



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/>

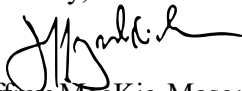
²⁰ Efficiency and Standards for Article Charges. (n.d.). *Agreement registry*. <https://esac-initiative.org/about/transformative-agreements/agreement-registry/>

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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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/>