change you believe would be an improvement to how next-generation researchers are prepared for publishing their work.

A Hypothetical Scenario for All Respondents (p. 32 et seq.)

The set of questions you have addressed so far were tailored to respond to your self-identified relationship to the scientific publishing enterprise. As a final question for all respondents, your reaction to the following hypothetical scenario is requested. [Please note: If you have taken this survey more than once, because you play multiple roles in the scientific publishing process, you will have seen this final question before. You may enter new responses based on your additional role in the publishing process or just proceed to the exit.]

– You are a senior manager at a profitable publishing house that serves the scientific community.

– A substantial reduction in the funding of scientific research occurs.

– As a consequence, the flow of manuscripts submitted and sales/subscriptions decrease markedly.

Which of the remedial business actions listed below would you be likely to implement?

133. Please indicate the likelihood that you would implement each of the eleven possible remedial actions listed below.

*Questions preceded by an asterisk were not optional.

APPENDIX C

Fair warning! The vast majority of comment excerpts below reflect complaints and quite negative observations about the many components of the publishing enterprise as it exists today. It would be tempting to ascribe this to the well-known tendency, when any survey offers an open text opportunity, for those respondents who are unhappy about something to invest the extra effort to pen a response. But in this Survey, to be fair, our respondents are simply satisfying our request. They are responding to a question generally posed as: *Describe what you find to be unsatisfactory about the scientific publishing process today and one substantial change you believe would be an improvement.* After naming the object of their complaint, most respondents offer some remedial ideas, albeit some confess to having no practical solutions in mind. The excerpts (slightly edited for clarity) chosen below each represent very many similar comments found within the 40,000 words collected.

We can exercise editorial prerogative here, instead of waiting until the end of this appendix, by enumerating up front the ubiquitous issues that become apparent below.

- Costs borne by researchers, their institutions and libraries in the context of high fees and commercial publishers.
- Poor performance of editors and peer reviewers; unfair burden on peer reviewers without incentives.
- Flood of papers and journals – many of poor quality; predatory journals
- Misuse of journal impact factors and quantity vs. quality in performance appraisals: “publish or perish” paradigm.
- Open Access needed but fraught with problems.
- Nonuniform manuscript formatting requirements.
- Favoritism based on fame, gender, nationality, and/or intuitional affiliation. Use double blind reviews.
- Access to the literature for smaller institutions and developing countries.
- Publishing negative results; Publishing confirmatory results.
- Underdeveloped language and writing skills.

It would be fair to ask, why not simply summarize the central themes of our respondents’ comments, rather than devote the extra time to compile and the space to print so many examples. We are more than editors of his report; we are also members of the scientific and publishing communities. It seemed therefore obligatory to try to match the obviously intense and heart-felt comments with an allocation of effort and space proportionate to and respectful of the sincere and impassioned contributions of our responding colleagues. [eds.]

JOURNAL CHOICE

- *The choice of journal is discussed by all authors with a goal to reach consensus, but generally the lead and/or senior author has the final say.*
- *Group decision, heavily influenced by the view of the senior author.*
- *The choice of journal is decided by both the lead author and the research advisor or manager.*

AUTHOR ORDER

- *The PI is listed last; the lead (corresponding) author goes last; the advisor of the project is last; the academic advisor is last.*
- *From junior to senior; supervisor is last author; senior author (i.e., last); most work first, most responsibility last.*
- *Author list order is based on compromise between high-to-low degree of participation and low-to-high seniority.*
- *Last is the main PI; the group leader as last author (even if he did a lot); team leader(s) always goes last; the end position is reserved for head of the group; supervisors/director of studies as last author; director(s) of the research go last; last author is the leader.*
- *Usually the PI decides the sequence when it is clear but consults individual authors if there is ambiguity; The lead author decides; author list order is discussed among senior authors; consensus on various agreed factors; the order is decided by all authors.*
- *Issues with people being acknowledged when they should be coauthors and issues of people being authors when they should be acknowledged.*

ETHICS

- *Failure to appropriately cite the literature.*
- *Papers published using my name that I did not write or approve.*
- *Ownership of samples.*
- *Public discussion of confidential work by a peer reviewer.*
- *Tried to stop publication as they were afraid the data would affect their commercial activities.*
- *Unknowingly broke a secrecy agreement.*
- *Partial republication of text found on-line.*
- *Potentially misleading presentation of results*
- *Plagiarism of data and text already published in papers written by others; Plagiarism by coauthors;*
- *Colleague with no links to the project submitted a paper on the same material and same topic after seeing our internal presentation.*
- *Everyone agrees that publishing the same result twice is not good.*
- *End the destructive practice of automatic co-authorship of bosses of research institutions or heads of research teams.*
- *Several high-profile data fabrication scandals have served to undermine the public's faith in the motives of academic researchers.*
- *Problem of authors submitting to multiple publications at the same time.*
- *Sometimes it is difficult to determine plagiarism if you don't pay for a service to check for plagiarism.*

WHY NOT DO A PEER REVIEW

- *The journal asked me to review far too often.*
- *So many manuscripts need more editorial/copy editing than I can reasonably provide.*
- *Absolutely no reward for doing it.*
- *The review process is rather pointless these days.*
- *Will only peer review for journals that I publish in.*
- *Not for a non-reputable publisher.*
- *I do not offer my refereeing services to publishers who overprice their journals.*
- *Too many requests at the same time and prior reviewing commitments.*
- *Not when predatory journals make the request*
- *Poor written quality of the manuscript; my job is not to edit the papers of others.*
- *Bad reputation of the journal.*
- *They publish papers apparently regardless of what I say as a reviewer.*

BIAS

- *...many papers even not reaching the referees for quite obscure reasons if papers are submitted from small or not fully known research groups.*
- *A double-blind process, during the revision stage, may help. It is evident that large groups have some preferential publication pathways.*
- *Double blind peer review may be a solution to reduce reviewers possible bias based on gender, nationality, location or reputation of authors.*
- *Editors must not be biased towards institutions/countries/regions.*
- *Having big names on the manuscript determined whether the paper is sent out for reviews or not.*
- *I believe nowadays, scientific journal accept article by the name of authors not quality of results*
- *I think a great deal of reviewer bias comes based on the authors and/or their institution.*
- *The researchers from all the corners of the world should get equal opportunity.*
- *The scientific publishing process today is biased in favor of developed countries.*

- *There is measurable bias against female authors in scientific publishing. I have friends who have been told by reviewers to add a male co-author.*
- *Those of us at less prestigious institutions have to endure greater scrutiny, condescension, and outright disbelief on the part of peer reviewers. Everyone should have to face the same level of criticism from the peer reviewers.*

COST

- *A color pixel doesn't cost any more than a black or white pixel, but many journals still charge more for color pages.*
- *A single fee paid annually that could open all journals to full text reading.*
- *Break the cycle where authors, reviewers and editors all work for free, and then actually pay to receive the fruits of their labors.*
- *Commercial journals rely upon my free expertise to improve poorly prepared articles but then charge my institution exorbitant rates to purchase their journals.*
- *Complaining about commercial publishing houses won't change the system. The change has to come from researchers themselves, not from publishers.*
- *Financial considerations have become too important for many of the major journals.*
- *For governments, funding of research publication should be similar to funding research infrastructure.*
- *From my point of view the journal should pay the researchers if they want to publish our research*
- *Government funding of open access included explicitly in research grants so that publishers can still afford to manage review and editorial processes, while making it possible to have the research literature much more broadly available to the community.*
- *I am deeply concerned about the costs of the journals, especially in the developing world.*
- *I am using less and less paper-based materials, so that might be a place for publishers to cut costs.*
- *I believe costs are a true hindrance to scientific publishing today*
- *I worry about the future funding model for journals and how they can keep afloat in an increasingly competitive world in which for-profit companies want to squeeze out journals published by scientific societies.*
- *In principle the public and its representatives should decide how knowledge produced at public institutions becomes available to the public.*
- *It's strange, even though electronic content is cheaper to produce, publishers charge just as much or more for it.*
- *Move all publishing out of the private sector, and back to the learned societies.*
- *My group has moved more and more to publishing only in journals that allow for online open access for zero fee or low fee to authors.*
- *Paying to publish and then paying to access is unacceptable - Knowledge should be accessible to everyone.*
- *Persistent increases in subscription costs are unsustainable and neglect the vast voluntary contributions made by academics.*
- *Professional journals are serving mainly their profit interests, which do not align with the quality of science or fair and democratic scientific communication*
- *Publisher services include: peer review, editorial development, global sales distribution, marketing, publicity, warehousing and fulfillment, promotion via advertising, direct marketing, and conference exhibits, metadata and discovery, and many others.*
- *Publishers need to identify their main customer and establish brand-loyalty. Otherwise, they should all be nonprofits.*
- *Push towards author pays model is misguided. This will stifle innovation.*
- *Scientific publishing houses profit from the work of others. Access to science is limited by paywall. This is not sustainable / acceptable in the 21st century*
- *Scientific publishing today is becoming a business; Research cannot follow the market rules, it is a value for humanity.*
- *Some scientific societies seem to view their publications branch as a cash cow.*
- *Stop charging institutions who pay for subscriptions additional fees for open-access credits on behalf of their researchers.*
- *The authors who secure the funds for the research and do essentially all the work of writing the papers still have to pay for the privilege.*
- *The business plan in the publishing of science is not sustainable and should be rethought from bottom to top.*
- *The copyright should stay with the author, not go to the publisher*
- *The cost for our university libraries is very high, to the point of being unsustainable.*

Analysis and Report of Responses

- *The cost of publishing must be built into the cost of doing the research.*
- *The current model in which academic institutions have to pay for access to content that their own researchers produced and peer-reviewed, to the enormous profits of publishers, is unsustainable.*
- *The high cost of open-access journals is an obstacle to what would otherwise be a desirable (and increasingly mandated) model.*
- *The pay-wall is set high enough to discourage scientists from developing countries to access and gain from the archival content that actually is a legacy of the scientific community across the world*
- *Those who insist on increasing profit margins will probably see substantial cancellations over the next decade.*
- *We shouldn't have to pay nearly so much for access to the literature that we ourselves have generated.*

EDUCATION

- *All courses should include communication assignments that are designed to provide experience targeting different audiences (general public, scientists outside of the discipline, policy makers, scientists inside the discipline). All curricula should include multiple opportunities of increasing complexity in all modes of communication (poster, paper, whitepaper, opinion piece, policy proposal, graphic design, etc.).*
- *Formal courses seem to do no more than cause resentment in the students, particularly if there is no explicit relationship between the language courses and their scientific studies.*
- *I believe communication skills are changing drastically. Young researchers tend not to read full length papers. They find the information they need by Googling around.*
- *I believe preparatory courses on scientific writing should be mandatory in undergraduate courses.*
- *I feel graduate students are unprepared for the 'academic' world in terms of expectation to publish, how difficult it often is to get a publication across the line, how often rejection occurs. This would be very useful to highlight more widely. The importance of writing in general is not fully appreciated at an early stage.*
- *I find that there are few courses targeting how to write scientific papers vs. how to keep a lab journal and simply report the findings in a short protocol.*
- *Involving students with projects that can lead to publications where the student has to use its writing skills.*
- *Isolation of the disciplines is exacerbated by the proliferation of special-topic journals, whose content is not usable by students or researchers in other disciplines.*
- *K-12 education does not appear to give good training in how to write clearly and concisely, which is critical for scientific publishing.*
- *More opportunities for all students to have authentic research experiences so that they can then work on communicating what they did and why.*
- *Myself, my students, and colleagues could benefit from formal instruction on manuscript preparation,*
- *Separate classes should be provided for native and non-native English speakers.*
- *Students' poor grasp of formal language for 'scientific' writing.*
- *Teaching scientific writing skills is I think very important for students, researchers and teachers.*
- *There are currently serious gaps in the preparation of students to use language with precision.*
- *There is insufficient explicit guidance in how to communicate scientific information. Most authors are expected to learn how to prepare a publication or presentation by emulating their seniors. Unfortunately, few of their seniors have had such guidance and themselves produce poor products to emulate. This applies not only to poor language skills, but also to poor organization of ideas and poor graphical representation of information.*
- *the proliferation of journals means that virtually any manuscript can get published, which is why number of publications represents an increasingly poor representation of the quality of a researcher.*
- *It is difficult for people at small institutions to afford broad access to archival publications.*

LIBRARY

- *Decreasing role as a repository for physical materials, but maintaining or increasing in terms of place to access resources and services related to electronic scientific literature*
- *Due to increased cost and increased number of journals, libraries cannot afford subscribing to all of them. Uploading preprints in depositories would be a good way to overcome the challenge*

- *High cost of subscriptions to Libraries limits material that can be provided to users.*
- *I do use the library for books, and sometimes buy a book. Is there any reason to continue printed versions of journals?*
- *I just don't have the time, so I find myself only reading articles written by people whose names I recognize. This puts me in a bubble where I only read papers from a small subset of the research community.*
- *It would be ideal if the library budget shifted from subscription fees to paying author fees, but it's important for all people involved in publishing to understand there will always be, for the foreseeable future, a cost to scholarly publishing.*
- *Learning environments to offer learners [students and faculty] to experiment development/practice, with guidance available to become self-directed independent learners*
- *Libraries do not have the budget to keep up with costs (they increase subscription prices every year; Library budgets tend to stay the same or decrease every year)*
- *Libraries have less and less flexibility in their budgets when a small number of vendors and publishers take large chunks of their funding.*
- *Libraries haven't been 'repositories' for years. We are gateways. Librarians are not gatekeepers; we are guides. It will be a few generations before physical material completely go away, even then, libraries will still be needed to curate and provide access to online content. It is way too expensive for a researcher to purchase everything they need.*
- *Old literature remains difficult to access.*
- *Physical libraries will almost disappear, but they should take up the task of administering the electronic subscriptions.*
- *Retrievable search results, i.e., key words, rather than subject headings, as it can be hard to drill down.*
- *The need for the library as a place will remain about the same but the way the space is utilized will change.*
- *Would like old archive material to be scanned and available online.*

OPEN ACCESS

- *All articles describing research financed by public funds must be open access*
- *All research should be published in open access, not for profit journals. For profit journals disrupt research and make us, the researchers, do all the work while still having to pay for access.*
- *As a librarian, I support open access journals. However, I think there is still much work to be done to lower costs.*
- *Drives by funding bodies to make all outputs open access are premature.*
- *For academic researchers, finding the money to publish in open access formats can be a problem.*
- *I am a strong supporter of open access, but open access fees are often prohibitive.*
- *I would rather that open access journals be abolished entirely. The scientific community was better off before they existed.*
- *In my opinion, the future of publishing involves preprints being made available before publication, double-blind peer review, publication of the manuscript with a comments and questions section at the bottom and freely available open access data in a repository. Plan S.*
- *Online, fee-based OA journals operated by so-called Predatory Publishers are doing serious damage to scientific publishing.*
- *Open access creates unnecessary difficulties for authors and has led to a large number of non-peer reviewed online journals levying page charges to cover open access and advertising unlikely impact factors*
- *Open access may become more and more essential, but costs must remain affordable.*
- *Open access needs to be a default and publishers need to be part of a symbiotic relationship with academia.*
- *Providing better supplementary material is generally consistent with the move to open-access publishing.*
- *The advent of open access is pushing the community so that only well-funded groups can publish in top journals.*
- *The direction should move towards open access rather than gate-keeping for fees.*
- *The drive for open access has been conflated with a desire for free information. A digital, peer reviewed, interlinked, curated, quality assessed, branded body of content requires funds to create*
- *The Open access has opened a tsunami of scam journals, scam conferences.*
- *The publishing system is not healthy, it needs more open access papers and less big corporation monopolies.*
- *The transition to open access is necessary, but as in any change the transition phase is difficult.*
- *There are too many new open access journals, many of which have no academic standing and which constantly harass fill our in-boxes with invitations to publish with them.*

Analysis and Report of Responses

- *We need a consistent approach to open access across all publishers.*
- *We subscribe to the recently somewhat relaxed implementation plan of cOAlition S of the EU, which means a substantial change in the business of scientific publishing.*
- *We work a lot with developing countries that have limited capacity to pay subscriptions and access pay-walled journals so we push for OA in any form, preferably gold.*

PERFORMANCE APPRAISAL

- *Abandoning H-index, journal impact factors and citations would help - but will not happen unless something replaces it, which will then be gamed.*
- *Academia is very broken and it has been led by the driver for metrics in publication.*
- *Appreciate other aspects of the scientific endeavor beyond peer reviewed papers including science communication, teaching experience, etc.*
- *Because quality is harder to measure than quantity, and because most funding agencies do not divide numbers of publications by the number of authors or by the amount of money spent to produce these publications, this greatly inflates the value of quantitative research outputs.*
- *I, myself try to publish in high impact factor journals - the only reason for that is "perceived prestige" that is important for the reviewers of the funding bodies, evaluation committees, etc.*
- *Impact factors are totally crazy. I cannot understand why my research should be assessed as a result of decisions made by editors on papers produced by other authors.*
- *Less importance should be given to the bibliometric indexes and more attention paid to the real scientific relevance and content of the articles.*
- *Manuscripts cascade down the 'food chain' from the more glamorous journals, to which they should never have been submitted in the first place, to more specialist journals.*
- *Measures of excellence could also help relieve the pressure of producing unnecessarily high volumes of work, and move toward a culture of securing funding based on quality of research.*
- *Misidentifying journal impact factor as a mark of quality of the research published within.*
- *Number of publications and citations should not be the major indicator of research performance*
- *People are currently encouraged to publish no matter what. They divide papers up as much as possible.*
- *Publication in prestige journals is taken as a proxy of quality in assessments*
- *Removing impact factor from career impact would also be helpful for authors to match their work to appropriate journals.*
- *Research results should be published in longer "units" again, i.e. instead of cutting research projects in smallest publishable research results.*
- *Scientific publishing is the quest for truth. I would eliminate all aspects of present insane competition in science, terms such as prestigious journals, Impact Factor, quartiles 1 to 4 and similar nonsense.*
- *Self-referential groups game the impact scores.*
- *Stop counting the publication numbers but focus on the article's merits, especially their originality.*
- *Tenure and promotion should be based on quality of contributions over quantity. Incremental and duplicate publishing should be stigmatized.*
- *Tenure and promotion. Quantity of publications is valued over quality. This is why there is too much literature for researchers to keep track of, and why so many poorly designed/analyzed studies exist.*
- *The emphasis on quantity instead of quality is problematic.*
- *The fact that publication (numbers of papers and citations) is such an important factor in academic promotion and tenure decisions has led to a race for the least publishable unit.*
- *The proliferation of journals means that virtually any manuscript can get published, which is why number of publications represents an increasingly poor representation of the quality of a researcher.*
- *The quality of a paper/journal should not be measured by the impact factor, rather by the reproducibility of its results.*
- *The value of a scientist / scientific research must not be mainly judged by the impact factor of the journals chosen to submit the reports.*

- *The value of quantity of publications and impact factor of journals is rated far too high in the evaluation of scientific output, leading to low quality and split publications.*
- *There has to be a rejection of "Impact Factor" as a criterion for evaluation of publications. The Impact Factor has ZERO to do with any given paper. It does not provide any data about a paper's worth, citations, impact, etc. It is merely an advertising tool for some glossy journals that has, unfortunately, captured the imagination of funding agencies.*
- *There is too much pressure to publish many papers in high-impact journal*
- *There should be a better system than impact factor for evaluating a professional journal.*
- *This unfortunate practice distorts the scientific environment, degrades evaluation of scientific performance by the number of their publications and the h-index, and generates the so-called publishing celebrities.*
- *Today's scientific publishing is almost like a pyramid scheme. Focus should be on quality not quantity*
- *Too much emphasis on metrics which distorts publishing behavior*
- *Unweighted citation distribution: e.g. 10 authors receive 100 citations each for a paper cited 100 times. In the world of economics this would have been a joke.*
- *Using scientific publishing to assess performance and progress in your career is not working. We publish for the credits and not for the knowledge.*
- *We need to de-emphasize the importance of impact factor, number of papers, and number of citations. Focus on quality of work only as assessed by peers in the field.*
- *What I find unsatisfactory is the way institutions often judge scientific output with metrics rather than contents.*

PEER REVIEW

- *A system to really reward good peer review and to show what that looks like would be great.*
- *All of the process should be double blind, even the editor should not know which institutions the authors are from.*
- *all reviews should be double-blinded, even at the submission to the editor level,*
- *Anonymity of peer reviewing encourages bad/vindictive peer reviewing.*
- *As a scientific editor of accepted papers, I am finding that a lot of the papers that are coming through are rubbish.*
- *Authors are sharing their research in alternative ways (or being forced to). The next thing will be authors implementing peer review in preprint services or personal websites, and the whole publishing business is over.*
- *Blind submission and peer review would help but is hard to really arrange, as it is usually quite easy to spot the author if you know the field and can be gotten around by pre-circulating preprints.*
- *Decisions often seem to be based on the perceived "sexiness" of the paper, with no real connection to its scientific content.*
- *Double blind peer review should be mandatory for all articles with a time bound review time of 10-15 days.*
- *Double-blind reviews should be standard practice.*
- *Ease of submitting a manuscript has the effect of overwhelming the peer review process.*
- *Editors and journals are pressured to reward staff that will ring the biggest number of bells.*
- *Editors are indifferent to the effort that goes into preparing a manuscript. They often don't read a manuscript with the result that they are unable to make a meaningful decision about the manuscript. The reviewers are often careless or capricious. The editors do nothing to act like a moderating influence over the reviewers.*
- *Editors should get out of the business of denying to send a manuscript for peer review after a quick look at a paper.*
- *Editors spend a lot of time and effort that could have been spent generating their own research outputs. There is a need for greater institutional appreciation and support of this role.*
- *Editors too often take a passive role in the review process.*
- *Encourage open constructive post-publication review/discussion.*
- *Find ways to reward peer reviewers and journal editors for their voluntary work.*
- *Have most manuscripts reviewed before and after publication (full peer review prior; community discussion after).*
- *I also like what some publishers have done about letting referees see each other's reports.*
- *I am a fan of double-blind submission and reviewing; It seems the most appropriate way to remove any bias.*
- *I am invariably asked to evaluate the revised version, which is often not much better than the previously submitted version.*
- *I believe "Double-blinded peer review" is most fair and appropriate method.*

Analysis and Report of Responses

- *I dislike reviewing because I am asked to review so many poorly prepared manuscripts.*
- *I have stopped participating in editorial boards for the journals of for-profit publishing houses and have stopped accepting their review invitations.*
- *I rarely hear debate about the role of academic editors in a role where a small honorarium is received but the work load can be substantial.*
- *I support open review system where the review process is open and subject to challenge on technical grounds. Alternatively, the process can be double-blind. Currently, the openness is one-sided.*
- *I'd like to see a more standardized timeframe for peer review.*
- *If a journal is charging for publications, they should at least pay their reviewers.*
- *If the reviewers are anonymous, let us keep the authors anonymous too, till the decision has been made. I believe this will substantially improve the fairness of the review and allow publications by not so well-known and young investigators to publish in high impact journals.*
- *If the reviewing process rules would be stricter and reviewers would be salaried for this, the quality of the reviews would be higher.*
- *Improve on the quality of the writing, prior to sending it out for review.*
- *In my opinion the costs of peer review should be part of the research budget.*
- *In our world of overwhelming amount of low-quality papers in any field, it should be both advance review and post reviews.*
- *It is evident that some peer reviewers do not take their task seriously or are reviewing outside of their expertise.*
- *It is getting harder for editors to find reviewers for papers - I've seen some terrible and careless reviews, clearly written by someone who was not prepared to take the time and effort needed*
- *Its relevance to the popular market-place should not be the driving criterion for effective research publication.*
- *Many editor colleagues are in it for the honor and because of their name and reputation. Some kind of formal training / evaluation of editorial issues should, however, be mandatory.*
- *Many of us perform this service for free and often on our own time (nights, weekends, days off); please don't waste our time with poor quality papers.*
- *Many top journals are governed by fashion [...] attending to only what seems to be "hot."*
- *More emphasis should be put on the scientific rigor of manuscript rather than just the results.*
- *Most journals provide the facility of suggesting possible reviewers. This leads to authors suggesting reviewers that have a higher chance of accepting their work. And this leads to a situation of 'you scratch my back, I'll scratch yours'.*
- *Need a shorter time from discovery to dissemination.*
- *Occasionally when reviews are poor, editors [should] step in to make a well-informed decision, discounting the poor review.*
- *Offer incentives to reviewers to perform much faster.*
- *Often older, seminal work containing the concepts and ideas for research fields does not get cited.*
- *Often the reviewers ask the authors to cite the reviewers' publications as a condition for acceptance of the manuscript.*
- *Open peer review, where you have to commit to having your views openly available and attributed, would remove perceived bias.*
- *Papers should be evaluated by their merit and no importance should be given to the reputation of the authors and of their institutions.*
- *Peer review has become more a matter of chance than a filter against mediocre work.*
- *Peer review should be blind.*
- *Peer reviewers should get a small stipend.*
- *Perhaps, blind refereeing - when a referee knows neither authors' names nor their institutions - could give unbiased results.*
- *PIs are frequently having their graduate students perform reviews. Strict control over review ownership should be implemented and limitations set on delegation of reviews.*
- *PIs are overburdened with review requests, and increasingly rely on graduate students and postdocs to carry out the review*
- *Post publication review of papers is essential, even if they have been peer reviewed.*

- *Post-publication peer review by a much wider field of researchers would be better.*
- *Preprints of manuscript while under review and at each stage of review should be publicly available.*
- *Pre-publication peer review is hit and miss in quality and driven by many factors beyond simple quality of the work and a desire to constructively criticize it.*
- *Pre-review editorial filter is becoming too strong*
- *Publication may be delayed because of a lack of available reviewers.*
- *Publication of peer reviews after the paper has appeared seems like an excellent idea to me.*
- *Publish reviewer comments on line along with the paper.*
- *Published scientific literature may receive comments on line and the authors may be able to answer.*
- *Push for transparency in the peer review process, perhaps by the publishing of the review reports post acceptance.*
- *Reviewers are asked to judge the impact of the paper, a very arbitrary and fortune telling-like exercise - less focus on impact and more on the scientific quality.*
- *Reviewers must know and admit their own biases and weaknesses.*
- *Reviewers should be paid and policed by editors.*
- *Reviewers should receive a financial compensation for delivering a review.*
- *Reviewing is not rewarded to the degree that publishing research is.*
- *Reviews should always be double-blind*
- *Reviews should be double-blind and manuscripts should undergo more rigorous preliminary screening by the journal before it is sent out for peer review.*
- *Reviews which are only a few lines long and provide little justification should be disregarded by editors.*
- *Sample preparation is often taken as "second class science". This is one of the most difficult parts of the scientific knowledge, and crucial to understand the physical phenomena.*
- *Scarcity of expert reviewers.*
- *Scientific issues can get overlooked because the reviewers are distracted by the other shortcomings.*
- *Should not allow statements such as "not of broad enough interest" to be involved in the decision regarding publications.*
- *The editors should not take the reviewer's opinion on faith without reading the article. We need reviewers who take the review process seriously.*
- *The English language in many of these journals is extremely poor and incomprehensible which signifies that they are not peer reviewed properly.*
- *The entire system needs to be torn down and replaced with something better, faster, and less based upon the system of control called peer review. Everything should be post-published peer-reviewed.*
- *The majority of reviewers do not consider the importance of the unsuccessful results to direct future researches*
- *The peer review process needs to be something more than just a quick rubber stamp.*
- *The problem is how to identify or educate peer reviewers to do a top-notch job?*
- *The review process would be greatly improved if it were open and not secretive, with back and forth allowed between reviewers and authors*
- *The review process, while in theory produces the best publications, is not incentivized. It is harder to find reviewers which slows down the review process.*
- *There can be substantial unconscious bias when it comes to the peer review process*
- *There is too much emphasis on perceived potential impact of the research rather than judging the quality of the science.*
- *There should be a minimum level of feedback from journals which indicates specifically why a manuscript is being rejected, e.g., technical limitations, writing, lack of data, poor hypothesis, poor interpretation etc.*
- *There should be more incentive to increase the commitment of reviewers to reviewing, to ensure they are more serious and careful in their review.*
- *To encourage scientists to take the time to review articles, we need to find a reward system.*
- *Too many journals provide inadequate time for review.*

Analysis and Report of Responses

- *We have to reduce the burdens associated with peer review*
- *With internet capacity, it may be time to make referees' comments available to readers while still keeping their identities confidential.*
- *Would like to see a system for rating the quality of reviews by editors.*

PUBLISHER

- *A single format for supplying the text, figures, supplemental data etc. Now you often need to substantially reorganize a manuscript to submit to a different journal.*
- *Accept the important role of copyeditors in manuscript preparation.*
- *Authors should be able to freely have their published works on their own websites without reprisal from publishers.*
- *Better help and/or preparation of authors for conforming to a particular journal's format and style.*
- *Commercial publishers make profits that are not compatible with aims of the sharing of scientific knowledge and discovery and charge fees at too many points in the process. A greater, wider commitment to Open access publishing would be a considerable step forward.*
- *Creative Commons is thought to be a panacea but is not and the label translates to "oh its free" for most users.*
- *Hard copy production should be in decline to the point of elimination given the almost 100% choice nowadays of online journal access.*
- *I am not sure how sustainable open access is for a learned scientific society which does not generate public funds.*
- *I would like to see publishers look for ways to standardize terms and conditions contained in copyright transfer agreements.*
- *It would be helpful if authors could submit their articles in a standard format for every article.*
- *Journals are dinosaurs. They are a remnant of an era when information could be controlled and sold. In a world with instant information distribution via the internet they are no longer needed.*
- *Journals should share one uniform and universal format for submitted manuscripts.*
- *Overcome the "Impact Factor dictatorship" and return to evaluation of the real value and importance of scientific results and publications.*
- *Print journals are wasting resources trying to preserve an obviously obsolete medium (paper).*
- *Publishing has real costs; highly selective journals and those that employ science writers and editors to create content to put research into context and to communicate it broadly have even higher costs. Diversified revenue streams have proven to be sustainable rather than relying only on those authors who have enough funding to pay APC fees to publish. Continuing the hybrid open access model would allow the scientific community to decide how many authors can afford to pay for access, up to the tipping point where it becomes clear that it is time to flip to a fully open access model.*
- *Scientific publishing needs a complete overhaul.*
- *Systems like ArXiv.org should be in place for all scientific work.*
- *The journal business is a huge embarrassment to the world of science and should be entirely restructured as soon as possible. Priority should be given to open access and to quality of content.*
- *The scope of many journals is too vague. Perhaps a portal where manuscripts are scanned for content and a list of relevant publication is presented to the authors would help better target the right journals for submission.*
- *University presses deliver a host of valuable services to authors but our business model is under severe pressure.*
- *Using forever copyrights by publishers is damaging not only for researchers but also the publishers themselves.*
- *We need publishing from the scientific community for the scientific community via the Learned Societies.*

QUALITY

- *A system in which rejected papers would go to a central information depository and re-submission to other journals would require them being informed of the history of the paper including the reviews which led to rejection*
- *Allow readers to comment and ask questions. In the electronic age, a scientific paper should be a "living" resource, not something that is cast in stone for eternity*
- *As a scientist, I know how to recognize predatory journals and publishers, but the public won't be able to do that.*
- *Better understanding not just of what has worked, but also what does not.*
- *Citation of previous work is often inadequate*

- *Clearly, predatory publishing has become a major brand for publishers.*
- *Currently authors seek high impact factor journals whether or not their work meets the standards.*
- *Expectations from some journals for "sexy factor" as opposed to strictly scientific merit.*
- *Findings typically only become trustworthy as other researchers test, correct, and build upon them.*
- *High quality learned journals edited by active scientists is the key to fairness and rigor.*
- *High quality specialist journals in small disciplines have inherently low impact factors, but are critical to scientific progress in their fields.*
- *How to make it easier to identify a predatory publisher.*
- *I am disappointed at the metastasis of journals, which makes it very difficult to keep up, and with the apparent inability of the scientific community to restrain the proliferation of extremely low-quality start-up publications.*
- *I think the scientific community should shift its culture towards publication of both positive and negative results - be it in technology building or more fundamental scientific research.*
- *If this is a letter you have to try to explain everything in a concise but still understandable form. Otherwise write a long article.*
- *I'm not sure what would work best but the current system is beyond broken.*
- *Impact factor of journal should be considered less important, otherwise editors are forced to publish what will be cited most and prefer it to what has higher scientific value.*
- *In general, the level of disclosure of detail in literature reports is much poorer, nowadays.*
- *In some cases, some negative results can be very useful to avoid repetition of experiments, or even to better understand a theory, process, etc. I think it would be very helpful for researchers to read sometimes works that did not work, but that can lead to new questions that might advance knowledge in a specific field of research.*
- *It could be that the general proliferation of readily available information online, the vast majority of which is unsubstantiated and unreferenced, sets a mindset amongst newer researchers for publishing in a similar vein, i.e., volume or number, not quality or depth.*
- *It has become common practice to dump enormous amounts of materials into Supporting Information.*
- *It is very difficult to publish negative results.*
- *It's the content that matters.*
- *Junk science is being published*
- *Low or no credit for reproduction of experiments.*
- *Low-quality research gets published in newer journals.*
- *Many high-impact journals support fancy articles instead of solid interesting work.*
- *More interest is needed in publishing studies with negative results or those confirming a previous study.*
- *More reports on negative or "insignificant" findings should be published.*
- *Negative findings should be just as encouraged to be published.*
- *Now, only the "good news" is accepted for publication. It would be more scientific to also allow the less popular "bad news" or repeated experiments to be published to get a less biased and more corroborated view on reality*
- *One terrible result is the growth in number of predatory publishers and journals.*
- *Our industrial research agenda is partly dictated by the predicted prestige of publishing results in a high impact factor journal, whether or not the topic is critically linked to our technology business.*
- *Papers that report research that did not work should be promoted.*
- *public is increasingly aware of the fact that many scientific results are often overstated*
- *Publishers publish a huge amount of material but much goes unused and unread.*
- *Repetitive measurements and validations (of the same thing by different people in different settings) are important and necessary, but this contradicts that journals want unique data.*
- *Scientific research is increasingly influenced by the trend of quick and dirty publications, easy fame, future positions, grants, and awards.*
- *Single-author papers used to be the norm a century ago and are now a rarity.*

Analysis and Report of Responses

- *Some journals add substantial value and curate an excellent range of reports*
- *The current problem of too much importance to impact factors and too many predatory journals is of our own making.*
- *The entire system is unnecessary and a throwback to pre-internet times*
- *The interplay of digital publishing and paper publishing is rapidly changing, and I see many new and good things coming out of this; if only we could raise the quality bar.*
- *The JIF [journal impact factor] arms race results in inappropriate behaviors by publishers and editors.*
- *The number of publications per researcher, per day, per journal is too large.*
- *The old "volume / issue" system is totally outdated and should be dropped.*
- *The onus is now firmly on the reader and user of the research to make critical assessment of work for themselves (buyer beware!)*
- *The practice of having "grave-yard" journals is very wrong and we, as a community, should get rid of these.*
- *The prevalence of predatory journals is a growing problem*
- *The problems are complicated by the ability of the authors to reference other articles in the literature that should not have been published, but support their viewpoint.*
- *The proliferation of journals leads to more being published but less being read.*
- *The quality of scientific publications has gone rapidly downhill over the last two decades or so.*
- *The race for novelty makes no sense.*
- *The race to publication discourages the presentation of more comprehensive syntheses of topics*
- *The seminal works are often neglected and recent routine papers or minor reviews are cited in detriment of original, ground breaking publications.*
- *There are many dubious journals that publish work of negligible academic merit*
- *There are too many journals and too many articles. It would be better to have fewer, carefully thought-through, well-written articles that move the field forward.*
- *There has recently been a proliferation of for-profit journals that seem to have essentially no standards whatsoever. I worry others, including junior scientists, reporters, and the public, may be tricked into thinking these operations are legitimate. I fear this dilution of real scientific journals with junk represents a serious threat to scientific publishing.*
- *There is a huge need for review articles and those with perspective; however, there is no incentive to write such an article.*
- *There is a vast growing quantity of on-line, minimal review, pay to publish journals that are growing because they can be profitable to publishers.*
- *There is not enough value and possibility to publish given to negative results and reproduction of published data.*
- *There is too much low-quality work being published, and reading the literature is frustrating and a waste of time.*
- *There needs to be a more efficient process through which the community can express its opinion on the worth of a piece of work. Enabling comments on ArXiv could be a starting point. Journals also need to allow comments on their portals. Why are we afraid of using these technologies?*
- *There needs to be an acceptance for publishing studies focused on reproducing results (with some limited additional work), as well as publications of null or negative results.*
- *There should be some way to punish or eliminate the massive numbers of predatory open access journals that have sprung up.*
- *These journals are bad for science and for scientists.*
- *Too many papers are being submitted for publication that have too many authors (>5) and only report incremental progress in the science.*
- *Too many papers are published with insufficient information to permit attempted replication, and insufficient data to buttress validity.*
- *With the proliferation of online journals, it is too easy to publish manuscripts that are deficient in some way.*

IUMRS SURVEY ON THE
EVOLUTION OF SCIENTIFIC PUBLISHING

