NIST Internal Report
NIST IR 8084e2023

The NIST Plan for Providing Public Access to Results of Federally Funded Research

2023 edition

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Abstract

In 2013 White House Office of Science and Technology Policy (OSTP) issued a memo, "Increasing Access to the Results of Federally Funded Scientific Research." In response, the National Institute of Standards and Technology (NIST) developed a public access plan and published a compilation of input received when the plan was posted for comment. NIST policy and associated directives were developed from the plan, and NIST has been operating under that policy since 2015.

In 2022, OSTP issued another memo, "Ensuring Immediate, Free, and Equitable Access to Federally Funded Research." NIST has expanded the original plan to include requirements of this new memo. The plan was posted for public comment, with the comment period ending on August 14, 2023. This document is a collection of the plan, the Federal Register Notice, and comments received. Comments will inform the policy and associated directives that are being developed from the revised plan.

Keywords

Office of Science and Technology Policy; OSTP; open access to research; public access; public access plan; research results.

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1. Preface

In February 2013 the White House Office of Science and Technology Policy (OSTP) issued a memorandum requiring federal agencies to develop a plan for "Increasing Access to the Results of Federally Funded Scientific Research."[1] NIST's plan was developed, approved by OSTP and OMB, posted for public comment, and implemented through a series of directives. NIST has been operating under NIST Policy 5700.00 Managing Public Access to the Results of Federally Funded Research since 2015.[2]

In August 2022, OSTP issued a new memorandum, "Ensuring Immediate, Free, and Equitable Access to Federally Funded Research,"[3] requiring agencies to update their public access plans. NIST's plan was updated, approved by OSTP and OMB, and posted for public comment on July 30, 2023. This report serves as the historical record of documents as originally approved and the public comment received in response to a Federal Register Notice.[4]

2. NIST Plan for Providing Public Access to the Results of Federally Funded Research – Draft for Public Comment as Posted June 30, 2023

2.1. PURPOSE

NIST's mission is to promote U.S. innovation and industrial competitiveness by advancing measurement science, standards, and technology in ways that enhance economic security and improve our quality of life. This can be accomplished in part through publishing research results.

This document updates NIST's 2014[5] plan to enable public access to the results of research funded wholly or in part by NIST; updates to NIST's Public Access Policy will be informed by this Public Access Plan.

NIST's Public Access Plan promotes the following objectives:

- Reaffirm NIST's commitment to providing free public access to scientific research results in formats that allow for machine-readability and enable broad accessibility through assistive devices.
- Support governance of and best practices for managing peer-reviewed scholarly publications and digital scientific data across NIST.
- Ensure effective access to and reliable preservation of NIST peer-reviewed scholarly publications and digital scientific data for use in research, development, education, and scientific discovery by depositing them in appropriate repositories, including data repositories that align with the Office of Science and Technology Policy's (OSTP's) guidance on "Desirable Characteristics of Data Repositories for Federally Funded Research."[6]

[1] https://www.whitehouse.gov/sites/default/files/microsites/ostp/ostp_public_access_memo_2013.pdf
[2] https://www.nist.gov/system/files/documents/2018/06/19/final_p_5700.pdf
[3] https://www.whitehouse.gov/wp-content/uploads/2022/08/08-2022-OSTP-Public-access-Memo.pdf
[4] https://www.federalregister.gov/documents/2023/06/30/2023-13866/draft-plan-for-providing-public-access-to-the-results-of-federally-funded-research
[5] http://dx.doi.org/10.6028/NIST.IR.8084
[6] https://www.whitehouse.gov/wp-content/uploads/2022/05/05-2022-Desirable-Characteristics-of-Data-Repositories.pdf

- Enhance innovation and competitiveness by maximizing the potential to create new business opportunities.

2.2. SCOPE

The NIST Public Access Plan applies to the results of research funded wholly or in part by NIST, presented in peer-reviewed scholarly publications including book chapters and peer-reviewed conference proceedings as appropriate, and "scientific data" as defined in the OSTP memo as "the recorded factual material commonly accepted in the scientific community as of sufficient quality to validate and replicate research findings. Such scientific data do not include laboratory notebooks, preliminary analyses, case report forms, drafts of scientific papers, plans for future research, peer-reviews, communications with colleagues, or physical objects and materials, such as laboratory specimens, artifacts, or field notes."

The NIST Public Access Plan does not apply to public release of trade secrets, commercial information, or other materials necessary to be held confidential by a researcher until they are published, or similar information that is protected under law; and personnel and medical information and similar information the disclosure of which would constitute a clearly unwarranted invasion of personal privacy.

NIST will protect confidentiality and personal privacy and will recognize proprietary interests, business confidential information, and intellectual property rights, avoiding significant negative impact on intellectual property rights, innovation, and U.S. competitiveness.

Implementation of NIST's Public Access Plan is prospective and does not apply to NIST peer-reviewed scholarly publications written and datasets generated prior to 2015, when NIST's original Public Access Policy took effect. Scholarly publications and research data published between 2015 and the effective date of this revised policy resulting from the OSTP memo of 2022 will be available within constraints of NIST's 2015 policy. The new Public Access Policy will be available by December 31, 2024 and effective no later than December 31, 2025. However, NIST will continue to endeavor to make legacy publications and associated metadata publicly available and ensure their preservation.

2.3. APPLICABILITY

The NIST Public Access Plan applies to the following groups:

- All NIST employees who publish peer-reviewed scholarly material and generate/collect data as part of their employment, including full- and part-time employees, temporary government employees, and special government employees;
- Awardees from non-NIST organizations that publish peer-reviewed scholarly material and generate/collect data through activities funded wholly or in part by NIST through a grant, cooperative agreement, contract, or other agreement. This includes but is not limited to states, localities, regulated parties, non-profit and volunteer organizations, contractors, cooperative agreement holders, grantees, cooperating Federal agencies, intergovernmental organizations, universities, and other educational institutions. For

activities funded by multiple sources with differing public access requirements, the provisions of this plan will apply unless otherwise specified by NIST in its funding documents.

2.4. REQUIREMENTS

To the extent feasible and consistent with any legal, privacy, ethical, technical, intellectual property, or security limitations, including national security,[7] NIST intends to make freely available to the public, in publicly accessible repositories, all peer-reviewed scholarly publications and associated data arising from unclassified research and programs funded wholly or in part by NIST.

Subject to the same conditions and constraints listed above and/or any other potential restrictions or limitations on data access, use, and disclosure, including those defined in terms and conditions of funding agreement or award, or that convey from a data use agreement or stipulations of an Institutional Review Board, NIST will also promote the deposit of scientific data arising from unclassified research and programs, funded wholly or in part by NIST, to make it available free of charge unless otherwise exempt, in publicly accessible repositories, simultaneously with or prior to publication of associated manuscripts. Other federally funded scientific data that is not associated with peer-reviewed scholarly publications but is expected to be useful to interested parties is similarly shared. Metadata associated with data is publicly accessible and reusable.

Federal researchers must follow federal laws and OMB policies that govern federal agencies' information management practices and protect certain types of data,[7] to the extent that the scientific data created by, collected by, under the control or direction of, or maintained by the federal researchers is subject to those laws and policies. Some data may be shareable with a subset of the general public. To maximize appropriate sharing of data, systems will permit restricted public access to some data.

Publicly accessible versions of narrative and data publications will be machine-readable and accessible through assistive devices to the extent possible. Publicly available metadata associated with both narrative and data publications, intramural and extramural, will include all author and co-author names, affiliations, sources of funding, date of publication, and unique persistent identifiers (PIDs) for all authors, institutions/organizations, funders, and research outputs as available. Metadata associated with publications will be publicly accessible and reusable.

[7] For instance, the Paperwork Reduction Act, E-Government Act, Freedom of Information Act, Federal Information Security Management Act, Privacy Act, Health Information Technology for Economic and Clinical Health Act, Information Quality Act, Foundations for Evidence-Based Policymaking Act, Confidential Information Protection and Statistical Efficiency Act, Federal Policy for the Protection of Human Subjects, Federal Records Act, OMB guidance under OMB M-13-13 and subsequent open data policies (e.g., those to be promulgated under the OPEN Government Data Act and Pub. L. No. 115-435), OMB Circular A-130, and other laws and policies that require federal agencies to protect trade secrets, confidential commercial information, personally identifiable information, and other information that is protected under law or policy.

Capabilities of NIST systems to store PIDs will evolve over time; currently NIST staff are required to obtain and use an ORCID, and our IT systems collect these as well as digital object identifiers (DOIs) for published data, code, and papers. NIST mints DOIs for data and code stored in NIST repositories.

Data/works created by NIST employees that are not covered by the Standard Reference Data Act are subject to 17 U.S.C. §105 and generally are not subject to copyright protection within the United States. NIST data or other works may be subject to copyright protection in foreign countries. NIST may also obtain and hold copyright in data/works created by non-NIST employees (e.g., NIST contractors) when copyright is assigned to NIST. Additional information about fair use and re-use of data and software is provided on the NIST website.

All proposals or plans for activities that will generate scientific data using NIST funding are required to (1) adhere to a Data Management Plan (DMP) that describes how scientific data generated through the course of the proposed work will be shared and preserved or (2) explain why data sharing and/or preservation are not within the scope of this plan.

NIST supervisors are required to ensure staff compliance with the requirements of DMPs, including those for preservation and discoverability. NIST supervisors ensure that DMPs are considered in the context of employees' performance plans and evaluations. Non-compliance with requirements by staff may have performance-review consequences.

Authors of peer-reviewed scholarly publications are required to submit to the NIST public access repository, PubMed Central (PMC), the author's accepted version of a final peer-reviewed manuscript within the scope of this plan as soon as the manuscript is accepted for publication along with any associated metadata. In lieu of the author's accepted version of the final peer-reviewed manuscript, NIST will also accept the final published article, as formatted by the journal, provided the author is permitted to share the formatted version per publisher policies.

NIST's plan further requires that the final manuscript, which has been peer-reviewed and accepted for publication (i.e., the author's accepted version), be freely available to the public through PMC immediately upon publication if law allows and no later than 12 months following publication if publisher policies permit. Immediate availability is dependent upon (1) whether a manuscript is published in an open access journal or through paid open access, (2) whether the content of the manuscript is not subject to copyright, (3) and whether any co-author(s) can claim copyright and has transferred that copyright to a manuscript's publisher. NIST will study 2 CFR §200.315 Intangible Property and FAR 52.227 Rights in Data to determine conditions under which awardees can deposit author manuscripts in institutional repositories. Terms and conditions will be modified as appropriate, and guidance on rights retention for NIST-funded authors will be developed.

Reasonable costs associated with publication, including submission, curation, management of data, and special handling instructions may be included in grant proposals or project plan budgets for contracts. Awardee DMPs are reviewed as part of the technical evaluation process. Awardees must specify the data repository or repositories they expect to use. Such repositories

must be aligned with OSTP guidance.[6] Non-compliance with requirements by funding recipients may result in suspension or termination of the award.

Upon request NIST will report to OSTP the status of implementation of this public access plan and associated policies as well as the numbers of scholarly publications and data resulting from federal funding being made available to the public.

2.5. AUTHORITY

NIST's authority to require broad public access to the results of federally funded research stems from multiple sources, including, but not necessarily limited to, those below.

Public Law 115-435 Title II, *Open, Public, Electronic, and Necessary Government Data Act*
Public Law 107-347, *E-Government Act of 2002, § 207*
Public Law 111-358, *America COMPETES Reauthorization Act of 2010, § 103*
Executive Office of the President, Executive Order 13642, *Making Open and Machine Readable the New Default for Government Information,* 9 May 2013
Executive Office of the President, Office of Management and Budget (OMB), Memorandum for the Heads of Executive Departments and Agencies (MHEDA), *Open Data Policy – Managing Information as an Asset*, M-13-13, 9 May 2013
Executive Office of the President, Office of Science and Technology Policy (OSTP), MHEDA, *Ensuring Free, Immediate, and Equitable Access to Federally Funded Research*, August 25, 2022
Executive Office of the President, OSTP, MHEDA, *Increasing Access to the Results of Federally Funded Scientific Research*, 22 February 2013
Executive Office of the President, OMB, MHEDA, *Open Government Directive*, M10-06, 8 December 2009
Executive Office of the President, MHEDA, *Transparency and Open Government*, M-09-12, 21 January 2009
OMB, Circular A-130, *Management of Federal Information Resources*, 28 July 2016

The National Institute of Standards and Technology Act (15 U.S.C. 272, Chapter 7) states the responsibility of NIST to "compile, evaluate, publish, and otherwise disseminate general, specific, and technical data resulting from the performance of the functions specified in this section or from other sources when such data are important to science, engineering, or industry, or to the general public, and are not available elsewhere."

NIST's Public Access Plan and resulting policies do not rescind any other Department of Commerce or NIST policies or guidance and do not alter or supersede existing law or regulations, including NIST's fee recovery authority for the provision of calibrations and Standard Reference Materials (15 USC 275c) and Standard Reference Data (15 USC 271-278e), which is further articulated in Public Law 90-396, the Standard Reference Data Act.

2.6. ROLES AND RESPONSIBILITIES

NIST Director

- Controls and manages NIST's Policy and Order on Managing Public Access to Results of Federally Funded Research.
- Ensures coordination of the management of public access to results of federally funded research with non-NIST organizations, as applicable.

Associate Director for Laboratory Programs (ADLP)

- Implements and provides oversight for maintenance of, and compliance with, NIST's Policy and Order on Managing Public Access to Results of Federally Funded Research.
- Ensures the availability of appropriate resources for managing public access to results of federally funded research.
- Ensures compliance with NIST's Policy and Order on Managing Public Access to Results of Federally Funded Research.
- Coordinates collaboration and cooperation on implementation of the NIST's Policy and Order on Managing Public Access to Results of Federally Funded Research across NIST and with the Department of Commerce and other federal agencies.
- With the Associate Director for Management Resources (ADMR) and the Associate Director for Innovation and Industry Services (ADIIS), coordinates with relevant OUs and Offices in their infrastructure planning and implementation to promote interoperability across NIST.
- With the ADMR, Chief Information Officer (CIO), and Chief Data Officer (CDO), coordinates with relevant OUs and Offices in their infrastructure planning and implementation to promote interoperability across NIST.
- With the ADMR, CIO, and CDO, coordinates collaboration and cooperation on implementation of this plan across NIST, and with the Department of Commerce and other Federal agencies.

Associate Director for Management Resources (ADMR)

- Facilitates the provision of NIST-level infrastructure to manage public access to results of federally funded research.
- Ensures the development and deployment of training, awareness, and outreach activities pertaining to the management of public access to results of federally funded research.
- Ensures compliance with NIST's Policy and Order on Managing Public Access to Results of Federally Funded Research.
- With the ADLP and ADIIS, coordinates with relevant OUs and Offices in their infrastructure planning and implementation to promote interoperability across NIST.
- Oversees the activities of the Chief Information Officer and the Directors of the NIST Research Library and Museum and Office of Acquisition and Agreements Management in supporting NIST's Policy and Order on Managing Public Access to Results of Federally Funded Research, as applicable.
- With the ADLP, CDO, and CIO, coordinates collaboration and cooperation on implementation of this plan across NIST, and with the Department of Commerce and other Federal agencies.

Associate Director for Innovation and Industry Services (ADIIS)

- Oversees the activities of the Directors of the Advanced Manufacturing National Program Office, the Baldrige Performance Excellence Program, the Economic Analysis Office, the Hollings Manufacturing Extension Partnership, and the Technology Partnership Office in supporting NIST's Policy and Order on Managing Public Access to Results of Federally Funded Research, as applicable.
- Ensures compliance with NIST's Policy and Order on Managing Public Access to Results of Federally Funded Research.

NIST Chief Data Officer (CDO)

- Oversees implementation of NIST's Public Access Plan.
- Oversees development of directives in support of NIST's Public Access Plan.
- Supports NIST Director and ADLP responsibilities, as applicable.
- Coordinates with relevant OUs and Offices in infrastructure planning and implementation to promote access to research outputs across NIST.
- Coordinates with other Commerce-bureau CDOs to promote access to research outputs across the Department.
- With the ADLP, ADMR, and CIO, collaborates and cooperates on implementation of this plan across NIST, and with the Department of Commerce and other Federal agencies.

NIST Chief Information Officer (CIO)

- Manages NIST-level information technology infrastructure to support NIST's provision of public access to results of federally funded research.
- Ensures that the NIST Enterprise Data Inventory (EDI) is available to NIST employees and that NIST inventory records are provided to the Department of Commerce and government-wide inventories in the necessary format, per Office of Management and Budget requirements.
- Ensures that the NIST Publications System (NPS) is available to NIST employees.
- Supports NIST OU and Office Directors' responsibilities, as applicable.
- With the ADLP and ADMR, coordinates with relevant OUs and Offices in their infrastructure planning and implementation to promote interoperability across NIST.
- With the ADLP and ADMR, coordinates with other agency CIOs and with the Federal CIO Council to promote interoperability across agencies.

Director, NIST Research Library and Museum

- Works with the Office of Information Systems Management (OISM) to ensure implementation and operation of the NIST EDI.
- Curates and maintains metadata associated with PIDs assigned by NIST to scholarly publications and scientific research data.
- Provides consultation, training, and educational materials for NIST employees on managing data and providing public access, including use of the NIST EDI and the NIST review process, as applicable, for results of federally funded research that are intended for public dissemination.
- Facilitates search and access for the public to metadata for narrative and data publications.
- Supports NIST OU and Office Directors' responsibilities, as applicable.

Director, Office of Acquisition and Agreements Management (OAAM)

- Works with the Directors of NIST OUs and Offices to ensure that activities funded wholly or in part by NIST to a non-NIST organization through a grant, cooperative agreement, contract, or other agreement include requirements for managing data and publications consistently with the NIST directives for Managing Public Access to Results of Federally Funded Research as specified by NIST in the terms and conditions of the grant, cooperative agreement, contract, or other agreement with the non-NIST organization.

Directors of the OUs and Offices that produce scientific data

- Implement policies to manage public access to results of federally funded research within their OU or Office.
- Work with other offices, e.g., OISM and the NIST Research Library and Museum, to manage public access to results of federally funded research.
- Review data prior to making it publicly available; authority to carry out this responsibility may be delegated to the Division Chief or equivalent.
- Ensure that their OU or Offices deposit manuscripts and associated data in NIST-authorized repositories.
- Ensure that their OU or Office prioritizes the discoverability and publication of OU or Office datasets that are not associated with publications, based on stakeholder needs and risk management, as appropriate.
- Provide oversight for implementation of the OU-/Office-level plan by units (such as divisions, programs, or projects) within the OU/Office.
- Evaluate the effectiveness of units with the OU/Office in meeting the objectives of this plan.
- Coordinate with ADLP, ADMR, and CIO in infrastructure planning and implementation to promote interoperability across NIST.

Supervisory Employees within an OU or Office

- Ensure activities under their direction are in compliance with policies for managing public access to results of federally funded research.
- Ensure employees under their supervision meet employee-level requirements of their OU or Office plans to manage public access to results of federally funded research.
- Work with OAAM to ensure that activities funded wholly or in part by NIST to a non-NIST organization through a grant, cooperative agreement, contract, or other agreement include requirements for managing data and publications consistently with the NIST directives for Managing Public Access to Results of Federally Funded Research, as specified by NIST in the terms and conditions of the grant, cooperative agreement, contract, or other agreement with the non-NIST organization.

Non-Supervisory Employees

- Comply with the employee-level requirements of NIST directives for Managing Public Access to Results of Federally Funded Research:
  - Prepare and execute DMPs.
  - Provide metadata for NIST publishable or published data to the NIST EDI.

    - Provide published data in open formats via publicly available, NIST-authorized repositories free of charge unless otherwise exempt (i.e., some Standard Reference Data).
    - Provide metadata for narrative publications to the NIST Publications System (NPS).
    - Include funding information in publications.
    - Provide author versions of peer-reviewed publications to NPS so they can be made machine-readable, accessible to assistive technologies, and publicly available via NIST's institutional repository.
    - Enable broad accessibility by ensuring that accessibility aspects of a paper that are under their control have been addressed.
- Work with OAAM to ensure that activities funded wholly or in part by NIST to a non-NIST organization through a grant, cooperative agreement, contract, or other agreement address requirements for managing data and publications consistently with the NIST directives for Managing Public Access to Results of Federally Funded Research, as specified by NIST in the terms and conditions of the grant, cooperative agreement, contract, or other agreement with the non-NIST organization.
- When serving as a Federal Program Officer or Technical Point of Contact:
    - Review and work with awardees to ensure DMP compliance with term and conditions of agreements, as necessary, and notify GMD or OAAM of awardees' compliance with the requirement.
    - Enter metadata for awardees' narrative publications into the NIST Publications System as appropriate.
    - Enter metadata for awardees' scientific data products into the NIST EDI.

Awardee Institutions and Funding Recipients:

- Ensure that authors and investigators comply with all terms and conditions of awards, including acknowledgment of funding sources in research outputs, inclusion of all available PIDs as appropriate, and making results of federally funded research publicly available.
- Provide metadata for published research products to their Federal Program Officer or Technical Point of Contact.

2.7. IMPLEMENTATION

NIST's initial public access plan provided a framework for identifying, managing, and preserving the results of federally funded research so as to make them publicly accessible as peer-reviewed publications and digital data. These remain our principles today as we address the 2022 update to OSTP's memo. NIST's guiding principles for implementation include the following:

- Create flexible approaches and infrastructure to accommodate a wide range of results of scientific research as well as a diversity of user communities, including funded researchers, universities, libraries, publishers, industry, civil society, and any other users of NIST research results. Policies, processes, and infrastructure that provide meaningful access to the results of NIST-funded research for this full range of communities will continue to be developed.

- Optimize search, archival, and dissemination features to encourage innovation in accessibility and interoperability while ensuring long-term stewardship of the results of federally funded research.
- Plan for change as the types and volume of scientific information produced with NIST funding expands. Extensible and evolvable solutions that can accommodate ever-changing needs are required. NIST will track and respond to continuing changes in digital technologies when planning to make research results publicly accessible.
- Provide appropriate leadership to promote and enhance NIST's reputation for high-quality output, willingness to work in partnership, and responsiveness to stakeholders.

Policy

In 2014, NIST adopted a systematic approach to implement a Public Access Policy that included the following:

- Public discovery and download of peer-reviewed publications and associated data free of charge no later than 12 months following publication
- Attribution of publications to authors, journals, and original publishers
- Effective data management planning for all NIST-funded activities that produce scientific data
- Public discovery and access to NIST scientific data and
- Clear guidance and access to appropriate education and training materials for NIST staff and NIST-funded extramural researchers to help them comply with NIST policies.

As a result of the 2022 memo, NIST will:

- Provide public discovery and download of peer-reviewed publications free of charge immediately (if law allows) but no later than 12 months following publication. Data associated with the manuscript will be made available free of charge immediately upon publication of the paper.
- Provide metadata for peer-reviewed publications that is machine-readable, machine-actionable, and available for re-use via an application programming interface (API).
- Provide attribution of publications to authors, journals, and original publishers in our institutional repository (PMC).
- Include persistent identifiers in metadata and in research outputs themselves as available.
- Provide effective data management planning and data sharing for all NIST-funded activities that produce scientific data.
- Provide a portal for public discovery and access to NIST scientific data associated with manuscript and stand-alone datasets (including code) as well as other research outputs.
- Issue clear guidance for NIST staff and NIST-funded extramural researchers to help them comply with NIST policies and conditions of their funding agreements.

Intramural Narrative Publications and Data

In 2014, NIST partnered with the National Institutes of Health (NIH) to utilize PubMed Central (PMC) as our institutional repository; NIST's peer-reviewed publications may be found through a NIST "storefront" page on the PMC website. By partnering with NIH, NIST ensures the

permanent preservation (in compliance with federal records retention requirements), machine-readability, and long-term availability of metadata and peer-reviewed scholarly publications free of charge. PMC provides accessible manuscripts to the extent possible, as described on the PMC website; accessibility is limited in part by the completeness of information submitted, and NIST aims to improve the accessibility of our submissions (e.g., through the inclusion of alt-text for figures).

NIST's 2014 plan for providing public access to data consisted of three components: data management plans (DMPs), an enterprise data inventory (EDI) that assigns DOIs to data, and a Public Data Repository where the public can find and access our scientific data. These three pieces are operational but in FY23 are being upgraded to provide a better user experience, to collect more metadata, and to provide a single portal through which NIST research outputs can be accessed. Domain metadata will be collected along with information about associated publications, including persistent identifiers for associated publications and other research products, individuals, funders, awards, etc., as they become available.
NIST's Public Data Repository is currently undergoing assessment for certification as a CoreTrustSeal Data Repository; CoreTrustSeal complies with the NSTC Subcommittee on Open Science's Desirable Characteristics for Data Repositories.[2]

Extramural Narrative Publications and Data

Funding agreements include requirements for data management planning consistent with the goals of the NIST plan. Applicable Notices of Funding Opportunities point to a DMP template and rubric, and require technical review of the DMP; deficiencies must be addressed before research begins and costs are incurred. Awardees are required to resubmit DMPs if deficiencies were noted and revisions were necessary or if the DMP was modified during the course of the work. Currently, all final peer-reviewed manuscripts arising from NIST-funded research must be (1) freely available within 12 months of publication in a journal associated with CHORUS or (2) submitted to the NIST publications repository or equivalent within 12 months of publication. Recipients must continue to report the status of any publications and associated PIDs in their Research Performance and Progress Reports (RPPRs).

Department of Commerce's (DOC's) Award Conditions currently state that:

- Publication of results or findings in appropriate professional journals and production of video or other media is encouraged as an important method of recording, reporting, and otherwise disseminating information and expanding public access to federally funded projects (e.g., scientific research). Non-Federal entities must comply with the data management and access to data requirements established by the DOC funding agency as set forth in the applicable Notice of Funding Opportunity and/or in Specific Award Conditions.
- Non-Federal entities may be required to submit a copy of any publication materials, including but not limited to print, recorded, or Internet materials, to the funding agency.
- When releasing information related to a funded project, non-Federal entities must include a statement that the project or effort undertaken was or is sponsored by DOC and must also include the applicable financial assistance award number.

- Non-Federal entities are responsible for assuring that every publication of material based on, developed under, or otherwise produced pursuant to a DOC financial assistance award contains the following disclaimer or other disclaimer approved by the Grants Officer: This [report/video/etc.] was prepared by [recipient name] using Federal funds under award [number] from the National Institute of Standards and Technology, U.S. Department of Commerce. The statements, findings, conclusions, and recommendations are those of the author(s) and do not necessarily reflect the views of the National Institute of Standards and Technology or the U.S. Department of Commerce.

These are supplemented by additional NIST terms and conditions:

- Recipients are encouraged to publish the research results of a NIST research grant/cooperative in open scientific literature in such a way as to be generally available to American Scientific Libraries.
- The Recipient should contact the Federal Program Officer for assistance in coordinating appropriate publication/dissemination of information resulting from a NIST research grant/cooperative agreement. For this purpose, the *NIST Technical Grant/Contractor Series* (GCR) may be used as a publication venue, but the Recipient may choose other publication/dissemination methods.
- In any such publications, acknowledgment of NIST sponsorship must be made with a footnote or other appropriate notation reading, "This work was performed under the following financial assistance award [insert NIST grant or cooperative agreement number] from the U.S. Department of Commerce, National Institute of Standards and Technology," or words to that effect.
- The Recipient must submit one (1) copy of any published work to their assigned Federal Program Officer.

Terms and conditions for awards will be modified to state that:

- Funders, award numbers, and associated PIDs where available must be included in research outputs.
- Data associated with a manuscript must be made publicly available at the same time the manuscript is published.
- Other data acquired as a result of the award must be made publicly available within three years of the end of the award if data publication is not prohibited (e.g., for legal, privacy, ethical, technical, intellectual property, or security limitations, and/or any other potential restrictions or limitations on data access, use, and disclosure, including those defined in terms and conditions of funding agreement or award or that convey from a data use agreement or stipulations of an Institutional Review Board).
- Public data must be deposited in a repository that is aligned with OSTP guidelines.[6]

Guidance will be provided on making narrative publications available.

Outreach and Education

In coordination with other agencies and the private sector, awareness and support training, education, and workforce development related to NIST's plans to provide public access to the results of federally funded scientific research, including scientific data management, analysis, storage, preservation, and stewardship, is provided to NIST staff. Guidance is provided to those outside NIST who are working on NIST-funded scientific research; this guidance will be updated as necessary to meet new requirements, as appropriate.

2.8. METRICS, COMPLIANCE, AND EVALUATION

NIST will continue to develop mechanisms to evaluate compliance with NIST's Public Access Policy including collection of metrics such as:

- Number of intramural and extramural papers (i.e., articles submitted from NIST grants and contracts) made available to the public per year.
- Percentage of intramural and extramural papers for which datasets were made available immediately upon publication.
- Number of datasets added to the NIST Enterprise Data Inventory per year.
- Number of datasets made public per year.
- Percentage of NIST staff and awardees in compliance with requirements.

NIST will utilize data from PubMed Central, CHORUS, and other reference sources to determine compliance; compliance will be enforced through annual performance reviews at both staff and management levels and through evaluation of past performance in grants, contracts, and other awards and agreements. Note that the Department of Commerce is currently migrating to NIH's eRA Commons for grants management; that system should provide additional compliance data in FY25. Metrics will be reported to OSTP as requested.

2.9. PUBLIC-PRIVATE PARTNERSHIPS

NIST uses PubMed Central (PMC) as our institutional repository for peer-reviewed publications. PMC's use of a non-proprietary archival language maximizes interoperability between public and private platforms, making creative re-use of metadata and contents of publications possible. The same potential for re-use exists for NIST's data and associated metadata, which are available through NIST's Public Data Repository. And a partnership with CHORUS provides a window into publication metrics through metadata provided by publishers. Value to all stakeholders is enhanced, and unnecessary duplication of existing mechanisms is avoided.

2.10. INTERAGENCY COORDINATION

NIST coordinates with other agency partners through the following mechanisms:

- National Science and Technology Council (NSTC) Subcommittee on Open Science (SOS) and multiple associated working groups convened by OSTP to enable interagency

coordination in responding to the requirements of the February 2013 and August 2022 public access memos
- NSTC Subcommittee on Research Security convened by OSTP to enable interagency coordination in responding to the requirements of NSPM-33
- Commerce Data Governance Board and its multiple working groups to share best practices in research data management and assure that data assets are properly catalogued in the Department of Commerce's data inventory and data.gov.

2.11. PUBLIC NOTICE

NIST will work with other agencies in publishing an announcement of our revised public access plan in the Federal Register soliciting comment from federally funded researchers, universities, libraries, publishers, users of federally funded research results, civil society groups and the general public. NIST will post our revised Public Access Plan at https://www.nist.gov/open.

2.12. UPDATE AND RE-EVALUATION OF THE PLAN

The plan will be evaluated annually and updated as necessary until a revision to NIST's Public Access Policy is implemented.

2.13. TIMELINE FOR IMPLEMENTATION

Key milestones are outlined in each implementation category below.

2.13.1. Policies

Table 1. Policy-Development Milestones.

DUE DATE	DESCRIPTION
February 2023	Submit draft plan to OSTP, addressing requirements in section 3 of the 2022 OSTP memo
December 2024	Update and publish directives (addressing section 3)
December 2024	Submit draft plan to OSTP, addressing requirements in section 4 of the 2022 OSTP memo
December 2025	Effective date for new directives (addressing section 3)
December 2026	Update and publish directives (addressing section 4)
December 2027	Effective date for new directives (addressing section 4)

2.13.2. Infrastructure

Table 2. Infrastructure-Development Milestones.

DUE DATE	DESCRIPTION
September 2023	Make NIST Publications System (NPS) metadata publicly available via API
September 2023	Configure NPS and EDI to collect PIDs for awards, funders, research outputs, and individuals recognizing that some PIDs do not currently exist
October 2024	[Expected date of NIST migration to eRA Commons for grants management][a]
September 2026	If an API is available, configure NPS and EDI to ingest metadata from eRA Commons (e.g., DOIs for awardees' papers and published data)
March 2027	Develop reports to monitor awardees' compliance with terms and conditions related to providing public access to research results
September 2027	Configure NPS and EDI to accept or manage persistent identifiers (PIDs) for funders, awards, contracts, research outputs, etc.
September 2027	Provide information about authors, affiliations, and funding sources on research outputs' landing pages on the NIST website

[a] Milestones that follow this are dependent upon timing of NIST's migration to eRA Commons for grants management.

2.13.3. Processes

Table 3. Process-Development Milestones.

DUE DATE	DESCRIPTION
September 2023	Require funding statements in intramural and extramural narrative publications. Require use of Research Organization Registry (ROR) and other persistent identifiers as available.
September 2024	Modify NIST's Award Conditions of grants to require data publication in an appropriate repository at the time of manuscript publication, acknowledgment of funding sources with PIDs where available, and release of standalone data within three years.
September 2024	Require NIST authors to make their outputs Section 508 compliant to the extent possible

2.14. RESOURCES

Implementation of this plan requires an annual investment of $6.52M in addition to the approximately $5M we currently spend annually across the Office of Data and Informatics, the Office of Information Systems Management, the NIST Research Library, and the Special Programs Office. See Section 2.16 [Section 2.16 was called the Appendix in the plan as submitted to OSTP] for a breakdown of funding requirements. Note that this plan is not a budget document and does not imply support or approval of any specific action or investment.

2.15. DOCUMENT HISTORY

Submitted to OSTP, February 14, 2023
Draft approved by OSTP and OMB with comments, April 26, 2023
Revised per OSTP comments, May 17, 2023
Initial release for public comment, June 30, 2023

Contact: public-access@nist.gov

2.16. FUNDING REQUIRED

Funding requirements for implementation of this plan. This plan is not a budget document and does not imply support or approval of any specific action or investment.

Table 4. Estimated Funding Necessary for Implementation.

Task	Full-Time Equivalent (FTE) Staff	Loaded Salaries ($M) [a]	Other Objects ($M)
Maintenance, operations, and updates to enterprise data inventory, public data repository, and portal (Office of Data and Informatics (ODI) – 2, Office of Information Systems Management (OISM) – 1)	3	0.98	
Maintenance, operations, and updates to publications inventory, repository, and portal (OISM)	2	0.65	
Modifications to NPS and MIDAS to collect newly required metadata (OISM)	1	0.33	
Mechanism to identify awardee outputs and configure systems to monitor compliance with specific award conditions (OISM)	0.5	0.15	
APIs to data (as opposed to metadata)	1	0.30	
Adobe Acrobat Pro for 2,000 staff members – $5.13/month/user is current rate			0.12
Accessibility training – 'live' training with Human Resources contractor			0.15
Conversion of publication documents to XML, formatting, and deposit into PubMed Central; maintenance of metadata associated with NIST-minted DOIs (NIST Research Library)	6	1.80	0.10
Mechanism to determine when a paper has been published so PMC knows when to release	0.5	0.15	
Data stewards in each of the six Labs to manage documentation and maintenance of data for intramural or extramural reuse, including understanding community needs and potential risks associated with data disclosure	6	1.80	
SUBTOTAL	**20.0**	**$ 6.15**	**$ 0.37**
TOTAL		**$ 6.52**	

[a]Staffing costs were estimated using $300k for a loaded ZP-III salary, $350k for a loaded ZP-IV, and $325 as a midpoint.

3. Federal Register [4]

[Docket No.: 230612-0147]

Draft Plan for Providing Public Access to the Results of Federally Funded Research

AGENCY: National Institute of Standards and Technology, Department of Commerce.

ACTION: Notice; Request for Public Comment.

SUMMARY: The National Institute of Standards and Technology seeks comments on the *Draft NIST Plan for Providing Public Access to the Results of Federally Funded Research*. NIST is taking steps to make its scientific data and publications more readily available and accessible by the public, as directed in an August 2022 memorandum from the Office of Science and Technology Policy. This document outlines NIST's plan for implementing new requirements to manage the public access of scientific data and publications. Public comments received on the NIST Public Access Plan will inform NIST as it revises its existing directives to implement the updated Plan.

DATES: Responses must be received by 11:59 p.m. Eastern Time on [PLEASE INSERT 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER] to be considered.

ADDRESSES: Comments may be submitted by either of the following methods:

- *Electronic submission*: Submit electronic public comments via the Federal eRulemaking Portal.

    1. Go to www.regulations.gov and enter [INSERT REGS DOCKET NUMBER] in the search field

    2. Click the "Comment Now!" icon, complete the required fields

    3. Enter or attach your comments.

- *By email*: Comments in electronic form may also be sent to public-access@nist.gov in any of the following formats: HTML, ASCII, Word, RTF, or PDF.

- *By post:* Comments may be sent by mail to Katherine Sharpless, NIST, 100 Bureau Drive Stop 4701, Gaithersburg, MD 20899-4701.

Please submit comments only and include your name, organization's name (if any), and cite "NIST Public Access Plan" in all correspondence. Comments containing references, studies, research, and other empirical data that are not widely published should include copies of the referenced materials.

All comments responding to this document will be a matter of public record. Relevant comments submitted therein will be available on the Federal eRulemaking Portal at https://www.Regulations.gov and, after the comment period closes, on NIST's website at

https://www.nist.gov/open. NIST will not accept comments accompanied by a request that part or all of the material be treated confidentially because of its business proprietary nature or for any other reason. Therefore, do not submit confidential business information or otherwise sensitive, protected, or personal information, such as account numbers, Social Security numbers, or names of other individuals.

FOR FURTHER INFORMATION CONTACT: For questions about this notice contact: Katherine Sharpless, Open Access Officer, email address katherine.sharpless@nist.gov, (301) 975-3121. Please direct media inquiries to NIST's Office of Public Affairs at (301) 975-2762.

SUPPLEMENTARY INFORMATION:

The National Institute of Standards and Technology (NIST) is one of our Nation's oldest Federal laboratories (for more information, visit www.nist.gov). A bureau in the Department of Commerce, the NIST mission is to promote U.S. innovation and industrial competitiveness by advancing measurement science, standards, and technology in ways that enhance economic security and improve our quality of life. From early electrical measurement research to today's quantum information science, NIST has long been, and continues to be, a center for high-impact research meeting the needs of academia, industry, and government. The NIST laboratories conduct world-class research, often in close collaboration with industry, which advances the nation's technology infrastructure and helps U.S. companies continually improve products and services.

NIST publishes this notice to seek comments on the *Draft NIST Plan for Providing Public Access to Results of Federally Funded Research*, posted at www.nist.gov/open.

NIST developed a public access plan in response to the February 22, 2013, Office of Science and Technology Policy (OSTP) memorandum *Increasing Access to the Results of Federally Funded Scientific Research* and several White House memoranda (i.e., Office of Management and Budget memoranda M-10-06 *Open Government Directive* and M-13-13 *Open Data Policy – Managing Information as an Asset*. NIST policy was developed from that original plan; NIST's public access policy has been operational since 2015. NIST's original plan and the resultant policy ensured that the integrity of NIST data are maintained throughout their life cycle and increased the visibility of NIST measurements, standards, technology, and research activities.

On August 25, 2022, OSTP issued a new public access memorandum, *Ensuring Free, Immediate, and Equitable Access to Federally Funded Research*). In response to OSTP's 2022 memo, NIST is taking new steps to make its scientific data and publications more readily available and accessible by the public.

The *Draft NIST Plan for Providing Public Access to the Results of Federally Funded Research* applies to the results of research funded wholly or in part by NIST, presented in peer-reviewed scholarly publications and as research data. The document outlines NIST's plan to manage public access to research data and publications in accordance with new recommendations of the 2022 OSTP memo, including the removal of embargo periods for access to publications resulting from NIST-funded work, requiring immediate release of data associated with narrative publications, inclusion of available persistent identifiers in publications, and emphasis on the

need for accessibility to users who have disabilities through provision of machine-readable publications.

NIST invites respondents to comment on the following questions that pertain to the implementation NIST's updated public access plan:

- How can NIST ensure equity in publication opportunities?
- How can NIST ensure public access and accessibility to outputs of NIST-funded research?
- How can NIST monitor impacts on affected communities – authors and readers alike?
- How can NIST improve the plan to provide greater public access to NIST-funded research results?

Comments relating to the text of the *Draft NIST Plan for Providing Public Access to the Results of Federally Funded Research* should reference the document by page and line number. All comments must be received in accordance with the DATES and ADDRESSES sections of the notice above.

4. Public Comment Received in Response to Federal Register Notice

Comments from 14 entities were received in response to the Federal Register Notice:

AAP (Association of American Publishers)
ACS (American Chemical Society)
APLU (Association of Public and Land-Grant Universities)
APS (American Physical Society)
ASCE (American Society of Civil Engineers)
ASME (originally the American Society of Mechanical Engineers)
CrossRef
Elsevier
IEEE-USA (Institute of Electrical and Electronics Engineers)
SPARC (Scholarly Publishing and Academic Resources Coalition)
Springer Nature
STM (The International Association of Scientific, Technical and Medical Publishers)
T&F (Taylor & Francis)
Wiley

All responses are provided in this document and are also available on regulations.gov via a search for NIST-2023-0002.

AAP | ASSOCIATION OF AMERICAN PUBLISHERS

August 14, 2023

Dr. Katherine Sharpless
National Institutes of Standards and Technology
100 Bureau Drive
Stop 4701
Gaithersburg, MD 20899–4701

Submitted via electronic form.

Re: RFI related to "Plan For Providing Public Access to Results of Federally Funded Research" (NIST–2023–0002)

Dear Dr. Sharpless,

The Association of American Publishers (AAP) welcomes this opportunity to comment on the Request for Information on the National Institutes of Standards and Technology (NIST) Plan for Providing Public Access to Results of Federally Funded Research. AAP represents over 80 Professional and Scholarly Publishers, including dozens of scholarly societies representing over 750,000 scientists, engineers, researchers, and other members of the academy. A full list of AAP members may be found on our website: publishers.org

Scientific publishing has been a critical part of the scholarly communication ecosystem for centuries. AAP members take deep pride in their significant contributions to advancing science and engineering, economic prosperity, and public welfare. We are often the first line of defense in protecting scientific integrity and ensuring public trust in science. Many of the advancements enabling open science are a direct result of scientific publishers' hard work and investments in a free and competitive marketplace, including online publication, pre-print servers, archiving, persistent identifiers, rigorous standards, and metadata. The current discussion of open access was enabled by publishers' rapid movement online beginning 25 years ago. These enhancements were the result of our ongoing passion to innovate in the development, discovery, and dissemination of high-quality, trusted reports of research for a global audience. We believe the marketplace in which we freely compete is critical for the quality of scholarly communication as well as authors, funders, the scientific community, and society at large.

The Office of Science and Technology Policy recognized the importance of publishers' investments in adding value to scholarly articles by seeking post-publisher peer review article versions to satisfy open access requirements in its August 2022 OSTP immediate open access memo. As NIST examines and updates its open science policies, we would like to note the following key points about the current scholarly communication environment:

First, the essential services provided by publishers that NIST, OSTP, and other federal agencies value so highly have costs, and these costs must be funded. These not only include the costs of near-term expenses but also the investments publishers make in staff, services, systems, and infrastructure for the long term. Currently, these costs and investments by publishers are recouped via a broad array of business models, including most prominently, the pay-to-read (subscription) model, and the pay-to-

publish (gold open access) model. The 2013 OSTP open access memo supported the subscription model and acknowledged the need for a sustainable approach by endorsing a one-year period for subscriptions before free online access occurred, a position NIST supported in its 2014 open science policy. Variable business models allow for many options in disseminating scientific and technical information, including choices at no or low cost to researchers and funders.

There is no viable way for scholarly societies and other publishers to continue to produce trustworthy, high-quality open access publications without any means to recoup the significant investments and expenses required for them to do so. We understand the motivation behind OSTP's actions to adjust public access rules and as publishers, we will work to address the new requirements. However, we are concerned about potential long-term effects of the new policy on the scholarly communication ecosystem. One area of particular concern is its call for immediate and free access to accepted peer reviewed manuscripts and other research outputs that benefit from publishers' value-added investments. Immediate Green open access, whereby a researcher deposits the Accepted Manuscript (AM) to a repository for free public availability immediately upon publication, undermines the subscription, read-and-publish, subscribe to open, or similar licensing agreements that enable publishers to invest in ensuring the quality, integrity, and preservation of the scientific record. Unfortunately, there is ample evidence of subscription cancellation domestically and abroad using programs such as Unsub.org and Unpaywall.org, as well as blogs tracking publisher-library negotiations, which provide subscribers with resources to evaluate and cancel subscriptions. Subscription cancellations undermine the funds needed to continue producing trusted high-quality publications that help advance human health and welfare, job creation and economic growth.

Second, open science policies should center and empower the researcher, enabling them to pursue their passion and knowledge, and to publish in the venue of their choice for maximum impact, without burdensome compliance regimes or unfunded mandates that create financial barriers to publication. Researchers should be able to decide how, when, and where they publish their findings and interact with their community and the broader public. We support broad public access as an important goal, but it should be achieved in a way that places fewer restrictions on researchers, as opposed to burdening them with further mandates. This includes ensuring their freedom of choice in publication outlets and the licenses that apply to their work.

Empowering Sustainable and Equitable Open Science Communication

AAP believes the best method for addressing issues of equity in publication and reader access is through a vibrant, competitive, and diverse marketplace with a broad array of publishers and options for authors, including non-profit scholarly societies, university, and technical presses, and open access only publishers. By encouraging and financially supporting researchers to work closely with the publishing community, NIST can both expand access to, and maintain the quality of, scholarly communications across the broad spectrum of NIST supported research efforts.

Where researchers are required to make versions of articles that include added value from publishers freely and immediately available upon publication, sustainable publication models will be necessary to enable publishers to continue article selection, curation, editorial and peer review, integrity, and quality

checks, as well as dissemination and preservation services in the long term. Such models include gold, subscribe to open, transformative agreements, read and publish, as well as evolving market innovations for fostering open science.

Helping researchers understand and budget for costs of dissemination, combined with NIST seeking robust and sustainable funding, is the best way to ensure authors have a wide array of options to communicate their research findings. To ensure all researchers have equal opportunity to make their research available immediately in their journal of choice, it is critical that all NIST's grantees are provided with clear and consistent guidance to understand and include potential publication costs when applying for and budgeting grants.

Assisting and Supporting Equity and Access for Readers and Researchers

A healthy scholarly publishing enterprise is well positioned to boost reader access. Assistive and interactive technologies can be brought to bear to empower scientists and researchers. AAP members are interested in continuing to partner with NIST to explore the many ways we can support the STEM community and achieve broad equity. Publishers already fund resources in this area, like the AccessText Network, and a sustainable scholarly publishing system will be able to build upon these efforts and expand accessibility.

As part of efforts to boost reader equity, it is important the agency center and empower researchers by allowing them to choose the license which best meets their needs. Broad open licenses may make sense for some researchers, while others may be concerned about inappropriate modification, misinterpretation, or commercialization of their publication. Researchers need the ability to choose the best license for their publication, including non-commercial, non-derivative versions and we note that an open license is not necessary to draw upon the ideas presented in scholarly communication.

AAP opposes policies that would grant agencies inappropriate rights in downstream copyrighted works that they did not create, works that were instead the result of private sector investment in the peer review, editing, and publication process. We believe authors should have the freedom to decide how they assign their copyright, free from interference. Rights retention/restriction policies or mandates will not reduce the cost of publication but instead jeopardize the quality and integrity of peer reviewed publications and the scientific process by disincentivizing innovation and investment.

Improving research lifecycle management and tracking

Improving the discoverability and monitoring of the outputs of federally funded research is central to making open science accessible to funders and readers. This can be enabled and supported through effective use of metadata and persistent identifiers (PIDs). For example, the use of researcher provided identifiers from grant applications through to publication, either ORCID or ISNI (or both), will enhance the tracking of research outcomes based on the grant. Other PIDs include organization tracking IDs, funder reference, grant IDs, etc.) AAP also recommends that NIST encourage researchers to attach Persistent Identifiers (PIDS), while remaining flexible as to the individual PID.

AAP members have long been champions of PIDs and metadata as part of the overall publication process. Publishers founded Crossref to make research objects easy to find, cite, link, assess, and reuse and were among the first users of digital objective identifiers for this purpose. Ultimately, creating a seamless user experience for the reader will aid discovery of the published article, as well as associated data, metadata, and other material to provide important context and ensure comprehensive understanding of research findings.

AAP recommends linking to the authoritative Version of Record (VoR) on the publisher website from any public database or agency library to ensure readers are directed to the best version of an article, that is updated post publication, as well as other potentially affiliated material, such as linked data, graphics interfaces, and related articles.

Recommendations

AAP has two specific recommendations to include in future drafts of NIST's plan:

1. Preprints may also offer a path to achieving open science goals. While the VoR is the authoritative and continually updated version of the article, preprints are a possible low-cost avenue for researchers to advance open science. Preprints do not benefit from added value from publishers and most publishers allow and often encourage researchers to share their preprint immediately. Many publishers host and manage pre-print servers, encouraging discourse within the scientific community. We would welcome discussion with NIST about this and other options to meet open science goals.
2. NIST, and other federal agencies, can help researchers by supporting them to budget for the costs associated with making their work immediately available. In so doing, NIST will ensure all their grantees, but especially their less experienced grantees and those at lower funded institutions, are afforded the same opportunities to publish and attain the greatest impact for their work.

AAP appreciates this opportunity to comment on NIST's draft open access plans and looks forward to continuing to work on this and other important issues.

With Regards,

J. Carl Maxwell
Vice President, Public Policy

ACS Response to the National Institute of Standards and Technology request for information (RFI) on the NIST *Plan for Providing Public Access to Results of Federally Funded Research*

The American Chemical Society (ACS) welcomes the opportunity to respond to the National Institute of Standards and Technology (NIST) request for information (RFI) on the NIST *Plan for Providing Public Access to Results of Federally Funded Research*. ACS is a congressionally chartered non-for-profit organization and the world's largest scientific society with more than 173,000 individuals in our global membership community across 140 countries. ACS advances knowledge and research through scholarly publishing, scientific conferences, information resources for education and business, and professional development efforts.

Our response to the key questions identified in the RFI is as follows:

1. How can NIST ensure equity in publication opportunities?

As a socially responsible organization deeply rooted in the scholarly community, we share NIST's goal to ensure equity in publication opportunities. The best way to achieve this goal is to ensure that all stakeholders in the process of transitioning to immediate open access, e.g., researchers, funders, and institutions, understand that every method of open access publication has a cost that must be funded and budgeted – and that competition and diversity in publication outlets is the best way to maximize the efficiency, and therefore the cost, of those outlets.

Researchers need specific guidance on planning for and budgeting any new requirements: including budgeting during the grant application process to account for anticipated publication costs. We suggest that NIST work with organizations like ACS to help develop budgeting guidance. Encouragement and education should be provided at the start of the grant process to make sure that appropriate planning takes place.

Of the different methods that can ensure equity at scale in publication opportunities, direct funder support for publishing, i.e., Gold Open Access (Gold OA), is the most financially sustainable. This is because researchers can be secure in the knowledge that they have the funds needed to support publication in the outlet of their choice and the outlets themselves have a reliable source of funding with which to continue their operations and ensure the integrity of the content published. Gold OA at the ACS, as with many other society publishers, is a dynamic and customizable option for researchers to enable immediate OA. We have a robust waiver and discount program that helps researchers from low- and middle-income countries to publish at highly discounted rates rising to a complete waiver for low-income countries.

Immediate access to an accepted manuscript version of an article, i.e., immediate Green OA, has not proven to work at scale, even if it may work for a very small number of publishers or disciplines. It often appears cost free to researchers and others, but in fact it is reliant on subscriptions to cover the cost of peer review and publication. A widespread use of this method, in conjunction with tools such as Unsub.org that explicitly encourages institutions to cancel subscriptions where alternative free versions of articles are accessible, threatens the viability of the subscription funding on which Green OA methods of providing public access rely. The loss

of subscription funding in this context, means depleted resources available for publications to ensure the quality and integrity of the scientific record. This will directly result in erosion of public trust in science and a dampening effect on innovation, job growth, and scientific progress. It will also increase the likelihood that important publication outlets will cease operations due to lack of funds, creating new barriers to access and equity in publication opportunities. Smaller and not-for-profit publishers, including those associated with learned societies, are most likely to be at risk from this practice that could easily result in increased market consolidation. This, in turn, is likely to reduce author choice and market competition, stifling innovation and undermining equity in publication opportunities.

We recommend that NIST avoid creating these barriers, especially for scientists from traditionally marginalized communities, as well as early career researchers, by ensuring that all its grantees have the funding support necessary to enable their research and choose the publishing option that best suits their needs.

We encourage NIST to read and reference the position statements by STM on this subject, representing much of the publishing industry.

2. How can NIST ensure public access and accessibility to outputs of NIST-funded research?

NIST can best ensure public access and accessibility to outputs of NIST-funded research by helping to educate researchers that the publication cost of immediate open access is as much a part of the dissemination of research reports as attendance at scientific conferences and gatherings. They can achieve this by ensuring that adequate funds are available to researchers to enable them to support immediate open access and by advocating for the long-term funding support from Congress needed to ensure public access and accessibility. NIST is also encouraged to initiate public-private partnerships with organizations like ACS that provide discovery tools widely used by scientists globally to seamlessly identify research reports, data, and analyses that fuel innovation, economic prosperity, and scientific progress.

Of the different methods designed to achieve public access and accessibility at scale, Gold OA has the greatest chance of success. Gold Open Access at the ACS, as with many other society publishers, is a dynamic and customizable option for researchers to enable immediate OA. We have a robust waiver and discount program that helps researchers from low- and middle-income countries to publish at highly discounted rates rising to a complete waiver for low-income countries. Gold OA is a powerful model for enabling universal access to the most authoritative publications reporting on the results of scientific research, the Version of Record (VoR). The VoR is the authoritative version for researchers and the public, and is more cited and used, and garners more attention and trust than other versions. It can link bi-directionally to research objects like data and code, is continually updated, and is hosted on the publisher's platform where it can be integrated with other relevant content and analytical tools.

We caution against the promotion of immediate access to accepted manuscript versions of an article, i.e., immediate Green OA, especially through the so-called "rights retention strategy" (RRS). Immediate Green OA has not proven to work at scale, even if it may work for a very

small number of publishers or disciplines. It often appears cost free to researchers and others, but in fact it is reliant on subscriptions to cover the cost of peer review and publication. A widespread use of this method, in conjunction with tools such as Unsub.org that explicitly encourages institutions to cancel subscriptions where alternative free versions of articles are accessible, threatens the viability of the subscription funding on which Green OA methods of providing public access rely. The loss of subscription funding in this context, means depleted resources available for publications to ensure the quality and integrity of the scientific record. This will directly result in erosion of public trust in science and a dampening effect on innovation, job growth, and scientific progress. It will also increase the likelihood that important publication outlets will cease operations due to lack of funds, creating new barriers to public access and accessibility. Smaller and not-for-profit publishers, including those associated with learned societies, are most likely to be at risk from this practice that could easily result in increased market consolidation. This, in turn, is likely to reduce author choice and market competition, stifling innovation and undermining opportunities for public access and accessibility.

We recommend that NIST avoid creating these barriers, especially for scientists from traditionally marginalized communities, as well as early career researchers, by ensuring that all its grantees have the funding support necessary to enable their research and choose the publishing option that best suits their needs. We encourage NIST to read and reference the position statements by STM on this subject, representing much of the publishing industry.

ACS instead recommends that researchers be allowed to publish under rights consistent with their vision and needs, including non-commercial, non-derivative licenses. We support public access methods that are most consistent with academic freedom of expression globally based upon the responsible exercise of independent editorial control.

3. How can NIST monitor impacts on affected communities — authors and readers alike?

There are several ways for NIST to keep itself informed about the impacts of its plan on affected communities. Many of them involve ongoing stakeholder dialogs in various forms and fora, e.g., stakeholder roundtables/consultations, listening sessions, or the creation of advisory panels, designed to enable NIST to maintain close contact with affected communities. Key among those communities are publishers and scholarly societies like the ACS who may be significantly affected by the implementation of the NIST *Plan for Providing Public Access to Results of Federally Funded Research*.

Organizations like ACS are deeply committed to supporting integrity and trust in science by building and maintaining infrastructure that enables the widespread production and communication of validated and reliable reports on scientific research. Among other things, this involves creating scientific journals and staffing their editorial boards with experts that read and evaluate thousands of submitted manuscripts for quality and relevance. ACS also spends significant resources to ensure the integrity of journal articles by verifying author and content integrity, assessing articles for ethical considerations, managing and underscoring authors' potential conflicts of interest, and conducting plagiarism, ghost and gift authorship checks to

combat paper mills, image manipulation, and the use of artificial intelligence tools like ChatGPT in inappropriate ways.

Our investments in support of scientific communication do not end when a peer reviewed article is published. We update articles for correction and addenda, update links, and conduct ongoing plagiarism and copyright protection to safeguard the integrity of the work and ensure articles are not modified or pirated in misleading and harmful ways. Upholding the version of record and providing the clarity necessary to easily distinguish between the version of record and earlier, less reliable versions of an article, is a key principle of scientific integrity. In order to build trust in science, readers must be able to easily identify and discover trusted peer reviewed content. To facilitate this process, we assign digital identifiers, provide metadata, conduct search engine optimization, track citations and other important metrics, and submit articles to abstracting, indexing, and discovery services. These valuable services support scientific integrity by pointing readers to the highest quality scientific publications and data.

Inadequate funding for Gold OA or the widespread use of immediate Green OA, especially through the so-called "rights retention strategy", have the potential to harmfully impact this important work in ways we have outlined throughout this response. At a time when concerns around misinformation — including on critical issues of science and medicine — have become a national priority, there is an urgent need for stakeholders that support scientific integrity to work together and uphold the role of objective, trusted information in a democratic society. Therefore, it is essential that federal policies related to publications ensure that scientists and publishers can continue producing and disseminating the trusted, peer reviewed, VoR of scientific articles by providing sufficient funding for researchers who choose to publish OA to support investments in publishing their works in high-quality journals that uphold scientific integrity.

4. How can NIST improve the plan to provide greater public access to NIST-funded research results?

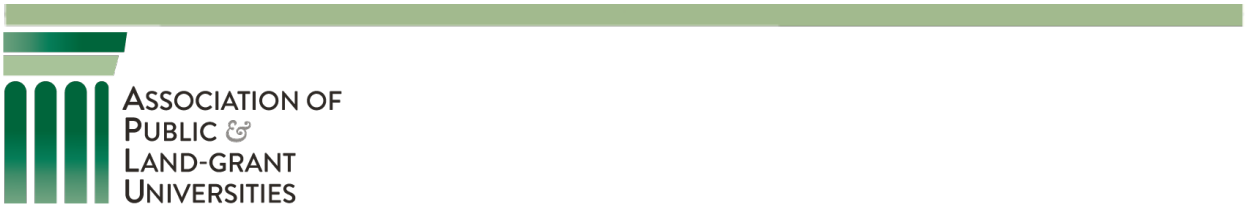
ACS is a participant in the Open Research Funders Group's persistent identifiers (PIDs) discussions. We regularly engage with developments around new PIDs and support best practice in ensuring the accurate and enduring tracking of all relevant aspects of the research cycle. We would welcome the opportunity to discuss with NIST, either individually or as part of a larger stakeholder group, how we are taking steps to increase the findability and transparency of research data, perhaps the most challenging object of PID activity. We have data policies and guidelines, consistent with principles of open science, to ensure results reported in ACS journals are verifiable, reproducible, and easily accessible to researchers. The ACS Research Data Policy provides best practice recommendations for data citation, data availability statements, and the use of appropriate data repositories. An evolving set of Data Guidelines by sub-field and data-type provides authors with specific instructions on how to make data available and comply with discipline-specific standards.

We are members of the Research Data Alliance, a community-driven initiative by the European Commission, NIST, the National Science Foundation, and Australia's Department of Innovation to build the social and technical infrastructure to enable open sharing and re-use of data. We have endorsed the Joint Declaration of the Data Citation Principles that provides a set of guiding

principles for data within scholarly literature, another dataset, or any other research object. ACS Publications has also signed the Declaration on Research Assessment (DORA) and made citation data for all ACS journals openly available.

Finally, we have created the ACS Research Data Center as part of ACS Publications evolution, experimentation, and innovation with new models of OA. It is designed to help researchers forge new partnerships, improve the visibility of their research findings, and facilitate the means by which they can disseminate their work to a wider audience.

We believe activity in this area represents a valuable opportunity for NIST to improve its *Plan for Providing Public Access to Results of Federally Funded Research*.



August 14, 2023

VIA Email: public-access@nist.gov

Katherine Sharpless
National Institute of Standards and Technology
100 Bureau Drive, Stop 4701
Gaithersburg, MD 20899–4701

ATT: APLU's Response to the *National Institute of Standards and Technology Plan for Providing Public Access to the Results of Federally Funded Research*

Dear Dr. Sharpless,

The Association of Public and Land-grant Universities (APLU) appreciates the opportunity to provide comments to inform NIST's *Plan for Providing Public Access to the Results of Federally Funded Research.* APLU is a research, policy, and advocacy organization dedicated to strengthening and advancing the work of public universities. With a membership of more than 250 public research universities, land-grant institutions, state university systems, and affiliated organizations, APLU's agenda is built on the three pillars of increasing degree completion and academic success, advancing scientific research, and expanding engagement. Annually, our U.S. member campuses enroll 4.2 million undergraduates and 1.2 million graduate students, award 1.2 million degrees, employ 1.1 million faculty and staff, and conduct $48.7 billion in university-based research.

Public research universities are committed to sharing their research findings, whenever possible, with the public as this is essential to ensure rigorous science and to maximize the impact of scholarship. To assist our member institutions in developing responses to public access policies, APLU, with the Association of American Universities (AAU) and supported by grants from the National Science Foundation (NSF#1837847 and #1939279) as well as the National Institutes of Health, convened workshops engaging researchers, senior research officials, librarians, chief information officers, and advocacy groups on advancing public access to research data and publications. These collaborative dialogues played a pivotal role in shaping our responses to this RFI from NIST, as well as informing our input regarding public access strategies for NIH and NASA.

We appreciate that NIST, as a recognized leader in setting standards, has provided invaluable guidance to the academic community on how to create a system of support for sharing research data in their *Research Data Framework.* They have been critical partners as the community of institutions, federal agencies, disciplinary societies, and publishers have grappled with key

challenges in creating a robust and equitable system of public access to research. NIST's *Plan for Providing Public Access to the Results of Federally Funded Research* further demonstrates its commitment. APLU provides feedback below on NIST's *Plan*.

APLU supports NIST's harmonized definition of scientific data as defined by OSTP
APLU supports that NIST uses OSTP's definition of scientific data, which defined scientific data as that which underlies peer-reviewed scholarly publications resulting from federally funded research. This definition of data creates clarity for researchers and institutions in determining when and what data must be shared.

Appreciate flexibility in where and how to publish
APLU appreciates that NIST's *Plan* allows researchers to share peer-reviewed and author's accepted manuscripts and that the *Plan* allows for reasonable publication costs, including submission, curation, and management of data, to be included in the grant.

Recommend expanding access to NIST's Public Data Repository to all NIST-funded researchers
NIST could further support its extramurally-funded researchers by allowing them to deposit their data in NIST's Public Data Repository. In the *Plan*, it is unclear if extramural researchers will be able to use this resource, and the *Plan* would be strengthened by including this clarification. Being able to deposit research data in NIST's Public Data Repository would help reduce costs and would address many of the equity concerns related to publishing research data funded by NIST.

Recommend clarifying mechanisms to comply after the award period
NIST's *Plan* should address how institutions and investigators may share research outcomes that are finalized after the close-out of the award when funds are no longer available. The lack of funds could impede researchers from sharing their findings in peer-reviewed academic journals or repositories, leading to reduced visibility and the potential marginalization of researchers from emerging research institutions. To ensure equitable dissemination, we suggest NIST explore options to 1) permit pre-payment of publication expenses, 2) allow institutions to retain allocated publication funds post-award for these required dissemination activities, or 3) provide supplementary funding for publication costs.

Recommend clarifying what scientific data is required
Under the "Requirements" section on line 77, it is not clear what scientific data must be shared. The plan could be made more clear by adding "NIST will also promote that" to "Other federally funded scientific data that is not associated with peer-reviewed scholarly publications but is expected to be useful to interested parties is similarly shared." As it is currently written, it is not clear that this will be encouraged but not necessarily required.

Thank you for providing the opportunity for the community to respond to the *National Institute of Standards and Technology Plan for Providing Public Access to the Results of Federally Funded Research.*

Sincerely,

Kacy Redd
Associate Vice President, Research and STEM Education Policy at the Association of Public and Land-grant Universities

American Physical Society
1 Physics Ellipse
College Park, MD 20740

August 11, 2023

Katherine Sharpless, PhD
National Institute of Standards and Technology
100 Bureau Drive, Stop 4701
Gaithersburg, MD 20899–4701

Dear Dr. Sharpless:

The American Physical Society (APS), the nation's largest physics membership organization and a leading publisher of peer-reviewed physics research, appreciates the opportunity to provide public comment on the *Draft NIST Plan for Providing Public Access to the Results of Federally Funded Research*. It is essential for NIST — and all the federal science agencies — to regularly engage with nonprofit publishers throughout the entire process of developing their public access plans. Professional society publishers, like APS, are vital to the US maintaining its global leadership in science, technology, and innovation, and implementation of the August 2022 OSTP memorandum could have significant and unintended consequences for APS and similar organizations. Implementation of the memo could also impact integrity and equity within the context of research dissemination and the broader scientific enterprise.

In this letter, we provide a brief overview of the Society, including its mission, publishing activities, and key open access efforts to date. We provide feedback on NIST's draft plan, highlighting areas of agreement and sharing our concerns, in particular, with researchers maintaining equity in their ability to publish.

APS is a nonprofit membership organization working to advance and disseminate the knowledge of physics through its leading research journals, scientific meetings, and education, outreach, advocacy and international activities. APS represents more than 50,000 members, including physicists in academia, national laboratories, and the private sector, in the United States and throughout the world.

The Physical Review (*Phys Rev*) journals published by APS comprise the premier family of peer-reviewed titles, and this year are celebrating 130 years of serving researchers in the physical sciences and adjacent fields. There currently are 17 *Phys Rev* journals that, taken together, publish approximately 20,000 peer-reviewed articles each year. Our flagship journal, *Physical Review Letters* (PRL), has published research leading to Nobel Prizes awarded in each of the last 12 years.

Unlike commercial publishers, APS directs all proceeds from its publishing program into advancing the Society's mission to disseminate physics and, in particular, to building and sustaining a competitive and diverse US STEM workforce.

APS supports the principles of open access (https://www.aps.org/policy/statements/09_2.cfm) and has been an open access (OA) leader for decades. In 1998, APS established one of the first fully OA journals in all of physics, *Physical Review Accelerators and Beams*. Today, all *Phys Rev* primary research journals offer an OA option or are fully OA. The Society also provides financial support for arXiv.org — a publicly accessible repository for preprints in numerous fields, including physics and mathematics — and was a founding member of CHORUS. Additionally, APS allows US high schools and public libraries to access our journal articles free of charge.

Given the Society's leadership in OA, we applaud and support many of the clear objectives towards advancing open science laid out in NIST's draft plan – a commitment to providing free public access to scientific research results; supporting governance of and best practices for managing peer-reviewed scholarly publications; ensuring effective access to and reliable preservation of NIST peer-reviewed scholarly publications; and enhancing innovation and competitiveness by maximizing the potential to create new business opportunities. We also appreciate the agency's understanding of the critical role high-quality publishers play in advancing open science, integrity, and equity in an enhanced public access landscape.

In review of NIST's draft plan, we are deeply concerned with the lack of acknowledgement of the fundamental risk to equity in researchers' ability to publish. To be clear, this concern is not unique to NIST's draft plan; it is also our primary concern with the recently released draft plans for the National Science Foundation and Department of Energy Office of Science.

Currently, any researcher — regardless of their resources — can have their research results published in a *Phys Rev* journal. During the last several years, researchers from approximately 800 institutions across the United States have published in *Phys Rev* journals, with the vast majority of authors choosing to do so at zero cost to them, either by publishing under the subscription model and adhering to a 12-month embargo, or via a funded gold open access program, such as SCOAP[3] or a read-and-publish agreement. These "zero cost to authors" options are generally made possible by those paying to read the content, *i.e.*, libraries and consortia globally.

Providing any author the ability to publish high-quality research in our journals is central to the Society's mission and essential to advancing science. But this ability is being put at risk by the August 2022 OSTP memo and similar policies being advanced in the UK and Europe; below we offer a brief explanation as to why.

As you know, high-quality publishers provide robust peer review and publishing services, develop high-quality publications, and invest in the broader publishing infrastructure, which includes metadata, persistent identifiers, and other components critical to open science. Publishing high-quality scientific journals and developing and maintaining the infrastructure necessary to do so requires financial support. Today, that support is largely provided by subscription fees paid by libraries and other institutions.

But maintaining that support, and our ability to continue as the premier US publisher of physics research, is now in jeopardy. In direct response to the August 2022 OSTP memo, nearly all of the federal science agencies' newly proposed public access plans will require that peer-reviewed scientific publications be made available free of charge immediately upon publication. This requirement will fundamentally undermine the traditional subscription model that has supported quality journals — including robust peer review and other practices that uphold scientific research integrity — for many decades.

To understand the impact of these new public access policies, APS performed an analysis on *Phys Rev*-published articles from 2015-21. This analysis showed that under the OSTP memo and Plan S, the percentage of *Phys Rev* journal articles that would be required to be immediately available upon publication would imperil subscriptions. For example, more than 60% of the articles published in PRL would have to be made immediately available. And should Canada and the remaining countries in Europe follow suit and implement guidance similar to the OSTP memo or Plan S, approximately two-thirds of all *Phys Rev* articles — and more than 80% of all articles published in PRL — would become immediately available upon publication.

Under such scenarios, it is clear that APS and other nonprofit publishers will experience a significant decline in the perceived value of their subscription offerings and a resulting decline in subscription revenue, and thus will need to introduce new financial models to sustain high-quality OA publishing and other services in support of advancing open science. **Stated another way, the costs associated with publishing high-quality, peer-reviewed publications would necessarily be shifted from readers (often by proxy, via subscribers) to authors (or their institutions and/or funders).** So while we agree that immediate open access will increase the impact and value of published research, we are deeply concerned about the impact on researchers/authors, in particular, those performing research with limited resources.

Unfortunately, to date, most of the federal science agencies' draft public access plans do not offer clear, viable solutions for maintaining equity for authors. Green open access — the public posting of accepted manuscripts at the time of publication — is regularly offered as a solution. But green open access does not include any financial model. In practice, green open access is subsidized by the subscription model, and thus dependent upon the support of librarians and other subscribers. **Absent continued subscriptions, green open access will not be sustainable.**

Under the agencies' draft plans, the inequities for some readers under the US research ecosystem's current model will necessarily be shifted to authors if an increasingly open access ecosystem is advanced without the federal government simultaneously providing the necessary funding to support new publishing models.

To help ensure that all US-based researchers can continue to publish in high-quality, nonprofit journals of their choosing, all federal science agencies must take the following steps as they review and revise their draft public access policies to:

- Follow NASA's lead and include a clear statement that the agency intends for researchers to pay to publish an article open access, and that grant proceeds may be used for such purposes.
- Include a clear statement that the agency's grant proposal decisions will be agnostic of research dissemination costs, including costs to publish articles open access.
- Allow authors flexibility in choice of license options for depositing peer-reviewed manuscripts, in order to allow authors to comply with the policies of recognized and reputable journals serving their fields of research.
- Avoid the incorrect assumption that adopting rights retention policies will enable researchers to achieve open access under a CC BY license at no cost. The policies of many publishers of trusted and influential journals, including APS, can only support authors required to retain copyright through gold open access options — rather than the subscription model, which requires the transfer of copyright from author(s) to publisher — that require payment of an article processing charge (APC) or other sustainable funding.

Additionally, the federal science agencies must be explicit in their annual budget request to the Office of Management and Budget by including additional resources designated to support researchers' costs to publish open access. The wide dissemination of research results is a critical step in advancing science. And while agencies are indicating that grantees can reprogram their current funding to cover

publication costs, this simple reprogramming — without providing additional funding to support publishing open access — will necessarily result in less funding for research.

In an increasingly open science landscape, reliable funding to support APCs for gold open access will undoubtedly be required as subscriptions inherently decline. Federal agency support will be critical to avoid simply shifting inequities from readers to authors in an otherwise desirable open science future.

Thank you for considering our comments as you and your colleagues work toward revising and updating NIST's draft plan. If you have questions or would like to further discuss any point provided in this comment, please do not hesitate to contact APS Director of Public Affairs Mark Elsesser (elsesser@aps.org; 202.846.8121).

Sincerely,

Robert Rosner
President, American Physical Society

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August 14, 2023

Katherine Sharpless
National Institute of Standards and Technology
100 Bureau Drive, Stop 4701
Gaithersburg, MD 20899–4701

RE: Docket No.: 230612-0147
Request for Information - Draft Plan for Providing Public Access to the Results of Federally Funded Research

The American Society of Civil Engineers (ASCE) is pleased to offer the following comments on the National Institute of Standards and Technology (NIST) request for public comment on the *Draft NIST Plan for Providing Public Access to Results of Federally Funded Research*, posted at www.nist.gov/open. The proposed plan was drafted in response to the White House Office of Science and Technology Policy (OSTP) guidance. The proposed rule was published in the Federal Register for comment on June 30, 2023, with the comment period closing on August 14, 2023.

Background

Founded in 1852, ASCE is the country's oldest civil engineering organization. Representing more than 150,000 civil engineers from private practice, government, industry, and academia, 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 55,000 pages of technical content each year. The ASCE Publications Division produces 35 peer-reviewed research journals (available both in print and online editions), conference proceedings, standards, manuals of practice, technical reports, and monographs under the ASCE Press imprint. ASCE's many other resources for practicing civil engineers include the 170,000-entry Civil Engineering Database, a complete publications catalog, a conference video collection, and the ASCE Library, providing online access to over 700,000 pages of journal articles and proceedings papers.

On August 25, 2022, the White House Office of Science and Technology Policy (OSTP) released a memorandum entitled "Ensuring Free, Immediate, and Equitable Access to Federally Funded Research" which establishes new guidance for improving public access to scholarly publications and data resulting from Federally supported research. This OSTP memorandum calls on all Federal Departments and Agencies to prepare new or updated Public Access plans to ensure the Public's immediate access to the results of Federally funded research, which will further advance research transparency

and advance U.S. economic competitiveness by raising awareness of new research discoveries and innovations.

ASCE Concerns

As stated in our letter of January 12, 2023 to Director Locascio, ASCE supports the principles of public access and endorses providing public access and enhancing dissemination of federally funded research to advance public health and safety and strengthen global quality of life. We acknowledge that the scientific and engineering communities must adapt to changing scholarly norms and must develop new dissemination models that address open access, however this must be done in a way that preserves 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 also 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.

As written, the memorandum implies that agencies may opt to require deposit of the accepted manuscript of their research paper (version that arises from peer review, but which has not yet been put through publishing process such as copyediting, XML markup, and so forth) or the version of record (final version published through publisher distribution channels) or may allow flexibility to the authors on this point. For society publishers that are heavily reliant on subscription revenues, a requirement to deposit the final version of record would more rapidly erode subscription value and force a swift shift to a fully Open Access (OA) business model reliant on article processing charge (APC) revenue from all authors. Such a hurried shift presents a couple of challenges:

- First, publishers will either need to provide APC waivers to authors without funding to cover the cost of publication in a fully OA business model (further inflating the APC rate for those who do have ability to pay, which will either require larger grant funding from the federal government or will result in less money available for research itself), or unfunded authors will be precluded from scholarly publication due to the barrier to pay, which presents equity challenges.
- Second, non-profit societies are largely not in a position to offset significant lost revenue with new business models as quickly as subscription revenue will likely decline, which will result in fewer programs and services to advance the various scientific and engineering professions they represent.

Each of these scenarios' present negative consequences on scientific and engineering professions and the research enterprise and could unintentionally penalize unfunded authors. ASCE strongly recommends that implementation of this OSTP memorandum focuses on author accepted manuscript and not version of record, therefore allowing flexibility to the author to protect researcher choice.

The memorandum leaves it to the agencies to determine whether publications will need to be deposited with broad re-use rights under licenses such as CC-BY or similar. Requiring liberal re-use rights under which third parties can re-use, redistribute, and create derivative works from scholarly publications for any purpose (including commercial) presents significant damage to publishers, particularly society and non-profit publishers. In such a scenario, large commercial technology-focused entities and competitive commercial publishers may legitimately use the deposited scholarly publications to create their own comprehensive research databases supported by advertising revenues, to the detriment and extreme danger of society publisher business models. Further, such actions—particularly creation of derivative works—could present imminent danger to public health and safety, whether due to inadvertent misinterpretation or nefarious intent. In its policy statement on Publication of Publicly Funded Research[i], ASCE "deems it 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 believes that any public access mandates must "protect against the potential abuse or misuse of scientific and technical information." ASCE strongly recommends that implementation of this OSTP memorandum does not include any attachment of re-use rights and allows for use restrictions to prevent endangerment of public health and safety.

Additional areas of concern for ASCE include:

- Expectations on publishers to aid their authors in depositing their underlying data.
- Potential requirements for enhancements in deposited publications to allow for equitable access (e.g., machine readability, broad accessibility for assistive devices, etc.), which would further drive up the cost of publication and therefore APCs.
- The leeway for agencies to apply public access requirements for content beyond scholarly publications in journals, to expand to outputs such as peer-reviewed conference proceedings and book chapters resulting from federal funding.

ASCE Response to NIST Questions

How can NIST ensure equity in publication opportunities?

Publishers have led and responded to the interest in open science by investing heavily in open science over the last 25 years, broadening and expanding the public's ability to understand and access the work of scientists and scholars. ASCE and other publishers continue to invest in new models and approaches to providing access, including experimentation with a variety of business models to support quality, sustainability, and equity. These experiences have demonstrated that there is not one best route to

providing access. A mixed ecosystem is likely to persist for some time, even as publishers, institutions, and funders move to support open science.

Flexibility is needed to promote diversity in publication, ensure author choice, avoid unintended consequences, and support access to publishing in ways that work for researchers. Different publishers may offer distinct approaches to provide access, each of which may be appropriate to the communities they serve, and each of which should be allowed as a method for researchers to ensure access to any article they author that reports on NIST-funded research. A diversity of publication outlets, enabled by flexible approaches to implementation of the NIST policy, supports diversity in research. ASCE advises that the NIST policy allows maximum flexibility for authors in sharing either their author accepted manuscript (via a repository) or version of record (via gold OA publication).

Regardless of the route to publication and public access, 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. To ensure equity for all researchers, such funding and guidance needs to be provided alongside other guidance for 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 APCs are not disadvantaged in the resources available for their research, student support, and other critical needs. All researchers must have options to meet their funder obligations, regardless of the journal they choose or the agreements their institution has with individual journals.

Encouragement and education of researchers is also key, as they will ultimately be responsible for ensuring that the articles that they write are available to the public. Experience with funder requirements and compliance around the world indicates that researchers are often confused about grant requirements, including on how and when to provide access to publications, and a significant percentage of researchers erroneously believe that it is an inappropriate use of grant funds to pay for publication.[ii]

Further, flexibility and diversity is needed with respect to licensing rights. When an author chooses to make their publication available via gold OA, ASCE publishes the version of record under a CC-BY license. This allows third parties to re-use, redistribute, and create derivative works from the article for any purpose (including commercial). The authors retain copyright to their articles in these situations, and therefore ASCE does not monitor reuse to ensure appropriate attribution, etc., is provided. In instances where authors decide that this sort of reuse is appropriate for their research, ASCE supports and provides publication venues via both hybrid journals and a newly launched fully Gold OA journal, *ASCE OPEN: Multidisciplinary Journal of Civil Engineering.*

As described above, ASCE believes the avenue to public access should be left to the researchers' decision. Should an author choose to make the author accepted manuscript accessible rather than the version of record, ASCE strongly recommends

that NIST's policy does not include any attachment of re-use rights and allows for use restrictions to prevent endangerment of public health and safety. Researchers themselves are best equipped to determine whether derivative works created from their article may present imminent danger to public health and safety, whether a result of inadvertent misinterpretation or nefarious intent.

Finally, in keeping with the previously referenced ASCE policy statement on publication of publicly funded research, ASCE as a publisher is keenly focused on preserving the scholarly value of the peer-reviewed version of record and protecting against the potential abuse or misuse of scientific and technical information. Equity in access requires that publications that are made available are accurate and trustworthy.

How can NIST ensure public access and accessibility to outputs of NIST-funded research?

Publishers invest significantly to ensure that articles are accessible in various human and machine-readable formats and are available to those with diverse needs. Many publishers have invested in technology and infrastructure to build towards, meet, or exceed Section 508 accessibility and have created a diverse ecosystem of accessible resources available to diverse audiences with or without assistive technologies. ASCE is committed to ensuring digital accessibility to the widest possible audience and its publications are hosted on an industry gold standard platform by which we endeavor to conform to WCAG 2.a Level A compliance with the W3C Web Accessibility Initiative (https://ascelibrary.org/accessibility). As described above, publishers must be able to recoup the expenses incurred for providing such formats and for evolving with current best practices and standards.

Publishers, including ASCE, have committed to and invested significantly in ensuring the findability of articles and research data. Additional efforts to support the use and development of persistent identifiers (PIDs) throughout the research ecosystem would bear additional fruit, including identifiers for articles and research data as well for funding agencies, grant awards, facilities, and the like.

Where possible, NIST should leverage existing standards and systems, as supported by publishers, institutions, and other stakeholders. The primary existing PID and metadata structure, enabled through organizations including CrossRef and DataCite, should be adopted and adapted as necessary to minimize disruption, promote compliance, and prevent unnecessary duplication of effort and investment in the scholarly communications system.

Publishers already invest heavily in creating persistent identifiers and machine-readable metadata that promote greater visibility of research findings and data, and these help to promote trust, reliability, and transparency for the scientific system. Cross publisher and industry initiatives around PIDs include researcher (ORCID), institutional (Ringgold), and funder (Open Registry of Funders). PIDS are embedded in our content workflows as standards across the majority of the scholarly communication ecosystem.

Embedding standards supports our infrastructure development to build better links between interrelated research outputs and improve visibility from funding through to publication. In general, PIDs used or recommended by NIST should be those used by the community, as those can be validated and maintained. Where NIST needs additional or bespoke PIDs, efforts need to be made to ensure they map well to other PIDs that are already well embedded in the ecosystem.

Specifically, NIST should support the use of community-adopted PIDs through the grant application process (e.g., ORCIDs for researchers, organization IDs for the institutions(s) affiliated with each researcher, and Funder IDs for the distinct funders of the grant). While organization IDs are not as well-established or robust as researcher IDs (with ORCID), there are several emerging options for organizations, and NIST should consider recommending one of the following PIDs to ensure harmonization and avoid unnecessary duplication in the scholarly record: Ringgold (a global organization identifier system); ISNI (ISO standard name identifier system); ROR (the Research Organization Registry); and Crossref's Funder Registry; along with ORCID. NIST should also ensure there are metadata fields for all of these.

Conclusion

ASCE supports NIST's goals in expanding public access to federally funded research, but advises that careful consideration be given to key decisions that may have serious ramifications for the financial viability of society publishers and professional societies, the proportion of funding available for research vs. remuneration of APCs, the representation of non-funded authors both within the US and abroad in the research literature, the preservation of peer review, and the protection of public health and safety.

Thank you for your consideration of our view, if we can be of further service, please do not hesitate to contact Martin Hight, ASCE Senior Manager for Government Relations at mhight@asce.org or 202-789-7843.

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[i] ASCE Policy statement 538—Publication of publicly funded research (https://www.asce.org/advocacy/policy-statements/ps538---publication-of-publicly-funded-research#:~:text=The%20American%20Society%20of%20Civil,the%20global%20quality%20of%20life)

[ii] E.g., nearly 1 in 6 in the 2016 *Pay It Forward Report* and 1 in 5 in the 2019 *Taylor & Francis Researcher Survey*

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ASME's Response to the Request for Public Comment on the National Institutes of Standards and Technology (NIST) Draft Plan for Providing Public Access to the Results of Federally Funded Research

Agency Docket No.: 230612-0147

August 14, 2023

Founded in 1880 as the American Society of Mechanical Engineers, ASME is a not-for-profit professional organization that enables collaboration, knowledge sharing and skill development across all engineering disciplines, while promoting the vital role of the engineer in society. ASME codes and standards, publications, conferences, continuing education, and professional development programs provide a foundation for advancing technical knowledge and a safer world.

With over 80,000 Members, our organization is one of the largest technical publishing operations in the world, offering thousands of titles and some of the most prestigious engineering content in 33 technical journals. ASME serves a wide-ranging engineering community through quality learning, the development of codes and standards, certifications, research, conferences and publications and other forms of outreach. We collaborate with 36 Technical Divisions who employ mechanical engineering principles in the development of many lifesaving and life- improving technologies such as robotic surgery, the artificial heart, prosthetic joints, diagnostics and numerous energy technology applications directly contributing to U.S. progress towards national science and engineering goals.

ASME journals provide extensive, diverse indexes of research articles that span the broad spectrum of engineering topics. ASME supports the goal of Open Access for taxpayer funded research and compliance with government and funder mandates for Open Access publication, including Plan S for European-funded research. ASME offers authors the option to publish their papers hybrid Open Access across all our journals or in the fully Open Access ASME Open Journal of Engineering with payment of an Article Publishing Charge (APC).

ASME continues to offer publication at no cost to an author through traditional subscription access, and we feel this is an important option to preserve for the scholarly publishing community, particularly for institutions and authors with limited financial resources. However, the White House Office of Science and Technology Policy's 2022 guidance, "Ensuring Free, Immediate, and Equitable Access to Federally Funded Research", would eliminate the subscription-based model, resulting in the need for new funding streams to support zero cost-to-author publication.

The peer-reviewed scholarly publications which are included in our journals are not the direct result of the expenditure of taxpayer funds; conversely, they result from a significant publisher investment. Over the years, ASME has dedicated significant resources in innovative platforms that enable exceptional digital peer-review, production, distribution, interoperability, and discovery of the latest scientific and scholarly works to ensure our publications are of the highest quality. 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 (annually); and comprised of over 308,000 technical papers and 2,400,000 technical pages.

The current 12-month embargo period allows publishers to recoup at least part of their costs by incentivizing subscriptions for readers who desire immediate access. The subscription model remains a fair and efficient tool for scholarly societies to recover costs associated with publication, including peer review, editing, disseminating, and maintaining increasingly complex and capable data libraries in perpetuity. The new OSTP policy would eliminate the ability to recoup any part of the costs incurred in publishing, leaving smaller institutions that are dependent on this model, including many non-profit organizations with public service missions, resource constrained and marginalized. Rapid implementation of a zero embargo mandate may force many smaller publishers into an APC centered business model. ASME recommends that implementation of the OSTP guidance focus on availability of author accepted manuscript rather than version of record, thereby allowing flexibility to the author and preservation of additional publication options for the research community.

ASME further supports the NIST Draft Plan for Public Comment approach of allowing flexibility for publication "immediately upon publication if law allows and no later than 12 months following publication if publisher policies permit". It is also critical that authors are provided new guidance on how to include reasonable costs associated with publication, including archiving, peer review, submission, curation, management of data, and special handling instructions which may be included in grant proposals or project plan budgets for contracts.

Pre-requisites for ensuring success of the OSTP's new policy across the complex U.S. science and engineering enterprise include:

- Development of economic and sociological impact study and analysis of new public costs resulting from the 2022 OSTP guidance, including scoping to address potential agency demands for content beyond scholarly publication in journals, such as peer-reviewed conference proceedings and other publications
- Development of new guidance to authors/researchers on how to budget for new publication and data management costs, including archiving, tagging, and accessibility requirements
- Development of policies to ensure researcher freedom to choose venue of publication, repository, and an appropriate re-use license
- Development of agency metrics and guidelines to support maximation of equitable access to funding

ASME supports sustainable open science by ensuring our peer reviewed scholarly publications are of the highest quality and integrity. By fostering their dissemination, we advance engineering and scientific research to ensure the United States remains globally competitive.

ASME's peer-reviewed journal articles are the direct result of our investments and our extensive collaborations with authors, which is why they are considered the "gold standard" of scientific communication. The ability to recoup our investment enables innovation, allows infrastructure to be developed (including archives and metadata), and provides incentives to try new approaches. Long-term stewardship of content also carries significant costs that are already being borne by publishers.

Any policy change requiring us to make our peer-reviewed publications immediately available for free without charging a fee is not economically sustainable for our organization, as well as other scholarly publishers. A new, sustainable funding model must include clear guidance on how private publication costs will be transferred to a new publicly funded model. The scholarly research and publishing enterprise is a very complex and intricate ecosystem. We must be able to recoup our investments in order to publish high quality peer reviewed journals and research articles, as well as to sustain collaborations of this nature.

How can NIST ensure equity in publication opportunities?

While immediate open access is often couched in terms of expanding access in equity terms, for researchers it threatens to create a pay-to-play system benefiting well-resourced institutions and researchers. While large corporations and well-funded universities may be able to absorb new R&D publishing and administrative costs, smaller colleges and companies will struggle to function. For HBCUs, rural institutions, community colleges, and undergraduate-only programs, this policy will further strain already-tight research budgets and marginalize their contributions.

How can NIST ensure public access and accessibility to outputs of NIST-funded research?

Current proposals fail to sufficiently address guidance and budget forecasting for the crucial funding mechanisms which will allow for the peer-reviewed publication of vital research. We encourage Congress and the Administration to closely coordinate with the research and scholarly publishing communities on clear guidance supporting equitable solutions to providing the necessary funding streams to meet the expanded public policy objectives of the revised OSTP Public Access policy.

How can NIST monitor impacts on affected communities—authors and readers alike?

ASME is concerned that current guidance does not sufficiently account for transition to a model where subscriptions are largely eliminated. There is already substantial evidence of subscription cancellation and market consolidation in the face of open access mandates, both in Europe and in the United States. Assertions that expanded Open Access policy objectives can be achieved without any new costs are not supported by any exploration of the state of the scholarly publishing industry. Agencies should also develop planning to account for new peer-review costs, data management costs, including re-investment into expanded public-private databases, costs for maintenance of versions of record and related open access data repositories.

How can NIST improve the plan to provide greater public access to NIST-funded research results?

Open Access APCs are likely to be subject to annual discretionary appropriations from Congress and individual institutional budgetary decisions. Federal agency leaders should develop transparent economic modeling to support elimination of the subscription revenue stream from scholarly publications supporting federally funded researchers, including guidance to researchers on how to account for new open access policy implementation costs. We believe helping researchers understand and budget for costs, as well as NIST and other federal agencies seeking robust and sustainable funding from agency leaders and Congress is the best way to ensure authors at all institutions have a wide array of options to communicate their research.

The United States world-leading professional and scholarly publishing sector provides a strong foundation for scientific integrity globally, but this sector requires a strong enabling framework of copyrights and intellectual property protections to sustain it, especially in the face of growing technological means of undermining existing copyright protections. It is important that federal agencies do not force researchers into untenable rights or licensing agreements that could suppress researcher choice in how they communicate their research. Researchers need flexibility, including non-commercial, non- derivative versions that allow them to protect the integrity of their work. Agency requirements restricting authors' ability to license their rights, for example through a rights retention mandate, would significantly limit authors' options to bring their work to the scientific community, thereby increasing costs and limiting equity options.

An industry-university-government partnership is essential to the progress of science, engineering and education, and we look forward to working with the NIST to ensure that scientific information itself

remain free from political interference to the maximum extent possible. As agencies consider societal communication of scientific and technical information, it is critical that science and engineering communicators have a healthy degree of freedom of choice in how and where they can publish, as well as separation from the appearance of undue government influence in the preparation and publication of scientific information. This issue is especially salient as society struggles with scientific disinformation and mistrust in government institutions.

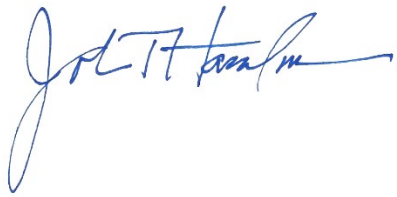
The erosion of copyrights for independent technical and scholarly publishers risks driving further consolidation of the publishing industry into fewer distribution mediums, a dynamic fundamentally at odds with maintenance of a healthy, competitive, innovative, and independent scholarly publishing ecosystem.

ASME continues to accelerate public access while advancing engineering and technological research to ensure the United States remains a global leader in engineering innovation. 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 scholarly publishing community and civil scientific societies or research organizations not supported by federal funding.

ASME supports the goal of significantly enhancing public access to federally funded scientific research, but cautions that careful consideration be given to decisions that may have serious implications for the financial sustainability of scholarly publishers and professional societies, the availability of public funding to support enhanced public access goals, the accessibility and equitability of research funding, the preservation of the peer review process, and the independence of scientific publishing from undue political influence.

Thank you for your consideration of our views. If we can be of further assistance, please do not hesitate to contact Paul Fakes, ASME Director of Government Relations, at FakesP@asme.org or 202-785-7480.

Sincerely,



John Hasselmann
Managing Director, Global Public Affairs
ASME

Submitted through: https://www.regulations.gov/commenton/NIST-2023-0002-0001

August 11, 2023

National Institutes of Standards and Technology
100 Bureau Drive
Gaithersburg, MD 20899

RE: Crossref Comments in Response to NIST–2023–0002, "Draft NIST Public Access Plan, 2023"

To Whom It May Concern:

I'm writing on behalf of Crossref, as its Executive Director, in response to the "Draft NIST Plan for Providing Public Access to the Results of Federally Funded Research" issued on June 30, 2023.

Crossref is a non-profit organization that for more than twenty years has enabled and promoted the use of persistent identifiers to enable researchers to find, cite, link, assess, and reuse research objects.

We have done this by developing and maintaining open scholarly infrastructure, following the Principles of Open Scholarly Infrastructure (POSI) and the FAIR principles (Findability, Accessibility, Interoperability, and Reuse), that support open research. The service we are best known for is enabling the registration and dissemination of open metadata and persistent identifiers (DOIs - Digital Object Identifiers) for many objects and resources related to scholarly research: journal articles, books, book chapters, preprints, datasets, standards, grants, and many other artifacts. We have over 18,000 members (including universities, libraries, government agencies, government and private funders, museums, scientific societies, and publishers) from 150 countries worldwide, who have so far created metadata for over 144 million scholarly research objects, and these Crossref DOIs are resolved (clicked by humans and followed by machines) over 1 billion times per month. We provide additional services that enable the community to make connections between objects or to assess their trustworthiness, and our fully open metadata and API enable anyone interested in research to incorporate it into their own

systems. We also maintain dedicated feeds to key partners such as ORCID, with over 3 million authors having now granted us permission to programmatically add works information to their ORCID records, and CHORUS. Crossref was a founding member of ORCID, and founded and governs ROR (the open organization registry) along with DataCite and the California Digital Library.

Crossref welcomes NIST's Public Access Plan and fully supports its mission and the objectives of the Public Access Plan. In particular, Crossref supports and is willing to engage with NIST on the objectives with respect to metadata and identifiers mentioned in the following section:

....Publicly available metadata associated with both narrative and data publications, intramural and extramural, will include all author and co-author names, affiliations, sources of funding, date of publication, and unique persistent identifiers (PIDs) for all authors, institutions/organizations, funders, and research outputs as available. Metadata associated with publications will be publicly accessible and reusable. Capabilities of NIST systems to store PIDs will evolve over time; currently NIST staff are required to obtain and use an ORCID, and our IT systems collect these as well as digital object identifiers (DOIs) for published data, code, and papers. NIST mints DOIs for data and code stored in NIST repositories.

Crossref is the main DOI Registration Agency assigning persistent identifiers and metadata for scholarly outputs, including journal articles, books, book chapters, preprints, datasets, standards, grants, and many other artifacts. Crossref also maintains the Open Funder Registry of persistent identifiers for all types of funders globally. The Crossref metadata includes ORCID IDs for authors and DataCite DOIs for data and software citation and plays an important role in maintaining the scholarly record that can be used by funders to assess research outputs.

Crossref metadata is made openly available without any reuse restrictions via a public REST API and is integrated into thousands of scholarly information systems and services, including Pubmed and Pubmed Central, and CHORUS. Crossref's open metadata includes basic bibliographic metadata, DOIs, abstracts, references, funding and licensing information, corrections and retractions and other open identifiers such as ORCID IDs for researchers, DataCite DOIs for research data and ROR IDs for organizations. This enables a connected, discoverable scholarly record - what we call the research nexus.

Crossref is ready to work collaboratively with NIST and other open scholarly infrastructure organizations on better integration between all the relevant systems to ensure that NIST awards and grants and the outputs associated with them are fully connected with the global research nexus.

In section "13.2 Infrastructure" on page 16 the 2nd point states: *Configure NPS and EDI to collect PIDs for awards, funders, research outputs, and individuals recognizing that some PIDs do not currently exist.*

To address this point, Crossref recommends that NIST assign Crossref Grant DOIs to its grants in order to connect them to the open scholarly infrastructure and the open research ecosystem that it enables across the world.

The Grant DOI program is unique to Crossref and has been ramping up for the last couple of years. We currently have over 76,000 registered grants, including 8,700 from the US Department of Energy's Office of Scientific and Technical Information (DOE-OSTI), with other US federal agencies actively exploring membership and grant registration.. Crossref is ready to fully support NIST registering its grants with us so they too can connect with the global network of research metadata.

In section "13.3 Processes" the 2nd point states "*Modify NIST's Award Conditions of grants to require data publication in an appropriate repository at the time of manuscript publication, acknowledgment of funding sources with PIDs where available, and release of standalone data within three years*".

Assigning Crossref Grant DOIs to NIST awards and grants will facilitate and streamline the "acknowledgement of funding sources with PIDs." Assigning Crossref Grant DOIs will also make it easier for Authors and Awardees to comply with requirements of the Public Access Plan. For example, an Author can provide a Grant DOI during the article submission process and this will enable the publication to pull in the ORCID for the authors, the RORs for the funder and their institution for extramural Awardees, which means the Author doesn't need to rekey all this metadata.

In response to the OSTP memo in November 2022, Crossref outlined in detail how funding agencies can meet OSTP (and Open Science) guidance using existing open infrastructure, which includes Crossref, and also ORCID, ROR, and DataCite.

We look forward to working with the NIST alongside our work with other agencies on meeting the shared goals of the OSTP memo.

Ensuring free, immediate, and equitable access to metadata that captures the scholarly record is an essential part of meeting the goals of the NIST Public Access policy and the OSTP memo and supporting Open Science globally.

Ed Pentz
Executive Director
Crossref

Elsevier's response: NIST's Draft Plan for Providing Public Access to the Results of Federally Funded Research (88 FR 42302)

In the following document, Elsevier addresses the four questions posed in NIST's request for information. We welcome the opportunity to work alongside the OSTP, NIST, and the broader research community, to advance open science. We support NIST's commitments to equity and open science, which align with Elsevier's goals. Elsevier seeks to advance the recommendations of the Public Access Memo issued by OSTP via mechanisms that are durable and sustainable for the entire research community. We endorse approaches that realize the clear benefits of widening public access while avoiding unintended consequences, including for equity. We appreciate your consideration of our comments at this critical juncture, and we look forward to working together to pursue models that safeguard the impact, quality, discoverability, and accessibility of research.

1. How can NIST ensure equity in publication opportunities?

Elsevier shares the White House Office of Science and Technology Policy's (OSTP's) and NIST's goals of ensuring the wide availability of trustworthy and impactful research findings, as well as equity in publication opportunities for NIST-supported investigators. At Elsevier, we look forward to working collaboratively with NIST and other key stakeholders to achieve these goals principally via the gold open access model. With support from NIST, we believe this will best ensure equity in publication opportunities for all.

We recognize that there is currently no 'one-size fits all' publication model that meets the diverse needs, preferences and circumstances of authors, institutions and funders - in the US or indeed globally. This is why we have long offered both the gold open access, or pay-to-publish, model as well as the subscription, or pay-to-read, model, so that institutions and authors can choose the appropriate route for them depending on their funding environment, discipline, and research goals. We therefore respect – and generally reflect – NIST's agnostic stance in its draft policy as to publication model, we understand the need for choice, and we support free market dynamics to sustainably achieve shared objectives on public access.

Where NIST requires its researchers to make their work freely and immediately available, at Elsevier we will enable this through the gold open access model. This is a well-established and sustainable mechanism to advance public access to research, that allows publishers to be recompensed for the substantial value-added investments they make in peer-reviewed versions which are valued by researchers. These cover publisher services including ensuring the quality, discoverability, and accessibility of research in perpetuity; safeguarding the integrity of published research by effectively managing editorial and peer review processes; and applying innovative technology towards continually expanding and enhancing all these services, as well as tackling emerging issues, including misinformation and fraud.

All stakeholders should work together to develop equitable and sustainable solutions to enable gold open access publishing. At Elsevier we will draw on our experience of co-creating equitable and sustainable transformative agreements that already enable gold open access publishing for nearly 2,000 institutions. The gold open access model is widely adopted by the research community and implemented across various countries, with transformative agreements with publishers demonstrated

to be key to this success. These include research intensive countries such as the UK, Germany, Italy, Spain, Poland, and the Netherlands, where so-called 'combined' or 'read and publish' agreements with publishers have contributed to achieving immediate access to research through gold open access. We also co-create innovative commercial models such as our pilot with California Digital Library, which works to meet gaps in funding for publication fees in an equitable manner.

Additionally, we are engaged in ongoing work to mitigate the new inequities that unfortunately emerge in an open access world. We have vast programs of waivers/discounts on publishing, which are automatically granted as appropriate, and we waived 50% of gold open access articles in 2022. We are also developing a standard policy of differentiated pricing for APCs to low- or middle-income countries to take into account their purchasing power.

To further ensure equity in publication opportunities for all NIST-supported investigators, particularly those based at institutions without transformative agreements in place, we suggest that all grantees should be provided with clear and consistent guidance on budgeting for the full cost of disseminating their research, and funds for publication should remain available after the end of the grant period. In so doing, all grantees will be afforded the same benefits of gold open access, including increased readership to maximize the reach of their work, a policy goal shared by NIST and OSTP. We therefore welcome that NIST's actions in response to the 2022 memo include issue clear guidance for NIST staff and NIST-funded extramural researchers to help them comply with NIST policies (line 367), and we would encourage specific guidance around budgeting to be included as part of this.

We further welcome that NIST's draft policy enables researchers to charge reasonable costs for publishing gold open access against their awards (line 124). Availability and take up of this funding will be critical for grantees to be able to comply with NIST's immediacy policy across the full spectrum of available journals, so they are supported to publish in the journal that will provide the best visibility for their research. Without funding to publish gold open access, grantees seeking to comply with NIST's policy would only be able to publish in a limited number of journals that either allow researchers to immediately share research they publish under the subscription model, or that offer free open access publishing. These are often lower quality journals and regionally or institutionally focused titles.

Like the vast majority of journals and publishers, we will be unable to support approaches which rely on subscription-funded content being made freely and immediately accessible, including those which require authors to retain copyright via 'rights-retention'-like strategies. This is because such approaches will prove unsustainable in the long-term, given they do not provide a mechanism to recompense publisher investments**.** By publishing gold open access, researchers can make their work immediately and publicly available, retain their copyright in that work, and ensure a sustainable publication model.

Finally, we understand that mitigating inequities in the global research community requires that we look beyond publication models, and we have therefore undertaken a range of actions to identify issues and develop solutions towards equity and inclusion in research. We have done this both as an individual publisher, supported by our I&D Advisory Board, and as a sector via the Joint Commitment for Action on Inclusion and Diversity in Publishing. We work with our editors and reviewers, and the broader publishing community, to nurture inclusion and diversity, to widen participation in journals at all levels, and to ensure that researchers' work is assessed fairly on its scientific merits. We will continue engage with the research community to mitigate global inequities, and would welcome input from partners,

such as NIST, to collaboratively enhance this offering and support NIST's and OSTP's goals of equity of opportunity in research.

2. How can NIST ensure public access and accessibility to outputs of NIST-funded research?

Access

We have a proven track record of working to increase access to research. Over many years we have improved access in the subscription model through: our participation in Research4Life through which we provide free or discounted reading and publishing to researchers in over 120 low- and middle-income countries; providing free access to health-related articles for patients and caregivers and establishing dedicated emergency resource and information centers, most recently for the Novel Coronavirus (COVID-19) and Mpox; supporting authors to share their publications peer-to-peer; and supporting interlibrary loans. These are all made possible in part through the revenue generated through subscriptions.

As outlined in our response to Question 1, at Elsevier, we will enable NIST's grantees to meet its public access policy goals, and fully support equity in access, by offering the gold open access model.

Looking beyond the research article, we further support and enable researchers to freely and immediately share the full range of their research outputs, including preprints. Where shared work has not undergone peer review and other validation steps, this should be made transparent to readers and the public to ensure any potential limitations are considered in the interpretation and application of the work.

Additionally, transparent and FAIR sharing and public access to the data underlying research output enables research to be validated, supporting the reproducibility and integrity of research. We support NIST's requirements for grantees to adhere to Data Management Plans (line 104) and are committed to collaborating with stakeholders from across the research community, and to playing our role in enhancing data sharing practices to support and enable researchers and institutions to store, share, discover and effectively (re-)use data. At Elsevier we provide infrastructure and workflows that underpin this with an end-to-end research data management workflow, from providing Mendeley Data, an NIH Generalist Repository Ecosystem Initiative (GREI)-supported open and free generalist repository, to Data Monitor, which enables institutions, and ultimately funders, to track and monitor compliance with data sharing mandates. During our submission process we prompt and enable authors to share links to their datasets, made available in a repository of their choice, and to provide data availability statements in their publication.

In line with NIST's goals for "publicly accessible and reusable" metadata (line 90) Elsevier surfaces metadata fields and persistent identifiers (PIDs) to support discoverability, access, and compliance monitoring by research institutes and funders. We already open a number of metadata fields for articles and their references within Crossref, for research published with Elsevier. Where there are a range of identifiers in use across the industry, we enable interoperability, for example, users can import their Scopus profiles into ORCID or link ORCID identifiers to Scopus profiles. We are actively participating in community discussions and initiatives on these topics, such as those led by the Open Research Funders Group.

We welcome further dialogue and collaboration with partners in the research community, including NIST, to continue to build on the supporting initiatives outlined above.

Accessibility

At Elsevier, our accessibility policy underpins our commitment to consistently and proactively work to make our products fully accessible to all users, regardless of physical abilities. These activities all require substantial investments and will support NIST in ensuring that NIST-funded research outputs are accessible.

All the content Elsevier publishes across its journals and books is hosted on the ScienceDirect platform. Our investments in our ScienceDirect content platform, have led to it being ranked the #1 most accessible homepage on the internet by the 2023 WebAIM million report; and Elsevier has also been designated Globally Certified Accessible (GCA) by the Benetech Born Accessible initiative, with our content scoring 100% in the assessment. ScienceDirect is also completely free to search and browse in a number of ways; it serves around 50 million unique monthly users of which over 60% are not institutional customers, demonstrating that its use extends far beyond subscribers. All readers are further signposted to related relevant articles to help them continue their search and deepen their understanding of a particular topic.

When NIST-funded research is made available on ScienceDirect it is therefore findable and accessible to a greater group of potential readers, thereby helping that work to achieve the greatest reach and impact, and helping advance research progress and efficiency so that funders such as NIST can maximize the value of their investment in research.

Ensuring accessibility for all users will be key to achieving NIST's goals of ensuring the wide availability of trustworthy and impactful research findings. We welcome further engagement with stakeholders from across the research community, including NIST, to explore best practice, standards, and ways of working to promote accessibility.

3. How can NIST monitor impacts on affected communities—authors and readers alike?

We share NIST's view that it is imperative that policy change does not result in inadvertent risks or impacts on readers or researchers. We welcome discussion on how NIST might leverage Elsevier's data and research analytics capabilities to explore these questions.

Elsevier's International Center for the Study of Research (ICSR) aims to further the study of research and thus to contribute to the evidence base supporting the practice of research strategy, evaluation and policy. We work with key stakeholders to develop research questions that can be addressed through qualitative and/or quantitative approaches, including using the rich datasets, including Plum Metrics and Scopus, and advanced analytics available in the ICSR Lab. We would be glad to collaborate with NIST on research questions to assess the impact of policy developments.

We also have specific tools we can deploy. We note NIST's plans regarding compliance monitoring under section 8 (line 457 onwards) and elsewhere in the draft policy. Data Monitor, also referenced in our response to Question 2, enables institutions, and ultimately funders, to track and monitor compliance with data sharing mandates. We work with institutions and funders globally to deploy Data Monitor and

devise strategies to promote greater data sharing. We would welcome the opportunity to discuss how we could support NIST in this area.

Finally, we have identified several themes that we recommend NIST monitor as its policy is implemented over the coming years.

The quality and integrity of research, that underpins advances in research and ultimately trust in science.

As addressed in our response to Question 1, gold open access is a well-established and sustainable mechanism to advance public access to research, that allows publishers to be recompensed for the substantial value-added investments they make in peer-reviewed versions. Among other outcomes, these investments safeguard the integrity of published research by effectively managing editorial and peer review processes and enable publishers to continuously innovate to tackle emerging issues, including misinformation and fraud. These qualities are vital for readers and for users of content who go on to undertake their own research. Given that research is iterative, the positive impact of publishers' investments is long-lasting and serves to advance science and public confidence in research.

Researchers' ability to publish their work in journals that reach the right audience, affording researchers opportunities for showcasing and collaboration, that serve to advance their professional career and personal growth.

As outlined in our response to Question 1, ensuring researchers are provided with funding and clear and consistent guidance to budget for the full cost of disseminating their research is critical to safeguard authors' freedom of choice over where to publish, enabling them to select the journal that offers them the greatest reach, relevant readership, and impact. Without funding to publish gold open access, grantees seeking to comply with NIST's policy would only be able to publish in a limited number of journals that either allow researchers to immediately share research they publish under the subscription model, or that offer free open access publishing, which are often have lower quality control for peer review and lack safeguards to ensure the research remains available in perpetuity.

We would welcome the opportunity to work with NIST, other federal agencies, research leaders and librarians, to support with education on how to meet federal agencies' public access requirements in Elsevier journals. We are also committed to working with institutions that express an interest in developing transformative agreements, and to innovating on commercial models such as in our pilot with California Digital Library.

We recognize the importance of providing information to the research community to help them make data-led decisions, including insights researchers need in determining the best home for their research. This is why we already make publicly available information on our pricing, which follows the underlying principle of pricing lower than the market for like-for-like quality, and on our journal offerings (example). We hold ourselves accountable for continuing to build on this transparency across the more than 2,800 journals we publish. We welcome views and will continue to ask for feedback from the research community, including NIST and its grantees, as we enhance this offering, to provide helpful and meaningful insights to the communities that we serve.

Researchers' compliance burden and ability to focus on their research undertaking.

It should be noted that, when publishing gold open access with Elsevier, researchers' work is immediately and publicly available on our ScienceDirect platform with all the accessibility benefits that affords, as outlined in response to Question 2. This happens without the author needing to intervene in any way or take any additional steps, reducing potential compliance burdens on researchers, and enabling their primary focus to remain on their research undertaking. Researchers can further leverage Plum Metrics, which we employ on ScienceDirect (and Scopus), to assess and report on the reach and impact of their work across broad channels.

4. How can NIST improve the plan to provide greater public access to NIST-funded research results?

We strongly urge NIST to look beyond access as the end-goal and to ensure provision in its policy for the following considerations. Pursuant to line 342 of NIST's draft policy, we welcome a dialogue with NIST to discuss and exchange ideas on these topics and more as NIST continues to develop its policy.

Discoverability, accessibility and integrity:

We suggest that NIST pursues policy approaches which ensure that research is findable, accessible to a broad readership regardless of physical abilities, and trusted. As addressed in previous questions, gold open access is a well-established, sustainable and scalable approach to achieving these aims. Open science practice, including preprint and research data sharing, will further contribute to research discovery, as well as research validation, as explained below.

Context setting:

Researchers may benefit from a more extensive description of research data that is in scope of NIST's policy, for example encompassing software, code, methods, and protocols, that will, taken together, place their research in context and support reproducibility practices. Where discipline-specific repositories are unavailable, NIST may refer to Mendeley Data, which accommodates a broad range of data outputs, of up to 10 GB per dataset, thereby leveraging existing federal agency investments in GREI. NIST may further reflect on ways to ensure promote utility, and thus impact, of this shared research data, by ensuring it is accompanied by clear information describing its development and application. For example, Elsevier's open access Research Elements journal suite addresses precisely this need.

Archiving to ensure access in perpetuity:

Reliable archiving for perpetual access is vital to support preservation of the minutes of science for future generations, and should be a consideration for NIST as it guides its researchers towards journals and platforms (building on line 335 of NIST's draft policy). At Elsevier, we have a digital archiving policy that outlines how we support the permanent availability and preservation of scholarly research and ensure accessibility by converting and upgrading digital file formats to comply with new technology standards. We work in partnership with organizations, including CLOCKSS and Portico which archive all of Science Direct, and with Data Archiving and Networked Services (DANS) to preserve all published datasets to Mendeley Data. We also maintain our own digital archives.

Translation:

Researchers use discipline-oriented terminology which is often impermeable to the public or even to researchers operating in other disciplines. At Elsevier we provide media access to journal articles to enable science journalists to cover research publications for the public. We have also provided guidance to researchers on preparing lay summaries, and undertaken initiatives and pilots to translate research for an interdisciplinary and/or non-researcher audience. We are keen to collaborate with the research community, including NIST (building on line 329 of NIST's draft policy), to provide meaningful access to the full spectrum of community groups, including civil society.

From access to impact:

Finally, we would be interested to collaborate with NIST to benefit society through new creative approaches, as well as by drawing on our existing initiatives. For example, the Tasmanian Societal Impact Model (TSIM), an analytical framework for measuring and testing the various ways to make a difference in society, could be applied at the funder level to enable NIST to meet unaddressed or emerging societal challenges.

Contact:

For further queries, please contact Victoria Eva, SVP Global Policy & Industry Relations, Elsevier Limited. Email: v.eva@elsevier.com.

August 10, 2023

National Institute of Standards and Technology (NIST)
100 Bureau Drive, Stop 4701
Gaithersburg, MD 20899–4701

Dear NIST,

As the professional home of over 150,000 US members of IEEE, the world's largest technical professional organization dedicated to advancing technology for the benefit of humanity, IEEE-USA appreciates the opportunity to respond to the NIST Plan for Providing Public Access to Results of Federally Funded Research Draft for Public Comment. IEEE's not-for-profit scholarly publishing plays a crucial role in advancing engineering and technology.

In 2013, OSTP guidance directed federal public access efforts with a 12-month embargo period. However, the August 2022 OSTP guidance changes this federal policy to require immediate public access to technical articles reporting results from federally funded research, without any embargo period. Unfortunately, this shift in federal policy disproportionately affects not-for-profit scholarly publishing and may render several IEEE activities that advance the scientific and engineering enterprise unsustainable (e.g., K-12 STEM efforts, development of communities for underrepresented populations, and the launch of new journals and professional conferences in bourgeoning and emerging technologies).

IEEE-USA strongly believes in protecting the copyright and intellectual property rights of authors and publishers. While we have concerns regarding the August 2022 OSTP guidance on public access, we appreciate that the updated NIST public access plan seems to acknowledge that aspects of the OSTP guidance potentially conflict with Federal regulations on intangible property (2 CFR §200.315 Intangible Property). The updated NIST plan requires that the final peer-reviewed and accepted manuscript be freely available…*"if law allows and no later than 12 months following publication if publisher policies permit."*

NIST can improve access to research results and greater ensure equity and accessibility, by working with not-for-profit publishers and those supporting scholarly and professional organizations. IEEE supports open science and currently offers more than 30 technically focused fully open access journals across a wide range of fields. Additionally, IEEE has pledged to transition its full portfolio of more than 160 hybrid journals to eventually become fully open access. IEEE-USA hopes that NIST and other government agencies recognize the vital role of non-profits in disseminating research results and advancing knowledge. Society benefits from the ability of IEEE and other not-for-profit scholarly publishers to develop and launch technical publications that ensure the quality and integrity of the scientific record and maintain their archival preservation. Collaborative efforts can lead to more effective and sustainable solutions that balance public access and the protection of intellectual property rights, while enriching US research.

Sincerely,

Eduardo F. Palacio
2023 President, IEEE-USA

SPARC
1201 Connecticut Ave NW, #608 • Washington, DC 20036
(202) 630-5090 • www.sparcopen.org

August 14, 2023

Dr. Katherine Sharpless
Open Access Officer
National Institute of Standards and Technology
100 Bureau Drive, Stop 4701
Gaithersburg, MD 20899

Submitted via www.regulations.gov

Re: Docket Number: 230612-0147

Dear Dr. Sharpless,

Thank you for the opportunity to provide input on NIST's updated Public Access Plan. We are writing on behalf of SPARC, a non-profit advocacy organization that supports systems for research and education that are open by default and equitable by design. Our membership includes over 200 academic and research libraries across the U.S., with institutions ranging from large research intensive universities to community colleges. We believe that sharing knowledge is a human right, and that everyone should be able to access, contribute to, and benefit from the knowledge that shapes our world. Our members are committed to supporting equitable systems of research and education, and we appreciate the opportunity to provide feedback on NIST's plan to implement the landmark 2022 OSTP Memorandum on *Ensuring Free, Immediate, and Equitable Access to Federally Funded Research*.

NIST's updated plan is an important step in implementing the provisions of the 2022 OSTP Memorandum in pursuit of its mission to promote U.S. innovation and industrial competitiveness. Our responses to the questions outlined in the *Federal Register* notice offer additional suggestions to further strengthen the plan and ensure research funded by NIST is made immediately available, with no embargo, to the public.

Question 1: How can NIST ensure equity in publication opportunities?

SPARC strongly supports the OSTP Memorandum's emphasis on ensuring equity in contributing to, accessing, and benefitting from the results of federally funded research, and we appreciate NIST's specific attention on how to ensure equity in publication opportunities for its funded authors. To ensure equity in publication opportunities, NIST should provide authors with compliance options that do not present financial barriers. To this end, NIST's plan and associated policies and guidance should clearly state that authors can fully comply with its public access policy at no cost by depositing their author's accepted manuscripts into PubMed Central (PMC) or any other agency-approved repository.

Further, NIST should clarify that any fee that authors may be asked to pay is a publication fee, and not a fee required by NIST for compliance. It is critical that authors do not conflate compliance with article processing charges (APCs), which create significant barriers for less-well-resourced authors and institutions to make their research available.

NIST should highlight the diversity of publication models available to authors who may face financial barriers in paying for APCs—including Subscribe to Open (S2O) and Diamond Open Access. Additionally, institutional repositories run by libraries and other research institutions generally do not charge authors to deposit articles or manuscripts, and can play an important role in easing compliance burdens on authors, improving discoverability of research outputs, and providing long-term preservation support. Therefore, we strongly recommend that NIST allow for the deposit of publications into other repositories beyond PMC, and suggest that NIST utilize the guidance set out in the U.S. Repository Network's Desirable Characteristics of Digital Publications Repositories.

NIST's efforts to ensure equity in publication opportunities for its investigators naturally align with the critical work of the National Science & Technology Committee's (NSTC) Subcommittee on Equitable Data. SPARC strongly supports the Subcommittee's recommendation to "Build Capacity for Robust Equity Assessment for Policymaking and Program Implementation," and we recommend NIST coordinate the implementation of its public access plan with the NSTC Subcommittee and the Department of Commerce's Equity Action Plan. Relatedly, we appreciate NIST's continued engagement in the National Academies' Roundtable on Aligning Incentives for Open Scholarship to promote the growth of sustainable, equitable open scholarship policies and practices and encourage NIST to engage with the Higher Education Leadership Initiative for Open Scholarship (HELIOS) to align the agency's grant review process with efforts to recognize more equitable research sharing activities.

Question 2: How can NIST ensure public access and accessibility to outputs of NIST-funded research?

The OSTP Memorandum asks agencies to "make federally funded publications, data, and other such research outputs and their metadata...findable, accessible, interoperable, and reusable to the American public and the scientific community in an equitable and secure manner." To meet

these requirements, we recommend that NIST require that all publications resulting from its funded research carry full reuse rights, such as those provided by a CC BY 4.0 International License or its functional equivalent. NIST should also require that its publications are made publicly available in standardized, machine-readable formats.

To be certain that all agency publications carry sufficient re-use rights, we suggest that NIST require grantees, as a term and condition of funding agreements, to ensure that the agency receives a license to agency publications sufficient for NIST to grant the public re-use rights. This is the most straightforward approach that minimizes complexity and burden in compliance by grantee institutions and authors.

To do this, the agency could rely on its existing federal purpose license under 2 C.F.R. § 200.315(b) or it could require grantees to ensure that NIST receives an analogous additional license that specifically provides the right to grant the public re-use rights to agency publications covered by the Public Access Policy.

Requiring that this additional license be granted as a term and condition of funding ensures that the agency receives its additional license at the moment the scholarly publication is created, which is how the longstanding federal purpose license operates. In this way, even if an author from the grantee's institution signs a publication agreement that conflicts with the agency's license, the agency's license remains intact, as is the case with the agency's federal purpose license.

We also recommend the agency develop template language that can be attached to or included with the publication, either by the author or PMC staff, to indicate the publication is available under an open license.

We have included a more thorough explanation of these recommendations in Appendix A of this submission.

The section of the plan starting on *line 114 found on page four* suggests that a publisher's policy or claims to a publication can override the agency's authority to make its own articles public. In order to meet the updated OSTP policy guidance, immediate availability of funded articles cannot be contingent on publisher policies. As discussed above, NIST has the authority to make its own research immediately available under 2 CFR §200.315(b) regardless of any stated conflict by a publisher or other party. To avoid confusion by grantees and authors, NIST should remove the language stating "if law allows and no later than 12 months following publication if publisher policies permit."

NIST should also remove lines 117-120 completely to further clarify its existing authority to make the research it funds immediately available. These changes will also ensure conformity

with the OSTP Memorandum which requires that publications be made immediately available "without any embargo or delay after publication."

Question 3: How can NIST monitor impacts on affected communities—authors and readers alike?

We are deeply concerned about the financial barriers that author-side fees, particularly article processing charges (APCs), present to authors and the significant additional negative effects these have on the research ecosystem. APCs continue to increase year over year, driving up the cost of research communication which may result in tradeoffs that divert funds away from the research process itself.

Further, the barriers to publication created by APCs negatively impact authors, especially in instances where publishing in particular APC-based journals is viewed as important for career advancement. This results in fewer opportunities for individual researchers to share their results with the scientific community and the public. This is extremely troubling from an equity perspective, as studies have documented that APC costs disproportionately affect younger researchers, female researchers, and those at less well-funded institutions.

Given the diversity of author experiences, NIST should establish a baseline understanding of the environment by collecting data on the number and makeup of its current funding recipients who are charging publication fees (APCs) as direct costs to their research grants and analyzing that data across different demographics (e.g., minority-serving institutions (MSIs), EPSCoR-eligible institutions, IDeA-eligible institutions, researchers in less-well-resourced disciplines, etc.)

This work to monitor impacts on authors and the general public should be part of NIST's existing effort to "measure the reach and impact of NIST programs and/or services to underserved communities, as well as the full fields of science" as outlined in the Department of Commerce's Equity Action Plan.

Given the importance of NIST's work to both the public and American businesses, we also recommend that the agency actively review the wider use of NIST research by collecting information on the number of times a paper or dataset has been accessed,downloaded, or reused following implementation of the plan.

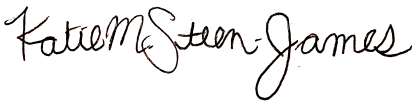
Question 4: How can NIST improve the plan to provide greater public access to NIST-funded research results?

To provide greater public access to NIST-funded research results, the plan must ensure *immediate* public access to the articles and underlying data resulting from its research. As outlined in the OSTP Memorandum, this means "without any embargo or delay after publication." To meet these requirements in the memorandum, NIST must remove the language

starting on line 116 and continuing through line 120 of the plan, to clarify that *no embargo* is allowed or will be accepted.

SPARC appreciates the opportunity to provide comments on NIST's updated Plan for Providing Public Access to the Results of Federally Funded Research. We look forward to working with the agency to fully accomplish the goals outlined in the OSTP Memorandum and to leverage the full value and utility of NIST-funded research.

Sincerely,



Katie Steen-James
Manager of Public Policy & Advocacy

Heather Joseph
Executive Director

Appendix A

Compliance Steps to Ensure Public Access with Reuse Rights

Goal: Ensure scholarly publications subject to the 2022 OSTP Memorandum, *Ensuring Free, Immediate, and Equitable Access to Federally Funded Research*, are openly licensed to maximize global public reuse.

Strategy: Provide agencies, universities, and authors with a menu of compliance steps/options that retain the rights needed to openly license the publications.

=========

This document provides recommendations to ensure that public access is provided in a manner that is consistent with copyright law and the obligation under Section 5(j) of the *2022 OSTP Memorandum* to make these publications "findable, accessible, interoperable, and re-useable, to the American public and the scientific community in an equitable and secure manner."

This document provides agencies with recommended policy language, contract language, and operational steps to ensure that grantees comply with the obligation to make agency-funded peer-reviewed scholarly publications publicly accessible.

For reference, that obligation in Section 3(a) is that "all peer-reviewed scholarly publications authored or co-authored by individuals or institutions resulting from federally funded research are made freely available and publicly accessible by default in agency-designated repositories without any embargo or delay after publication."

Under longstanding policy, agencies already receive a license to any copyrighted work created with federal funds that authorizes the agency to make broad use of the work for federal purposes and to authorize others to do so. This language likely already provides agencies with sufficient authority to require that publicly accessible copies of scholarly publications are provided to the public with reuse rights.

To avoid any doubt on this issue, the policy language below recommends that the most straightforward means by which a grantee can provide public access is to require that as part of the grant agreement, the grantee provides the agency with an additional copyright license that is analogous to the longstanding federal purpose license. The scope of this additional license directly correlates to the agency's public access obligation under the *2022 OSTP Memorandum*.

The recommended policy language is stated generally. We also recommend more specific language that an agency can use in its contracts with its grantees to ensure that copyright is properly managed to provide public access with broad rights of reuse.

The legal effect of this contract language is that the agency receives its additional license at the moment the scholarly publication is created, which is how the longstanding federal purpose license operates. In this way, even if an author from the grantee's institution signs a publication agreement that conflicts with the agency's license, the agency's license remains intact.

Finally, it is important that information about this license is communicated to the public with any copy of the scholarly publication that is made publicly accessible to comply with the agency's public access policy.

The most straightforward method to achieve this is to create a required template that is attached to copies of scholarly publications that are deposited in agency-designated repositories or otherwise in compliance with the agency's public access policy. The contents of this template can include information about the copyright license along with other useful information, such as the funding agreement number, perhaps the author's ORCID ID and any other information that the agency may want to require. The template would ideally be attached by the author, but it also could be attached by the repository manager or a publisher in cases in which the publisher agrees to deposit public access copies in an agency-designated repository.

The following language is limited to the license required to make the work publicly accessible with reuse rights. It does not include language on other areas covered by the *2022 OSTP Memorandum*, such as mandatory deposit in agency-designated repositories, mandatory metadata, and so on.

(1) Agency Policy Language

In the event that it is deemed not already provided for by the license reserved by the agency to all copyrighted works subject to the requirements of 2 C.F.R. § 200.315(b), the agency reserves an additional license in any peer-reviewed scholarly publications covered by the 2022 OSTP Memorandum to apply a public license to such publications. The terms of the agency's public license authorize members of the public to exercise all rights under copyright and related or neighboring rights in any covered peer-reviewed scholarly publication subject to the condition that they provide attribution as required by the agency.

(2) Agency Contract Language (Terms & Conditions of an Award)

License Grant
In the event that it is deemed not already provided for by the license reserved by the agency to all copyrighted works subject to the requirements of 2 C.F.R. § 200.315(b), the agency reserves an additional license in any peer-reviewed scholarly publications covered by the 2022 OSTP Memorandum to apply a public license to such publications. The terms of the agency's public license authorize members of the public to exercise all rights under copyright and related or neighboring rights in any covered peer-reviewed scholarly publication subject to the condition that

they provide attribution as required by the agency.

The "additional license" reserved by the agency is a worldwide, royalty-free, non-exclusive, perpetual, irrevocable, standard open copyright license granting the public permission to access, reproduce, publicly perform, publicly display, adapt, distribute, and otherwise use the work and adaptations of the work for any purpose, conditioned only on the requirement that attribution be given to authors and rights holders as designated. The "additional license" must be widely adopted and must contain (i) a symbol that readily communicates to users the permissions granted concerning the use of the copyrightable work; (ii) machine-readable code for digital resources; and (iii) readily accessed legal terms.

Obligation to Communicate
The grantee agrees to take all necessary actions to ensure that the publicly accessible copy of the article will conform to the template for policy-covered works.

"Publicly accessible copy" means any copy of the peer-reviewed scholarly publication that is made freely available and publicly accessible to comply with the 2022 OSTP Memorandum.

(3) Template for Covered Works

Policy-covered works must include the language from one of the two options below when deposited in agency-designated repositories or distributed by any other means in order to meet the grantee's public access obligation.

> **Template Option 1**
>
> "Research reported in this [publication] was supported by [name of the Institute(s), Center, or other agency offices] of the [federal agency] under award number [specific agency grant number(s)]. Pursuant to [cite specific agency policy] and [relevant university policy], this work is made available under the CC BY 4.0 license."
>
> **Template Option 2**
>
> "Research reported in this [publication] was supported by [name of the Institute(s), Center, or other agency offices] of the [federal agency] under award number [specific agency grant number(s)]. Pursuant to [cite specific agency policy] and [relevant university policy], the authors of this work provide the [federal agency] with a worldwide, royalty-free, non-exclusive, perpetual, irrevocable, standard open copyright license granting the public permission to access, reproduce, publicly perform, publicly display, adapt, distribute, and otherwise use the work and adaptations of the work for any purpose, conditioned only on the requirement that attribution be given to the authors and rights holders as designated."

(4) Agency-designated Repositories

Agencies should instruct agency-designated repositories to check submissions for compliance with the agency template. When policy-covered submissions do not contain the language specified in the template, repositories should add the language before the works are made public. Agencies may instruct repositories to add template language Option 1 or Option 2, at their discretion.

(5) Universities

Most university IP policies allocate copyright ownership in works of scholarship to individual creators, not the university. However, most university copyright or IP policies also already contain language that will enable compliance with this licensing requirement by modifying that default allocation of rights. This is typically accomplished by university policy ensuring that either the university owns all rights in works created under a grant,[1] or by stating that the university will retain whatever slice of rights is necessary to comply with grant or contract obligations.[2] Retaining those rights is necessary so the university holds the requisite rights to apply the CC BY 4.0 license or functional equivalent.

Universities also have other options to comply. For example, some universities retain a broad license that allows it to reuse all scholarly works produced by university employees. Others have adopted institutional rights retention policies aimed specifically at public availability and reuse. It is important, particularly for universities with policies that hold that individual creators are the initial owners of rights, to ensure that PIs and other creators under the grants affirm their compliance and agreement with the applicable IP policies.[3]

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[1] See, for example, The University of Texas IP Policy, which provides that "Intellectual property resulting from research supported by a grant or contract with the government (federal and/or state) or an agency thereof is owned by the Board of Regents."
"https://www.utsystem.edu/board-of-regents/rules/90101-intellectual-property.

[2] See, for example, Stanford University's IP policy, which provides that rights are typically held by individual creators but that "Copyrightable works that are subject to sponsored research agreements or other contractual obligations of the University shall be owned by the University, so that the University may satisfy its contractual obligations." See https://doresearch.stanford.edu/policies/research-policy-handbook/intellectual-property/copyright-policy.

[3] For example, the University of Wisconsin requires PIs to attest that they will adhere to the University IP policy and license using this form: https://kb.wisc.edu/images/group156/33081/ipagreement.pdf.

SPRINGER NATURE

Springer Nature Response to NIST RfI for Public Access Plan 2023

Questions and SN Responses

How can NIST ensure equity in publication opportunities?

SN Response:

Summary: To ensure equity in publication opportunities in implementation of the NIST Public Access Plan, NIST-supported investigators need the resources to support and enable their choice of compliance route.

Ensuring equity in publication opportunities for NIST-supported investigators means ensuring that every investigator, regardless of field, career stage, grant size, gender, ethnicity and institutional affiliation, has the resources available to them to choose both where to publish and the route for compliance that enables that choice.

Most journal and book publishers with whom NIST investigators currently choose to publish - including Springer Nature (14% of NIST-funded articles were published in our journals in 2022) - take the position that Gold Open Access – where the Version of Record is made open access upon publication on the publisher's platform - is the only realistic and sustainable route to Open Access.

Our work has shown that authors complying through the Gold OA route are likely to achieve greater reach and impact for their papers than if they had elected for compliance via the Accepted Manuscript route. This dichotomy has the potential to exacerbate existing inequities between NIST-fundees and/or create new ones. Researchers that are less well-funded (which is more common for early career researchers, those in fields with small grant sizes, and those at minority-serving institutions or HBCUs) can be further disadvantaged because they are more likely to have to comply via the green route, missing out on the impact and reach of Gold OA .

It is also important that NIST has recognised the need for funding to be in place to support **any** NIST investigator that might wish to publish in journals via the Gold OA route. We support the acknowledgment in the NIST Public Access Plan that "Reasonable costs associated with publication" may be included in grant proposals and project budgets. However we recommend that estimating such costs for publications arising from a grant should be a **mandatory** line item in the grant budget. This approach will ensure that authors that are planning to comply via Gold OA will have requested sufficient funds to cover reasonable APCs (Article Processing Charges) and CPCs (Chapter Processing Charges). It will also enable NIST to better monitor and track potential inequities arising from, or being exacerbated by, differences in impact between the two different compliance routes.

It is essential that sufficient funding is made available to pay for reasonable APCs for Gold OA publication. The calls on NIST funding can be minimized where such funding is pooled with university library budgets via Transformative Agreements (TAs). Ultimately to achieve a full transition to sustainable open access there needs to be a way to align and maximize use of available funds to spread the load. TAs don't solve all sustainability and equity issues but, by combining funder and library funds, they are a strong step in the right direction … one that has proven to be a scalable solution that substantially reduces the administrative burden on researchers. Regardless of whether NIST grant funds are used to contribute to centralized TAs or to support author-mediated payments to enable Gold OA, NIST needs to budget for, and monitor, such costs.

How can NIST ensure public access and accessibility to outputs of NIST-funded research?

SN Response:

Summary: To ensure public access and accessibility of publications NIST needs to monitor and maximize the proportion of NIST-supported publications complying through Gold OA.

Gold OA maximizes access not only by enabling free online access to humans and machines, but also by enabling re-use, re-formatting, aggregation, and other procedures to make the content discoverable, accessible and usable by diverse communities according to their specific needs. The Version of Record, which Gold OA makes openly accessible, is the complete, authoritative and up-to-date version of the paper, curated and maintained by publishers and editors; acting as an integrated hub for all the elements necessary for open

science e.g. data and code. Our work shows that researchers prefer the Version of Record (VoR) over the unfinished Accepted Manuscript, both as readers and authors.

There are significant disadvantages for those that do not have access to the VoR. Therefore, to maximize the equity benefits as the NIST Public Access Plan is implemented, it is important that the proportion of compliance through Gold OA is maximized and monitored. The full equity benefits of the NIST Public Access Plan can only be realized when there are no paywalls around any NIST-supported VoRs. Until then less-well resourced researchers and, more importantly, **a large proportion of the US public, including many clinicians, public health officials, students and educators,** will only have access to unfinished inferior versions of any articles and book chapters that have complied with the plan via the green route.

Journal articles

As stated above, only the Gold OA route can provide a sustainable OA transition and deliver the full benefits of open science . **Given this: we recommend that NIST include an explicit preference / encouragement for compliance via Gold OA (VoR under CC-BY) in its guidance for researchers**, as for example included in the FAQs for the NASA policy for the Science Mission Directorate ("For authors who wish to publish in an open access journal, **NASA allows all Article Processing Charges (APCs)** to be included in the grant proposal budget" (pg. 15)).

For researchers who do not publish their articles via Gold OA, we are encouraged to see that NIST will permit a 12-month embargo period, where required by publishers. This is crucially important as most journals and their publishers do not support the zero embargo green OA route - where an unfinished AM is made openly available at the same time that the Version of Record is published. Such a model is simply not sustainable: it undermines the subscription model that supports it and slows progress towards the sustainable and scalable options for public access that gold OA enables. Gold OA is the only sustainable model for trusted open access. To best ensure equity in publication opportunities we strongly support NIST in maintaining the inclusion of the 12 month embargo where needed.

Book chapters

A 12-month embargo period is not in line with many publisher self-archiving policies for books and chapters. Books have longer lifespans than journal articles; the usage and sales of books continue for many years after publication. Longer embargoes are therefore necessary before sharing archived full text manuscripts if green OA is being applied sustainably.

Our recommendation is for NIST to ensure that sufficient funding is provided to enable all NIST-funded chapters to be made open access through the Gold OA route and/or

excluding book chapters from the policy (this would still meet the requirements of the Nelson Memo).

How can NIST monitor impacts on affected communities—authors and readers alike?

SN Response:

It is important that the NIST Public Access Plan raises concerns about the complexities of co-authors claiming copyright and the publisher licensing agreements. These are concerns that many publishers share and of which more funders should be cognizant. This is a further issue with the zero-embargo green route to OA and one which NIST should monitor.

To monitor the costs and impact of the NIST Public Access Plan, NIST should, where possible, work with institutions and their libraries to leverage Transformative Agreements (TAs) and other equivalent centralized payment arrangements. Differences in impact between green and Gold OA compliance paths and their knock-on effect on equity can therefore be effectively monitored.

Currently, the only sustainable publishing model to enable a full open access transition requires payment of publication fees so there should be guidance to grantees that these need to be estimated and included in their grant applications. The funding burden on NIST for these can be minimized if grant money is pooled with university library money, and this is best achieved via Transformative Agreements (TAs). These TAs can then be used to monitor and report on these costs to universities and funders like NIST.

TAs don't solve all sustainability and equity issues, but by combining funder and library funds, they are a strong step in the right direction that has proven to be a scalable solution that substantially reduces the administrative burden on researchers. Regardless of whether NIST grants are used to contribute to centralized TAs or to support author-mediated payments to enable Gold OA, NIST needs to budget for, and monitor, such costs.

We are aligned with STM's recent position statement regarding zero embargo green OA / "Rights Retention Strategies". In particular we support the argument that many journals need exclusive publishing rights to support sustainable business models and continued investment. Our longstanding position on this topic is clear: mandatory requirements being placed on grant fundees (already overburdened with compliance obligations) to openly license unfinished versions of their papers puts them in a difficult position, undermines progress towards full sustainable open access for research papers and force publishers to maintain

paywalls and defend subscription revenue. Gold OA is easier to monitor both in terms of compliance and the impact of making the research OA (citations, downloads, reuse, etc.).

To demonstrate their commitment to maintaining researchers' free choice about where to publish, as well as the integrity and independence of the QA processes that publishers implement, NIST should not place any such burden upon the researchers it funds.

Therefore we recommend that differences in impact between green and gold OA compliance paths and their knock-on impact on potentially disadvantaged NIST-investigators should be quantified and regularly reported.

How can NIST improve the plan to provide greater public access to NIST-funded research results?

SN Response:

- **We also recommend that NIST should include an explicit preference / encouragement for compliance via Gold OA in its guidance for researchers** and ensure authors that wish to publish Gold OA are provided with the sufficient funds to cover APCs and CPCs.
- **Exclude book chapters from the NIST policy (this would still meet the requirements of the Nelson Memo) to ensure book publishing sustainability.**
- Explicitly support the argument that many journals need exclusive publishing rights to support sustainable business models and continued investment.
- Not put mandatory complex rights retention requirements for grant fundees that contradict publisher licensing agreements and place a huge burden of compliance on researchers.
- Monitor the costs and impact of the NIST Public Access Plan by, where possible, working with institutions and their libraries to leverage Transformative Agreements and other equivalent centralized payment arrangements.
- Continue to support the transition to OA by allowing a 12 month embargo where publisher policies require this so as to not prolong reliance on subscription through zero embargo green
- Clarify that scholarly review articles, which are not based on new data and therefore do not arise from a specific grant / funded project, would almost universally be out-of-scope for the policy which is focused on NIST-funded research results.

Advancing trusted research

August 14, 2023

STM response to Request for Information on NIST's Draft Plan for Providing Public Access to the Results of Federally Funded Research (88 FR 42302)

Thank you for the opportunity to comment on the "Draft NIST Plan for Providing Public Access to the Results of Federally Funded Research" ("the Draft NIST Plan"), as issued in the Request for Information (**88 FR 42302**). STM is pleased that NIST is soliciting comments before it finalizes its plan, and with the aim of supporting the development of its policies and implementation practices. STM hopes that the comments made by stakeholders in the current process will be fully considered in the development of the final plan, as well as its policy and its implementation. STM further hopes that we, and our members, will continue to be consulted on the various ways that NIST policy may impact scholarly communications.

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 NIST the goal of increasing access to publications and data, not just for federally funded research, but for all research. More broadly, STM and our members are supportive of NIST's goals to advance science in ways that drive innovation and improve quality of life, which we feel is also supported and enabled by our work to support a high-quality and accurate scholarly record. Like NIST, we also advance standards and technology related to scholarly communication.

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 to 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 while supporting sustainability and equity and without compromising on quality and integrity.

STM and our member publishers have invested significantly in a system of scholarly communication that enables sharing of the latest discoveries and innovations, supports public trust in science and public health, enables interoperability through standards and infrastructure (metadata, persistent identifiers, etc.), and ensures articles and data related to research are findable, accessible, interoperable, and reusable. Publishers continue to invest and innovate to meet the changing needs of the communities they serve, and to take advantage of the latest technologies to help research outcomes reach audiences as effectively as possible. STM supports an environment where publishers, in collaboration with NIST and the broad stakeholder communities engaged in research related to NIST-funded projects, can continue to drive quality, integrity, and innovation in scholarly communication.

1. How can NIST ensure equity in publication opportunities?

Changing access requirements within the scientific ecosystem are likely to solve some inequities from a reader perspective, but concerted and collaborative action will be necessary to ensure sustainability and equity more broadly. Agencies can minimize the risk of creating new inequities in author opportunity to publish, especially for scientists from traditionally marginalized communities and early career researchers, by ensuring that all NIST-funded authors have the funding, support, and encouragement necessary for their research to flourish and the choice of the publishing option that best suits their needs and goals. Publishers are doing their part by supporting new approaches that provide opportunities for all to participate and access scholarly communication. Ultimately, a financially sustainable scientific publishing system is critical to advance trusted and impactful science, and attention to equity throughout the ecosystem can ensure that this is achieved.

There is not one best route to providing access, and a mixed ecosystem is likely to persist for some time, even as publishers, institutions, and funders move to support open science. That said, STM believes that knowledge-creation, discovery, and sharing is best enabled when the final articles resulting from all stages of the peer-review and publication process are immediately openly available to all. The Version of Record (VoR) is the most thoroughly vetted version of the research publication, having been through all stages of the peer-review and publication process including, being copyedited, typeset, had metadata applied, and has been allocated a DOI (Digital Object Identifier). The VoR is the authoritative version for researchers and the public, and it is more cited, more used, and garners more attention than other versions of an article.[1] For example, the VoR can link bi-directionally to research objects like data and code, reflects any post-publication updates or corrections, and sits on the publisher's platform where it can be integrated with other relevant content, allowing the public to better put this information into context. For these reasons, we urge NIST to ensure all supported authors have the same opportunity to make the VoR of their articles open access upon publication through a fully-funded open access route.

While STM is committed to promoting open access, we are pleased that the Draft Plan also recognizes that there may be restrictions on making publications available immediately upon publication if an open access publishing route is not chosen [lines 354-355]. 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.[2] 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. This is because such approaches present a challenge to the vital income that is necessary for publishers to continue making investments and innovating in quality, integrity, accessibility, preservation, and discoverability. The Draft NIST Plan appropriately recognizes that publications are a distinct work, separate from the research itself, and protected by copyright and licensing agreements that should be respected [lines 41-43, 114-117, 355-356]. We appreciate that the NIST plan respects publisher policies

[1] 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).

[2] An indicator of this is that most of the growth in open access is driven by fully-supported OA, as can be seen in data from the STM Open Access Dashboard (https://www.stm-assoc.org/oa-dashboard/uptake-of-open-access/, accessed August 8, 2023).

[line 117] and implicitly acknowledges [line 116] that currently some publisher policies currently require a delay of 12 months before public access in order to support the sustainability of a subscription model.[3]

STM believes that the best way forward is to ensure that all NIST-supported researchers are given consistent and clear support to budget for the costs of publishing open access as part of their research grant, which enables researchers to make their work immediately and freely available in whichever journal they feel will best advance their research and impact, and under their choice of open access licence. All researchers must have options to meet their funder obligations, regardless of the journal they choose or the agreements their institution has with individual journals, in order to promote both open science and equity. As in the Draft NIST Plan [lines 420-422], grant recipients should be "encouraged to publish…in open scientific literature." This could be strengthened by connecting this with encouragement and oversight for appropriate budgeting for publications. Furthermore, while the Draft NIST Plan indicates that costs may be included in grant proposals [lines 124-125], to achieve its open science goals, NIST will need to encourage the full consideration of all open science activities in proposal budgets and review proposals to ensure that appropriate expenses are included. Finally, funding needs to be provided on an equal basis so that researchers who choose to publish in journals that are supported by APCs are not disadvantaged in the resources available for their research, student support, and other critical needs. The Draft NIST Plan says that guidance will be updated [lines 367-368, 454-455], and the above points should all form part of this guidance. Publishers would be happy to work with NIST to support in developing this guidance, applying our experience with open science.

Rather than "guidance on rights retention" [line 123], awardees should be provided with guidance on copyright and open access options. Regardless of publication outlet, authors generally have many rights related to sharing articles with the public, many enshrined in copyright law. Requiring that researchers obtain additional rights could severely limit researchers' freedom of choice over where they can publish their research results, particularly in conjunction with an immediate access requirement, creating inequities in publication opportunities for NIST-supported investigators. 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.[3] Furthermore, researchers may differ in their preferred license: while some prefer to apply a Creative Commons Attribution (CC BY) license to their publication, others prefer to apply licenses that enable authors to approve (or disapprove) commercial reuse or the creation of derivative works (e.g., a Creative Commons Non-Commercial Non-Derivative (CC BY-NC-ND) license) to safeguard against potential misuse or misinformation. Publishers

[3] While efforts to provide immediate access to articles funded by subscription journal publishers appear cost free to the researcher and funder, in fact they are reliant on subscriptions to support the significant investments publishers make; these investments ensure the quality, 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 it cost free for funders and institutions to provide immediate access to articles funded by subscription journal publishers, 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 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.

develop policies regarding copyright, licensing, and copyright transfer to best support their communities, and flexibility should be provided to allow this to continue. Authors should be supported by straightforward guidance, absent catch phrases, to best serve the scholarly publishing ecosystem and promote academic freedom and author preferences. In particular, authors should be provided with guidance that some so-called "rights retention strategies," rather than protecting author rights, actually require mandatory licensing that relinquishes those rights.

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 and equitable path to open access. Agreements with institutions or funders, like Read and Publish Agreements or other pooled payment agreements, have the potential to enable equity by making open access publishing available to all researchers. Publishers are actively working to develop and promote these models, which can reduce inequity for researchers at participating institutions and can help increase compliance with policy and reduce administrative burdens. We have received reports of the success of such efforts in driving forward open access, thanks to the real-world experiment of growth of transformative agreements around the world.[4]

Another aspect of equity in publication opportunities relates to the promotion of equity and diversity in the research enterprise more broadly. Support for diverse publishing outlets is critical to such efforts. To proactively drive further change requires input from stakeholders across the research ecosystem. One way in which publishers encourage equity and diversity in the research enterprise is by providing an objective space in which work can be assessed by peers (though our impartial oversight of an independent editorial and peer review process). More specifically, in recent years publishers have established industry-wide initiatives such as the Joint Commitment on Diversity and Inclusion[5] and C4DISC[6] which are developing consensus-based standards and best practice (e.g., developing guidelines around the peer review of articles and data; creating policies to support authors with deadnames; etc.).

Finally, publishers support and invest in various initiatives to enable researchers to participate in the scholarly dialogue. This includes support for educational efforts and funding programs that expand participation of underrepresented groups and ensure quality and integrity. For example, Research4Life, a UN-publisher partnership, supports researcher skill development, provides Research Lifecycle Training Webinars, and enhances the ability of LMIC researchers to publish with participating publishers. Many publishers support and partner with AuthorAID, a global network that provides free resources and training, including in article writing, for researchers in low- and middle-income countries. Publishers offer various funding programs to support the participation of less-well-resourced researchers, including

[4] For example, STM member Taylor & Francis notes that the top 10 most published subject areas under their transformative agreements in the past two years have been in humanities, arts, and social sciences, which have traditionally been less likely than those in the physical and biomedical sciences to choose OA. For additional data, see the STM Open Access Dashboard www.stm-assoc.org/oa-dashboard/.

[5] The Joint commitment for action on inclusion and diversity in publishing, launched in June 2020, is a coalition of publishers who have agreed to take action reduce bias in publishing activities. Full details available at https://www.rsc.org/new-perspectives/talent/joint-commitment-for-action-inclusion-and-diversity-in-publishing/.

[6] The Coalition for Diversity and Inclusion in Scholarly Communications (C4DISC) was founded by 10 trade and professional associations that represent organizations and individuals working in scholarly communications. The Coalition was formed to discuss and address issues of diversity and inclusion within the publishing industry. Full details available at https://c4disc.org/.

discounts and waivers, both individually and through collective approaches like Research4Life. Publishers also work with other stakeholders to provide resources to support authors with identifying trusted outlets to present their work (e.g., Think. Check. Submit. (www.thinkchecksubmit.org) a cross-industry initiative) and promote integrity in scholarly research and its publication through the Committee on Publication Ethics (COPE, www.publicationethics.org) and other efforts.

2. How can NIST ensure public access and accessibility to outputs of NIST-funded research?

Publishers invest significantly in efforts that ensure the availability, utility, reliability (including integrity) and accessibility of scholarly communications. It is important to note that for access and accessibility to be provided, first the publications and infrastructures must be created and disseminated. Therefore, it is a necessary precondition to improve public access and accessibility of outputs that NIST work to ensure the viability of a robust ecosystem of scholarly communications that drives innovation, supports quality and integrity, and ensures appropriate infrastructure to enable accessibility to diverse users.

Steps to ensure public access and accessibility could be broken down into three requirements: 1) sufficient, enduring, and appropriate funding; 2) encouragement and education of researchers to budget for and choose open science; and 3) flexibility for researchers and organizations to enable diverse modes of communication.

Open access publishing of course stands to widen public access to research outputs. Appropriate and enduring funding is fundamental to enable open access, as well as to achieve the open science goals outlined in the Draft NIST Plan and in the August OSTP memo. Funding will be needed to support data sharing and stewardship as well as open access publishing, metadata enhancements, persistent identifiers, and the like. A healthy and robust ecosystem of scholarly communications enables publishers to continue to invest and innovate to widen access and accessibility on a continual basis.

Encouragement and education of researchers is also key, as they will ultimately be responsible for ensuring that the articles that they write, and data they produce, are available to the public. Our members' experience with funder requirements and compliance around the world indicates that researchers are often confused about grant requirements, including on how and when to provide access to publications, and a significant percentage of researchers erroneously believe that it is an inappropriate use of grant funds to pay for publication.[7] STM's members' experience with guidance and education indicates that such efforts can make a big difference in researchers' willingness to choose open access and comply with open science requirements.

Flexibility is needed to promote diversity in publication, ensure author choice, and support access to publishing in ways that work for researchers. As noted earlier, different publishers may offer distinct approaches to provide access, each of which may be appropriate to the communities they serve, and each of which should be allowed as a method for researchers to ensure access to any article they author that reports on NIST-funded research. A diversity of publication outlets, enabled by flexible approaches to implementation of the NIST policy, supports diversity in research. Enabling this flexibility with funding, education, and support will be critical to ensuring authors can provide access through their outlet of choice, preferably through open access publishing.

[7] E.g., nearly 1 in 6 in the 2016 *Pay It Forward Report* and 1 in 5 in the 2019 *Taylor & Francis Researcher Survey*

Some additional aspects of access and accessibility also need to be considered and can be supported by the existing ecosystem. Publishers invest significantly to ensure that articles are accessible in various human and machine-readable formats and are available to those with diverse needs. Many publishers have invested in technology and infrastructure to build towards, meet, or exceed Section 508 accessibility and have created a diverse ecosystem of accessible resources available to diverse audiences with or without assistive technologies.[8] Some of our members were leaders in developing braille resources in multiple languages, screen reading technology implementation, and other innovations. These additional infrastructure and formatting investments are enabled by sustainable business models.

STM also notes various initiatives that we and our members have promoted to ensure access and accessibility for diverse audiences. These include Research4Life which provides access to researchers in Low- and Middle- Income countries; efforts to share plain language summaries to broaden the accessibility of cutting-edge research to non-experts;[9] and investments in the promotion of articles to the media and through social media channels.

Widening access to research outputs beyond only articles is a further consideration. STM fully supports the data management plan requirements [line 100-103] in the plan and would welcome opportunities to collaborate on guidance and the promulgation of standards to support researchers in developing and implementing data management plans. STM has supported publishers' efforts to share, cite, and link data through our Research Data Program[10], including by promoting standard descriptions of data availability, and our member publishers have many initiatives to enable researchers to share data and educate them about data stewardship.

Finally, STM notes that there are many mechanisms to providing access to articles and data already in place and appreciates that the Draft NIST Plan says that efforts will be made to avoid "unnecessary duplication" [line 480]. Utilizing existing infrastructure to deliver access, where appropriate, can reduce researcher burden and overall costs. These may include access through publisher platforms. Existing standards, including identifiers, should also be used to ensure harmonization and avoid unnecessary duplication in the scholarly record. The plan mentions one identifier on line 515; we recommend NIST support the use of additional community-adopted PIDs for researchers, institutions and funders through the grant application process. Publishers welcome discussion on existing and future approaches to capture and surface metadata, using persistent identifiers, to aid discovery of a diverse array of open science outputs.

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[8] E.g., Elsevier (https://www.elsevier.com/about/accessibility) and Taylor and Francis (https://taylorandfrancis.com/about/corporate-responsibility/accessibility-at-taylor-francis/).

[9] E.g., Optica's Spotlight on Optics (https://opg.optica.org/spotlight/about.cfm) and Taylor and Francis Plain Language Summaries (https://authorservices.taylorandfrancis.com/publishing-your-research/writing-your-paper/how-to-write-a-plain-language-summary/)

[10] Information about the research data program is available at https://www.stm-assoc.org/research-data-program/. See also 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 funders and publishers, ratified in October 2018 and is available through a CC-BY 4.0 licence.

3. How can NIST monitor impacts on affected communities—authors and readers alike?

STM seeks to provide transparent and accurate information about the scholarly communications ecosystem and would be happy to work with NIST to explore metrics that could consider impact on affected communities. For example, STM produces the OA Dashboard (https://www.stm-assoc.org/oa-dashboard/) to provide information on the state of open access. As another example, our members participate in the COUNTER system (https://www.projectcounter.org/) to provide usage statistics for articles. There are diverse efforts to measure the impact and usage of publications and data.

We appreciate that NIST, in framing this question, understands that there may be significant impacts on both authors and readers from this policy change, and that they may be difficult to predict. It will be important to proceed carefully and consider various aspects of the scholarly communications ecosystem. These may include usage of articles and data, the ability of authors to publish in their journal of choice, and overall costs to the system.

Potential impacts include effects on the freedom of the researchers NIST supports to publish in the journal, and under the license of their choice, to ensure the impact of their work and to safeguard against misuse or misinformation. When looking at potentially expanding access, it is important to note that, for readers, access to information is necessary but not sufficient; changes in policy may have impacts on the quality, integrity, accessibility, and dissemination of research in context that could also be monitored. Each of these is vital to the use and utility of the scholarly record, and these are all research qualities that publishers' investments and innovations ensure.

With respect to monitoring the changing financial dynamics of the publishing ecosystem, it is important to note that STM's members compete in a dynamic environment that drives them to provide the widest possible access to the articles that they publish at the lowest possible price to the research and user communities. Prices and revenue streams can vary significantly from one publisher to another, and even from one journal to another, depending on many factors such as audience, circulation/reach, ranking, number of articles published, field/specialty, and distribution method. More broadly, the financial impact will not be felt equally across the system, whether considering funders, individual institutions, or individual publishers. It will not be able to be captured by a single aspect of pricing (i.e., APCs), but would require consideration of the total investment in scholarly communications, which includes subscriptions, APCs, Read and Publish Agreements and other pooled funding arrangements, and other inputs.

Our members are committed to the maximum possible transparency around pricing, in accordance with regulation and antitrust concerns, and list APC prices are virtually always transparent[11] which supports researchers with budgeting for the costs of making their work immediately and freely available. Ultimately, a financially sustainable scientific publishing system is critical to advance trusted and

[11] APC price lists are generally public, and transparently shared. Some examples include American Chemical Society: (https://acsopenscience.org/researchers/oa-pricing/), American Physical Society (https://journals.aps.org/authors/apcs), Elsevier (https://www.elsevier.com/about/policies/pricing), Springer Nature (https://www.springernature.com/gp/open-research/journals-books/journals), Wiley (https://authorservices.wiley.com/author-resources/Journal-Authors/open-access/article-publication-charges.html), The Public Library of Science (PLoS) (https://plos.org/publish/fees/).

impactful science for the benefit of researchers, research, and society. STM and its members would welcome additional conversation on this topic.

4. How can NIST improve the plan to provide greater public access to NIST-funded research results?

In response to the prompts above, we have referenced areas of the Draft NIST Plan that are key to providing greater public access or that may benefit from revision. Below we highlight those recommendations, as well as a few areas of improvement that we mention below for the first time, organized under headings that identify key opportunities to ensure success of NIST's public access policies.

Emphasize the importance of copyright and intellectual property to advance research and dissemination.

- Maintain language on p.2, lines 41-43 that NIST will recognize intellectual property rights.
- Maintain language on p. 4, lines 112-113 and 116-117 that emphasizes that public access and deposit should be consistent with publisher policies.
- Continue to emphasize that public access should be consistent with legal rights, and that flexibility may be needed to support publication options, as on p.4, lines 114-117.
- On p. 4, line 123, replace "guidance on rights retention" with "guidance on copyright, open access publishing, and public access requirements." Where guidance is provided to authors on copyright, this should be to promote academic freedom and enable authors to use intellectual property rights in the manner that best helps them advance their research, which may include copyright transfer or specific forms of licensing that enable authors to approve (or disapprove) commercial reuse or the creation of derivative works.
- Add additional language on p. 3-4, after lines 94-99, that contrasts the treatment of copyright in works created by awardees from non-NIST organizations with that created by NIST employees or under contract. Such language should indicate that such awardees should have the right to license works or transfer copyright in whatever manner best supports authors' ability to publish articles that report on funded research and achieve their communication goals, as long as public access is enabled.

Provide more encouragement for researchers to budget for open access and open science activities.

- Expand on language on p.4, line 124-125, that says costs associated with publication may be included in grant proposals or project plan documents. NIST should provide clear and consistent encouragement to all awardees to include all open science costs in their budgets and provide robust guidance to support appropriate planning. Project managers and award panels should be directed to review budgets and planning documents to ensure appropriate support is planned.
- The plan notes on p. 11, line 367-368 and p. 14, line 447 and 453-455 (possibly elsewhere as well), that guidance will be provided. This guidance needs to encourage open science practices, including open access publishing. Publishers have a lot of experience with such guidance and would welcome the opportunity to collaborate on education and guidance and amplify NIST's messaging.

- In the discussion of resources needed on p.17, line 517-522 and the appendix on p.19, there is no consideration of additional resources needed by researchers, whether NIST employees or awardees from non-NIST organizations, to support open science activities, including open access publishing and data curation and stewardship. These should be considered further for NIST planning and budgeting.

As much as possible, use existing mechanisms and standards to provide access, in order to minimize duplication and burdens and maximize compliance.

- On p. 15, line 474-481, language regarding public-private partnerships could be expanded to include other broad-based, community-supported sharing and linking initiatives.[12] STM agrees that the goal of such efforts should be to enhance value, avoid unnecessary duplication, and minimize administrative burdens. This last goal could be added to the last sentence in line 481.
- On p.3, lines 68-59, the plan indicates NIST intends to make publications and data "freely available to the public, in publicly accessible repositories." In addition to the use of repositories, STM encourages the use of existing mechanisms, including publisher's platforms, CHORUS, and data repositories.
- Throughout the document, persistent identifiers are mentioned, with only one mention (on p. 17, line 515) of a specific identifier. We recommend that NIST expand the reference to identifiers, with the following recommendations in mind:
    - The primary existing PID and metadata structure, enabled through organizations including CrossRef and DataCite, should be adopted and adapted as necessary to minimize disruption, promote compliance, and prevent unnecessary duplication of effort and investment in the scholarly communications system.
    - NIST should support the use of additional community-adopted PIDs through the grant application process (e.g., ORCIDs for researchers, organization IDs for the institutions(s) affiliated with each researcher, and Funder IDs for the distinct funders of the grant). While organization IDs are not as well-established or robust as researcher IDs (with ORCID), there are several emerging options for organizations, and NIST should require the use of at least one of the following PIDs for organizations to ensure harmonization and avoid unnecessary duplication in the scholarly record: Ringgold (a global organization identifier system); ISNI (ISO standard name identifier system); ROR (the Research Organization Registry); and Crossref's Funder Registry; along with ORCID for researchers. NIST should also make metadata fields available for each of these.

[12] These could include open protocols like Scholix, a multi-stakeholder initiative to link scholarly literature and research data, and initiatives such as seamlessaccess.org, a service designed to help foster a more streamlined online access experience by leveraging an existing single-sign-on infrastructure, and GetFTR, a tool that streamlines access to journal articles on discovery tools and collaboration networks. STM would welcome additional dialogue to discover which existing initiatives could best be utilized to support findability and access to articles and research data related to NIST-funded research, and to collaboratively develop solutions where services or infrastructures do not already exist.

Provide clear definitions and terminology.

- The version of an article reporting on NIST-funded research required to be made available under the public access plan is described by a variety of terms throughout the document, including "author's accepted version" (e.g., p. 4 line 109, 111, 115), "author manuscript" (e.g., p. 4, line 122), and "final peer-reviewed manuscript" (e.g., p. 12, lines 394-5). The recommended practice of the National Information Standards Organization is to refer to this version as the "Accepted Manuscript,"[13] which acknowledges that this version reflects the imprimatur of a third party and is therefore not exclusively the "author's."
- On p. 13, line 439 and p. 17, line 515, mention is made of the time "the manuscript" is published. It would be clearer and more accurate to refer to the time of final publication in a journal.

Acknowledge the importance of research integrity alongside access.

- The Draft NIST Plan does not mention the importance of research integrity which ensures research can be trusted and reliably built upon for the benefit of science and society, advancing access to accurate information and enhancing equity in the use of research products. STM and its members invest significantly in ensuring research integrity and the quality and reliability of the scholarly record. For example, STM Solutions recently launched the Research Integrity Hub (https://www.stm-assoc.org/stm-integrity-hub/), a robust and holistic set of tools to safeguard the integrity of science through a combination of shared data and experiences and by harnessing technological innovation. Publishers are working individually and in partnership with other organizations to prevent misconduct and ensure the integrity of the system. Safeguarding research integrity can only be done through collaboration with all stakeholders in the scholarly ecosystem, and in an environment which enables publishers to continue their substantial investments that safeguard research integrity.

Finally, we note that the most important actions that NIST can take to provide greater public access to NIST-funded research results are to educate researchers in adopting open science practices, providing funding to enable these practices, and ensuring that the systems and services that currently support the quality, integrity, accessibility, and discoverability of scholarly communication can be maintained. These latter include, but are not limited to, market incentives that encourage the development of high-quality publication outlets for scholarly communication. Ultimately, support and flexibility are needed to ensure publishers and others can continue to make the critical investments and innovations that drive discovery and innovation. STM and its members stand ready to work with NIST to make a sustainable, appropriately funded and flexible policy a success.

[13] See p. 2 of "Journal Article Versions (JAV): Recommendations of the NISO/ALPSP JAV Technical Working Group April 2008," retrieved August 7, 2023 https://www.niso.org/sites/default/files/2017-08/RP-8-2008.pdf

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.

August 14, 2023

Dr. Katherine Sharpless
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RE: Request for Information: Draft Plan for Providing Public Access to the Results of Federally Funded Research
Docket Number: 230612-0147

Taylor & Francis (T&F) is a leading global research publisher, focused on advancing science and fostering human progress through knowledge – something we've been doing since 1798. Across the organization, we provide a wide range of publishing outlets for scholarly research, including books, eBooks, journals, and open research publishing venues. We are committed to expanding the range of fully open access publishing options across our portfolio. We partner with over 150 US-based learned societies and expert associations to make research available to the communities they serve. We appreciate the opportunity to provide comment on NIST's Public Access Plan and offer the following recommendations:

Question 1 Recommendations

1. Fund Gold OA without restrictions to authors.
2. Continue active collaboration with the academic publishing community to elicit feedback on the implementation of the plan – and provide a route for us to share the global and disciplinary specific feedback we receive around access and equity issues.

Question 2 Recommendations

1. Provide training to grantees on key aspects of how best to communicate and disseminate research in ways that ensure compliance of NIST requirements. Ensure awareness of best practice and standards to support discoverability and access.
2. Collaborate with publishers to develop more tailored research use-focused findings and output – to maximize the potential for research to reach its target audience/s.
3. Create guides encouraging the use of alternative text for visual or print impaired individuals.
4. Appoint staff resources to support NIST Accessibility requirements.

Question 3 Recommendations

1. Maintain a consistent dialogue with researchers and the public to monitor impact.
2. Provide training materials for authors and grant managers to collaborate on finding the best route to publish.

Question 4 Recommendations

1. Align with other funders to assign common PIDs for NIST grants – consider using the established framework provided by the Crossref Funding Registry to enhance discoverability for the public.
2. Utilize current and prevalent PID infrastructure where possible to avoid creating additional learnings (and need for interoperability building) for researchers.
3. Adopt researcher-centered practices to capture key descriptive information – using auto-complete/ integrated links, drop-down lists, and APIs to other websites to keep simple, avoid manual entry, and ensure accurate completion; include PIDs assignment for grant-related information in existing NIST systems/those used by its researchers where possible.
4. Monitor and adopt industry and global standards and best practices where applicable.

Additional Feedback Recommendation

1. Allow authors the choice to determine how to license their work.

1. How can NIST ensure equity in publication opportunities?

T&F appreciates NIST's commitment to supporting equity in publishing opportunities and T&F is committed to delivering a range of publishing options and content types that are inclusive, holistic and provide opportunities for researchers working across career stages and disciplines. The best way to ensure equity in publication opportunities for peer-reviewed scholarly publications is by NIST funding Gold Open Access (OA) without restrictions. Supporting Gold OA empowers researchers to determine the best use of their grant funding to communicate their results to the public. This allows the final published version of an article to be permanently available for free to the public. The fee for services rendered to produce gold OA research is covered by an article processing charge (APC).

T&F is keen to continually develop approaches to ensure equity and diversity in publication opportunities and we know that this requires input and collaboration between multiple stakeholders from across the scholarly ecosystem. Specifically, it requires publishers to help researchers and more marginalized communities across career stage by providing training to navigate the publishing landscape – and understand the options available. It requires funders to investigate their processes for grant selections, so that grant opportunities are not

exclusively awarded to the same highly resourced researchers and institutions. University efforts to expand opportunities through institutional grants can help to reduce inequities and provide a diversity of voices. Collaborative commitment to tackle the challenge of increasing equity from diverse stakeholders ensures that all knowledge makers are given the opportunity to contribute, irrespective of race, ethnicity, gender, geography, language, discipline, or funding source.

T&F is committed to equity in publication opportunities and has taken the following steps to answer this call to action.

T&F offers over 300 dedicated OA journals, and more than 95% of our venues offer an OA pathway. We work with authors to find the best home for their work. Across our portfolio we also offer an increasing number of tailored fully open access publishing venues which increase the opportunities for researchers to publish research outside of more selective venues, and ensures that regardless of the results (e.g. negative, null, incremental research), there is an outlet for researchers to make their findings discoverable and accessible to all. This includes our 'open research' publishing venues provided by F1000. The F1000 publishing model combines the speed of preprints with the benefits of full publication. This includes functionality that ensures the robustness, quality, and transparency of research using rigorous editorial checks, open data, and invited open peer review. Authors are given autonomy throughout the entire publishing process.

Publishing venues that operate on this basis help to remove the barriers to publication that many researchers face, particularly early career researchers, and are entirely aligned with the DORA principles. T&F is signed up and committed to the DORA declaration, the Managing Director of our imprint F1000, is a member of DORA's Board of Advisers. Through this, we are developing ways to support researchers across all career stages and disciplines to share the outputs of their research in more transparent and accessible ways.

In addition to providing more trusted and reputable routes for researchers to publish their work, our role as a publisher is to support initiatives to build capacity and skills to help deliver trust and value in the research we receive and publish. An example of this is when in 2019, T&F launched the 'Excellence in Peer Review: Taylor & Francis Reviewer Training Network'. This aims to provide clear practical advice to researchers to improve the quality of their reviews and introduce the key principles to early career researchers and researchers from under-represented groups. This initiative encourages greater inclusion and participation in peer review.

We support the initiative for Transforming Institutions by Gendering contents and Gaining

Equality in Research (TRIGGER). This aims to understand and address the causes behind under-representation of women in Science, Technology, Engineering, Mathematics, and Medicine (STEMM) subjects.

We were also the 2021 publisher winner of ABC International Excellence Award for Accessible Publishing, recognized by the Award's judges for an "innovative approach to alternative text for images, graphs, and diagrams."

T&F believes in the importance of public access to amplify and communicate research that delivers change and improves lives. We would like to encourage the NIST to collaborate actively with publishers to ensure we are positioned to provide the services that are needed to drive equity and access to research.

Question 1 Recommendations

1. Fund Gold OA without restrictions to author choice.
2. Continue active collaboration with the academic publishing community to elicit feedback on the implementation of the plan – and provide a route for us to share the global and disciplinary specific feedback we receive around access and equity issues.

2. How can NIST ensure public access and accessibility to outputs of NIST-funded research?

Ensuring all functionality and content is accessible to all people is a laudable ambition. Developing clear guidelines for formatting with a focus on accessibility will improve access for everyone. One of the primary roles of publishers is to transform content from authors into a final product through typesetting and copyediting. This labor-intensive effort alongside the creation and sharing of article metadata is critical for making content machine readable and discoverable.

Across the company, T&F is developing new formats and tailored views of research that are designed to support access, use, and reuse of research. One of the emerging tools is the implementation of Plain Language Summaries (PLSs). These additional abstracts allow us to succinctly summarize the key points from a piece of scientific research to a non-technical audience. Creating PLSs tailored views of content is an important way to increases access, engagement in research content and findings to the various communities and stakeholders who are the ultimate users of research, including policymakers, students, educators, and the public.

Through our society partners, funders and other expert community links, we have a wealth of experience in developing research access and dissemination strategies and solutions. By

collaborating alongside knowledge creators and federal agencies, publishers can create models and formats that are designed to deliver the requirements of our stakeholders.

Emerging scientific innovations require training for authors to remain at the forefront of their fields. T&F works alongside our expert academic editors and societies and we have a depth of experience in providing research communication, sharing, and dissemination training to researchers across the career stages and across disciplines. These include: How to manage and share data; How to publish for reach and impact; How to peer review effectively. We are willing and able to support the NIST in providing training to its various cohorts of grantees.

We provide guidance and best practice to our authors and editorial boards to ensure that content is published with adherence to various accessibility standards. For example, we have in-house experts who can provide authors with a guide to alternative text so that they can provide the best descriptions. We also provide content in a variety of formats including PDF, ePub2, ePub3, and HTML formats to expand equity and accessibility. T&F has adopted this practice and works to provide a suitable format – we provide these formats on request from individuals and institutions.

In 2022, T&F brought on our first Accessibility Officer to provide oversight, coordination, guidance, and leadership to the organization's Accessibility Working Group. This addition has already provided the organization with a more effective and efficient accessibility strategy. If not done so already, the NIST could consider appointing staff resources with specific remit and responsibility for ensuring accessibility.

Question 2 Recommendations

1. Provide training to grantees on key aspects of how best to communicate and disseminate research in ways that ensure compliance of NIST requirements. Ensure awareness of best practice and standards to support discoverability and access.
2. Collaborate with publishers to develop more tailored research use-focused findings and output – to maximize the potential for research to reach its target audience/s.
3. Create guides encouraging the use of alternative text for visual or print impaired individuals.
4. Appoint staff resources to support NIST Accessibility requirements.

3. How can NIST monitor impacts on affected communities—authors and readers alike?

NIST can monitor impacts on affected communities by maintaining ongoing communication with authors and readers to learn about how the plan and policy are impacting their work and access. T&F provides a myriad of options for researchers working across all career stages and disciplines to reach their intended audiences and their communities of interest and help build careers and research capacity. We do not support blunt measures and restrictions on where researchers can publish – instead preferring to develop solutions collaboratively to deliver sustainable publishing solutions that preserve academic freedom and choice, while maximizing the reach, access and potential impact of research.

When calculating prices for APCs, T&F aims to be transparent with our costs and mitigate inequities with our stakeholders. We continue to balance this transparency with market considerations and remain compliant with U.S. antitrust price fixing laws. List price APCs across T&F journals range from US $600 to US $4,800. The list price APC is reviewed at least annually across journals and varies across several factors, including:

- **Funding available for the journal**: this varies by discipline. Additionally, some journals are supported through grants, typically from their own society, meaning charges are subsidized.
- **Impact**: highly selective journals typically charge higher APCs. The APC on the accepted article also covers the work and analysis put into rejected content.
- **Discipline**: we set APCs based on funding patterns within the field, as well as benchmarking against APCs on related journals to ensure that rates are realistic and equitable among communities.
- **Demographics of submissions / publications**: considering the geography of submissions allows us to price fairly to market.

The type of research output: shorter article types and non-traditional formats typically incur lower APCs. It should be noted that many customers do not pay the list price APC, benefitting from flexible funding options including:

- Discounts of up to 100% where a professional member association or learned society provide additional support.
- Discounts due to their organization's participation in a membership scheme or transformative agreement, which usually allow researchers to submit without any individual payment on their part.

T&F is committed to cost transparency and providing our published authors with world class services so that their work can have the greatest impact on society.

Recommendations Question 3

1. Maintain a consistent dialogue with researchers and the public to monitor impact.

2. Provide training materials for authors and grant managers to collaborate on finding the best route to publish.

4. How can NIST improve the plan to provide greater public access to NIST-funded research results?

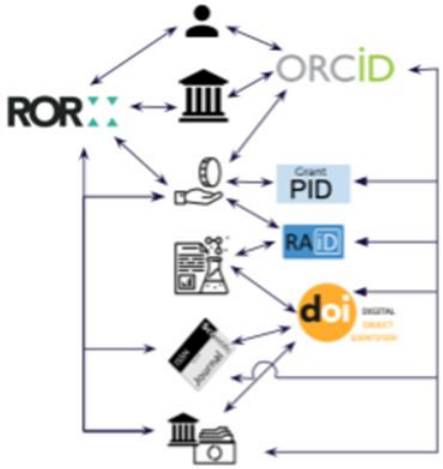
One method to provide greater public access to NIST-funded research results is with the integration of persistent identifiers (PIDs), research descriptors, and metadata into grant and publishing workflows. This will enhance interoperability and increase discoverability and useability to the public.

PIDs and associated metadata are the essential foundation blocks to enable the discoverability and access of research and its findings. Like many publishers, T&F is a member of Crossref and ensures high quality metadata around all the research it publishes; we are also building our capabilities for inclusion of funding and grant data associated with articles by utilizing the Crossref Funding Registry.

Several funding agencies are also now members of Crossref (e.g. Wellcome) and register DOIs for all their awarded grants. By assigning a PID (e.g. a DOI) to its grants, the NIST would provide an identifier that can be captured by publishers in the article submission workflow and thereby allow grant output connections to be made and greatly simplify impact-related (and ROI) tracking for the NIST.

Adding grant IDs would add new information into this network of PIDs and provide increased transparency and create the possibility for robust ROI calculations for funders. This wider network of PIDS would include:

- Researcher IDs – e.g ORCiD
- Institution IDs – e.g. ROR or Ringgold
- Funder IDs – e.g. FundRef
- Project IDs e.g. RAID
- Research object IDs e.g. DOIs for publications, data, preprints, code and other outputs



An approximate representation of a PID-enabled research information workflow. This image is based on the workflows described in Developing a persistent identifier roadmap for open access to UK research http://repository.jisc.ac.uk/id/eprint/7840

Adding all (or a selection) of these PIDs into the metadata of research articles and objects stored in other online locations (e.g. data repositories) will ensure progress to a more machine-readable ecosystem to enable analysis and ROI for funders. Most of the PID issuing agencies – ORCID, Crossref, Datacite, RRIDs – operate on a not-for-profit basis and are the commonly used standards across the research system. To support the simple capture of relevant research and researcher meta-data in its grant workflows, we recommend that NIST consider:

- Providing integrated links
- Drop-down lists
- APIs to other websites

Recommendations Question 4

1. Align with other funders to assign common PIDs for NIST grants – consider using the established framework provided by the Crossref Funding Registry to enhance discoverability for the public.
2. Utilize current and prevalent PID infrastructure where possible to avoid creating additional learnings (and need for interoperability building) for researchers.
3. Adopt researcher-centered practices to capture key descriptive information – using auto-complete/ integrated links, drop-down lists, and APIs to other websites to keep simple, avoid manual entry, and ensure accurate completion; include PIDs assignment for grant-related information in existing NIST systems/those used by its researchers where possible.
4. Monitor and adopt industry and global standards and best practices where applicable.

Additional NIST Plan Feedback

Licensing

T&F asks researchers to sign a publishing agreement with the organization. This gives T&F the right to publish the Version of Record of the research. For OA publications, in exchange for an APC, the researcher retains the copyright and allows them to choose a Creative Commons license of their choice. T&F will handle the validation, production, dissemination, and act as a steward in the long-term curation of the article, so that the readers are viewing the latest Version of Record.

Typically, where a CC BY license is applied, this allows others to distribute, remix, tweak, and build upon the work, even commercially, if they credit the author for the original creation. F1000 articles are published under a CC BY license.

There are several licensing options T&F offers to authors which allows them to choose what others can do with their research article once it is published. We encourage NIST to allow authors the choice of licensing and not to mandate a one size fits all approach to licensing.

Additional Feedback Recommendation

1. Allow authors the choice to determine how to license their work.

Thank you,

Andrew Bostjancic
Open Research Policy & External Affairs Manager
Taylor & Francis Group

WILEY

August 14, 2023

Katherine Sharpless
Open Access Officer
National Institute of Standards and Technology
100 Bureau Drive, Stop 4701
Gaithersburg, MD 20899

RE: Response to NIST Request for Comments on the Draft NIST Plan for Providing Public Access to the Results of Federally Funded Research [Docket No.: 230612-0147]

Dear Ms. Sharpless:

Thank you for the opportunity to share our views on NIST's plan to enhance public access to the results of NIST-supported research. We appreciate this important feedback mechanism and look forward to working with NIST and other stakeholders to deliver meaningful outcomes that advance open science and research. We support the objectives set forth in the memo released by the White House Office of Science and Technology Policy (OSTP) of Ensuring Free, Immediate, and Equitable Access to Federally Funded Research, and we hope to work with NIST to ensure scientists have the tools necessary to communicate their research for the advancement of science.

Wiley is an American multinational publishing company founded in 1807. For more than 215 years, we have been unlocking human potential. Dedicated to the creation and application of knowledge, Wiley serves the world's researchers, learners, innovators, and leaders, helping them achieve their goals and solve the world's most important challenges. As the nation's largest scientific and scholarly research publisher and the world's leading disciplinary society publishing partner, we are proud to publish nearly 2,000 academic journals which, together, brought more than 280,000 unique pieces of scholarship to the world in 2022.

We appreciate that the efforts described by NIST are focused on public access. It is our firm belief that to be truly effective, any public access policy should promote open access and open science and in doing so should:

- Endorse the final published Version of Record (VoR)[1] as the gold standard article format which will deliver the full benefit of open access (OA) to the scientific community;

- Include a federal funding mechanism that recognizes the cost of peer-review, editing, publication, distribution, and long-term stewardship of articles, while alleviating to the extent possible the administrative and financial burden of publishing costs from universities, libraries, and individual researchers; and

- Facilitate productive public-private partnerships that leverage the many services provided by publishers to advance discovery and innovation, thereby avoiding a duplication of efforts and investments already made in support of open access and open science.

[1] NIST nomenclature refers to the Version of Record (VoR) as the "final published article."

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We urge NIST to recognize that all public access mandates and open access models have costs and require some form of funding to ensure they are not only rigorous in terms of integrity, but also sustainable. Publishers continually invest in the systems, workflows, and mechanisms required to both deliver and preserve peer reviewed scholarly research. In other words, there are no cost-free routes to publishing open access. Any future policy should help researchers budget for anticipated publishing costs and ensure that available funding is distributed fairly, to help tackle inequality in publishing opportunities, create transparency for the monitoring of costs and impact of the new mandates, and avoid the problem of placing additional financial burdens on individual researchers.

At Wiley, we believe everyone should be able to access the research they need. We welcome opportunities to expand access to the results of federally funded research in a way that maintains the integrity of the scholarly record and provides maximum benefit to the public and the American scientific enterprise, in coordination with federal funding agencies.

America's scientific leadership and competitiveness are supported by a thriving scholarly communication ecosystem of researchers and institutions that relies upon the coordinated efforts of academia, government, and industry. We must work together to create the tools and infrastructure to advance research in the 21st century and ensure that this system is imbued with the values that underpin the U.S. research community: rigor and integrity; academic freedom; openness; partnership; diversity, equity, and inclusion (DE&I); and respect for innovation, commercialization, and intellectual property rights. For instance, publishers are doing their part by investing in tools and infrastructure to protect rigor and integrity, particularly with respect to artificial intelligence, as the rapidly evolving technology has the potential to challenge the longstanding values of the research community.

We are committed to fulfilling that mission by investing significantly in open science, working in partnership with all stakeholders in the scientific research ecosystem, including researchers and scientists and their supporting institutions, U.S. Government agencies, and other publishers.

Ultimately, our mission is to serve researchers. We must ensure that under no circumstance will the quality of the works we publish and the valuable services that journals and societies provide to communities be compromised.

We look forward to working with NIST and the wider scientific community on these issues and 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, and we must leverage the entrepreneurial spirit of the research community and private sector to enable our country's continued leadership in the scientific enterprise.

Sincerely,

Jay Flynn

Jay Flynn
Executive Vice President and General Manager - Research
Wiley

5. Appendix A. Change Log

Requirements in the original plan are compared to those in the new plan below.

Table A1. Major Differences Between the 2014 and 2023 Plans.

ORIGINAL PLAN	UPDATED PLAN
Make all peer-reviewed publications available through PubMed Central (PMC) 12 months after publication	Make a subset of peer-reviewed publications available through PMC immediately upon publication. Availability is dependent on authorship (e.g., all federal authors, NIST associates) and whether co-authors can claim copyright. If some co-authors can claim copyright and assign their copyright to the publisher, make those publications available in PMC 12 months after publication
Encourage authors to publish data associated with a paper	Require authors to publish data associated with a paper
NIST's publications system collects digital object identifiers (DOIs) for externally published papers and ORCIDs (a persistent identifier for an individual). NIST assigns DOIs to datasets, code, and NIST Technical Series publications.	Enhance publications system to collect persistent identifiers for funder and awardee institutions, agreement or funding vehicles, and other types of research outputs, as available.