National Institute of Standards and Technology
Plan for Providing Public Access to Results of Federally Funded Research

Draft for Public Comment
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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[1] 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."[2]
- Enhance innovation and competitiveness by maximizing the potential to create new business opportunities.

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

[1] https://www.nist.gov/open/policies-directives-and-nists-public-access-plan
[2] https://www.whitehouse.gov/wp-content/uploads/2022/05/05-2022-Desirable-Characteristics-of-Data-Repositories.pdf

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.

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.

4. REQUIREMENTS

To the extent feasible and consistent with any legal, privacy, ethical, technical, intellectual property, or security limitations, including national security,[3] 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,[3] 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.

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.

[3] 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, and 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 which is protected under law or policy.

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.[2] 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.

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*, M-10-06, 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.

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.

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.[2]

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.

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.

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.

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

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.

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.

13. TIMELINE FOR IMPLEMENTATION

Key milestones are outlined in each implementation category below.

13.1 Policies

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)

13.2 Infrastructure

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]*
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

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

13.3 Processes

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

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 the Appendix 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.

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

APPENDIX

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.

	FTEs	Loaded Salaries ($M)*	Other Objects ($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 – $5.13/month/user is current rate			0.12
Accessibility training – 'live' training with HR contractor			0.15
Conversion of publication documents to XML, formatting, and deposit into PubMed Central; maintenance of metadata associated with NIST-minted DOIs (NIST Research Library)	6	1.80	0.10
Mechanism to determine when a paper has been published so PMC knows when to release	0.5	0.15	
Data stewards in each of the six Labs to manage documentation and maintenance of data for intramural or extramural reuse, including understanding community needs and potential risks associated with data disclosure	6	1.80	
SUBTOTAL	**20.0**	**$ 6.15**	**$ 0.37**
TOTAL		**$ 6.52**	

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