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STM Response to Request for Information: NASA Public Access Plan for Increasing Access to the Results of NASA-Supported Research (88 FR 31827)

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About STM

At STM we support our members in their mission to advance trusted research worldwide. Our more than 140 members collectively publish 66% of all journal articles and tens of thousands of monographs and reference works. 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. We promote 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, we provide data and

analysis for all involved in the global activity of research.

The majority of our members are small businesses and not-for-profit organizations, who represent tens of thousands of publishing employees, editors, reviewers, researchers, authors, readers, and other professionals across the United States and world who regularly contribute to the advancement of science, learning, culture and innovation throughout the nation. 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 stands for advancing open and trusted research, where researchers and the rest of society can rely on information that is credible, accessible, linked, and searchable in perpetuity. We therefore share with NASA the goal of increasing access to publications and data, not just for federally funded research, but for all research. Publishers have led and responded to the interest in open science by investing heavily in open science over the past 25 years, broadening and expanding the public's ability access and understand the work of scientists and scholars. Many of the products and services necessary for open science were created and maintained by publishers, including online infrastructure, preprinting, archiving, linking, and data management, and we continue to support and grow those efforts today. Our members have also invested in new models and approaches to providing access, including experimentation with a variety of business models without compromising on quality and integrity, and supporting sustainability and equity.

As a participant in the Year of Open Science, we welcome the opportunity to comment on NASA's Public Access Plan dated February 21, 2023 ("the Plan"), in the spirit of our support for open science¹ and the integrity of the scholarly record. The following response comments on specific aspects of NASA's plan where publishers can offer support and where additional clarification to the Plan may be helpful to the research community. As the RFI limits responses to 4 pages, and the questions raised are substantially similar to those raised by NIH's RFI earlier this year, we refer NASA to STM's response to the NIH RFI² for insight on questions 1-4. We also refer NASA to comments that STM made on SPD-41a.³

General principles

STM supports the articulation of objectives on page 3 and the principles on page 4, particularly NASA's goals of supporting open science to accelerate discovery and innovation, promote the application of discoveries to technology and the public good, and protect the integrity of science. We also agree that intellectual property is a key right to be recognized and appropriately protected. In these protections, a key distinction needs to be made between research data and works available under copyright, particularly publications. To this end, a definition for publications within the glossary may be helpful.

As NASA works to ensure research integrity, open science, and the preservation of a quality scholarly record, it is key to note that these all depend on a sustainable and well-functioning publisher ecosystem. The most important action that NASA can take to ensure the utility of open science is to support and encourage approaches that ensure publishers, which include scholarly societies, university presses, and commercial entities, can continue to invest and innovate in the quality, integrity, accessibility and discoverability of research.

Finally, we support and share NASA's ambition to build a high-quality, sustainable, and accurate open science future. NASA in several places refers to goals to provide "open access" (as opposed to "public access") to data, publications, and software. As long as clear and consistent funding, guidance, and education supports the effort, STM encourages NASA to pursue fully-funded open access as the best route to achieve the public access goals articulated in the Plan and the August 2022 OSTP memo.

Research Data - implementation

Publishers are partners with researchers in making reports and data related to their research available and FAIR. We appreciate many of the Plan's provisions on research data, including statements that flexibility will be provided to allow for different community practices, that community-based standards for data sharing should be used where possible, and that digital object identifiers (DOI) should be required

to enable linking, discoverability, and permanence. We also agree that guidance and training in best practices for data sharing is needed and support the TOPS initiative for open science education.⁴

STM also agrees that, in addition to the data management plan, publications should indicate how data can be accessed. We have been working with our members and other publishers via our Research Data Program⁵ to support the use of clear, transparent data availability statements, and hope that we can collaborate with NASA and other funders to enhance research data sharing practices.⁶

Research Data - costs

STM appreciates NASA's acknowledgement that open science practices, including data management and sharing, may require additional expenditure by grantees and that guidance will explicitly state that the costs of data may be included in grant proposals. We encourage NASA to go further by requiring budgets to include, and review panels and program administrators to evaluate budgets for, appropriate and full support for the costs of all open science practices (data management and sharing of data, publications, and software) as NIH currently does for data.⁷

A key requirement for promoting access is adequate funding to support the development of tools and outlets for data sharing, research methods, and other outputs related to research, including publications. Studies have demonstrated the significant costs involved in enabling open science and the many new research related activities, access, and functionalities that open science entails. For example, research has shown⁸ that resources beyond those currently allocated to universities will be necessary for a transition to open access for publications. The costs of supporting open scholarship when it comes to data, code, and software are likely even larger. Alongside funding for infrastructure and publication of articles and data, investments will be needed in training and support for skills needed to tag, curate, and share these outputs. These could be at least partially mitigated by supporting the use of existing infrastructure and investments and harnessing efficiencies in the systems for open science offered by publishers.

Publications – scope

STM notes that researchers funded by NASA may author or co-author peer-reviewed scientific research publications unrelated to their NASA-supported research. It is probably not the intention of NASA to have requirements in the public access plan apply to these unrelated publications but, as written, the Plan seems to suggest that all publications by any author receiving NASA-appropriated funds would be in scope. We recommend that the scope only include articles reporting on NASA-funded research and note that funding to support publication is the best way to ensure access to such articles whose publication is otherwise not necessarily supported by the grant.

STM appreciates that in the scope, and elsewhere in the document, NASA acknowledges that there are important intellectual property considerations for publications, including noting under “acceptable use policies” in section 5.0 on implementation that permission must be obtained from copyright holders for further use of articles. STM and its members are keenly interested in discussing with NASA any copyright licenses that might be incorporated into awards, as discussed further in the section on “publications – licenses.” STM supports NASA's efforts to achieve open science goals while respecting copyright and its role in supporting the quality and integrity of the scholarly record.

Publications - costs

STM appreciates that NASA intends to continue to allow the costs of publishing to be included in grant

proposals, especially the assertion that “NASA intends for researchers to pay reasonable costs to publish an article as open access, and that grant proceeds may be used for such purposes.” At the same time, efforts will need to be made to ensure this intention is communicated throughout the process of proposal submission and award implementation. Simply allowing costs to be included is not sufficient. Reliable funding needs to be made available to the researcher and their research institution, together with appropriate and enduring support and guidance on the use of funds and the options for providing access. In order to ensure equity for all researchers, such funding and guidance needs to be provided clearly and consistently for all NASA-funded researchers, and in a manner that ensures author choice for whatever journals they choose to advance their research and impact. This funding also needs to be provided on an equal basis so that researchers who choose to publish in journals that are supported by article publishing charges (APCs) are not disadvantaged in the resources available for their research, student support, and other critical needs.

We applaud the policy of the Science Mission Directorate in SPD-41a to encourage open access publication, where the Version of Record (VoR) can be made available to the public, fully supported and preserved for the long term. The VoR is the authoritative version for researchers and the public, and it is more cited, used, and garners more attention than other versions of an article.⁹ As noted in our comments in response to the RFI on SPD-41a,¹⁰ provision of guidance, encouragement, and appropriate and enduring support for open access publishing will assist NASA in achieving its open science goals, providing clarity for readers, and helping to safeguard trust in research.

Current global efforts to expand open access indicate that direct support for publishing (which includes APC-supported open access, Read and Publish Agreements, and other evolving models) provides the most sustainable path to open access.¹¹ Immediate access to a version of the article funded under subscription models has not proven to work at scale, even if it may temporarily work for some publishers or disciplines, or as a transitional model. While efforts to provide immediate access to articles funded by subscription journal publishers appear cost free to the researcher and funder, they are reliant on subscriptions to support the significant investments publishers make that ensure the quality, integrity, discoverability and accessibility of research in perpetuity. Subscription-supported investments include effectively managing the editorial and peer review processes and applying innovative technology to validate the rigor of the research we publish. Subscriptions are put at risk by the immediate availability of a large body of free accepted manuscripts, as demonstrated by widely used resources, such as Unsub.org, that encourage institutions to cancel subscriptions for materials that can be freely accessed. Nor is immediate access to articles funded by subscription journal publishers cost-free for funders and institutions, as it causes additional, and duplicative, costs for the dissemination and long-term curation of research outcomes. Without sustainable funding – for a diversity of models for access -- fewer resources are available to ensure the quality and integrity of the scientific record, undermining the ability of scholarly communication to support public trust in science and resulting in a dampening effect on innovation, job growth, and scientific progress. New barriers to access could also be created if important journals that serve critical research communities cease publication.

Publications - licensing

The Plan suggests conflicting approaches to copyright, in some places appropriately suggesting that respect for copyright is important while at other points insisting that researchers relinquish their right to determine downstream uses of the articles they write. Reuse of the information in an article requires no specific rights, as a purpose of publication is to ensure that the ideas in an article can be reused to develop

new discoveries and innovations. However, copyright holders should be allowed, if they choose, to retain their exclusive rights to approve future uses (e.g., reproduction, adaptation (modification), or communication to the public (redistribution)) of the unique expression of ideas in the article, as suggested in the “acceptable use” bullet of the implementation section. Flexibility in licensing options is key to ensuring equity and academic freedom, allowing researchers to publish their articles under licenses and through agreements that meet their individual needs and preferences.

The Plan indicates that additional copyright licensing requirements may be included in future award agreements. We urge NASA to focus only on requirements necessary to achieve the articulated open science goals of sharing articles with the public. Requiring that researchers obtain additional rights risks creating inequities in publication opportunities for NASA-supported investigators, particularly in conjunction with an immediate access requirement. This is because some journals will need exclusive rights to support sustainable business models and continue investments needed for quality, preservation, discoverability, innovation, and impact. These risks can be mitigated by ensuring there is sufficient and enduring funding for open access, which also can support the ability of researchers to share articles with the licensing option of their choice.

STM would welcome additional conversations with NASA about any potential licensing requirements to ensure that they are tailored to support NASA’s goals in the Plan while minimizing provisions that undermine copyright law or have unintended consequences on authors/researchers or on the scholarly communications ecosystem. NASA’s policy should promote academic freedom by allowing authors to publish in whatever journals, and under licenses, that the authors feel will best advance their research and impact. This should include allowing copyright transfer or specific forms of licensing that enable authors to approve (or disapprove) commercial reuse or the creation of derivative works.

In this context, we are concerned that “NASA intends for NTRS to accommodate bulk downloads for research purposes and for creation of derivative products and/or commercial purposes.” On an initial reading, this language seems to reach beyond the purpose of public access and would create commercial competition with the products that our members make available. Overly prescriptive licensing requirements could also undermine the viability of any journals not supported by direct funding, thereby limiting author choice and reducing bibliodiversity.

Software

STM supports the Plan’s provisions requiring a Software Management Plan, analogous to the Data Management Plan. It may be helpful to clarify, as the Plan does for data, NASA’s understanding that software management practices vary across and within scientific disciplines, and that flexibility must be allowed with respect to software sharing. It may also be worthwhile to note, as the Plan does for data, that assigning digital object identifiers is a necessary, but not sufficient condition for sharing and long-term preservation; the use of appropriate, curated repositories is also important.

Consultation

We appreciate that the sections on digital scientific data and software mention the importance of stakeholder and public involvement. It would be helpful if the publications section also indicate that training and guidance will be developed in a transparent manner with views from stakeholders. As publishers are a key stakeholder enabling open science and the sharing of reports and data from NASA-funded research, publishers should also be included in the list of named stakeholders.

Appendix: Notes, References, and Links

- ¹ See, for example, STM’s statement of support for open access (<https://www.stm-assoc.org/stm-oa-position/>, retrieved August 4, 2023), and our research data program (<https://www.stm-assoc.org/research-data-program/>, retrieved August 4, 2023).
- ² STM response to Request for Information on the NIH Plan to Enhance Public Access to the Results of NIH-Supported Research (NOT-OD-23-091), April 24, 2023 <https://www.stm-assoc.org/wp-content/uploads/STM-submission-to-NIH-public-access-RFI-2023.pdf>. Also see STM response to Request for Public Comments on a DRAFT NIH Policy for Data Management and Sharing and Supplemental DRAFT Guidance, January 10, 2020 https://www.stm-assoc.org/wp-content/uploads/2020_01_10_STM_Response_to_Request_for_Information_on_NIH_draft_data_management_and_sharing_policy-1.pdf.
- ³ “Scholarly Publishers Seek to Support Federal Open Science through Collaboration Response to RFI: Implementation and Changes to Science Policy Document (SPD)-41: Science Information Policy.” March 4, 2022, https://www.stm-assoc.org/wp-content/uploads/2022_03_13_STM_response_NASA_SPD41_final-1.pdf
- ⁴ STM has been a regular participant in TOPS events. We would welcome additional opportunities to collaborate and enhance NASA’s education efforts.
- ⁵ More on the STM Research Data Program is available at <https://www.stm-assoc.org/research-data-program/>.
- ⁶ See <https://www.stm-researchdata.org/data-availability-statements-tips/#DASsamples> for our template statements, which are based on the [Belmont Forum’s DAS template](#). It was designed by a combined group of funder and publisher representatives, ratified in October 2018 and is available through a CC-BY 4.0 license.
- ⁷ NIH application instructions include a requirement that costs for open science, specifically to support a data management and sharing plan, must be explicitly noted on the budget form (see <https://grants.nih.gov/grants/guide/notice-files/NOT-OD-23-161.html>). We encourage NASA and other agencies to do the same for all public access and open science activities.
- ⁸ Smith, M.; Anderson, I.; Bjork, B.; McCabe, M.; Solomon, D.; Tananbaum, G., et al. (2016). Pay It Forward: Investigating a Sustainable Model of Open Access Article Processing Charges for Large North American Research Institutions [Final Report]. UC Office of the President: University of California Systemwide Libraries (<https://escholarship.org/uc/item/8326n305>, accessed August 7, 2023).
- ⁹ Researchers prefer the Version of Record, as found in various surveys, including a 2020 survey by Springer Nature, “Exploring researcher preference for the version of record” (<https://www.springernature.com/gp/open-research/version-of-record>, accessed August 4, 2023).
- ¹⁰ “Scholarly Publishers Seek to Support Federal Open Science through Collaboration Response to RFI: Implementation and Changes to Science Policy Document (SPD)-41: Science Information Policy.” March 4, 2022, https://www.stm-assoc.org/wp-content/uploads/2022_03_13_STM_response_NASA_SPD41_final-1.pdf
- ¹¹ STM’s Open Access Dashboard provides information on the growth of open access and various types and funding models, including Read and Publish and other pooled funding arrangements <https://www.stm-assoc.org/oa-dashboard/>.