EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF SCIENCE AND TECHNOLOGY POLICY
WASHINGTON, D.C. 20502

August 25, 2022

MEMORANDUM FOR THE HEADS OF EXECUTIVE DEPARTMENTS AND AGENCIES

FROM: Dr. Alondra Nelson
Deputy Assistant to the President and Deputy Director for Science and Society
Performing the Duties of Director
Office of Science and Technology Policy (OSTP)

SUBJECT: Ensuring Free, Immediate, and Equitable Access to Federally Funded Research

This memorandum provides policy guidance to federal agencies with research and development expenditures on updating their public access policies. In accordance with this memorandum, OSTP recommends that federal agencies, to the extent consistent with applicable law:

1. Update their public access policies as soon as possible, and no later than December 31st, 2025, to make publications and their supporting data resulting from federally funded research publicly accessible without an embargo on their free and public release;
2. Establish transparent procedures that ensure scientific and research integrity is maintained in public access policies; and,
3. Coordinate with OSTP to ensure equitable delivery of federally funded research results and data.

1. Background and Policy Principles

Since February 2013, federal public access policy has been guided by the *Memorandum on Increasing Access to the Results of Federally Funded Research* (2013 Memorandum).[1] Issued by the White House Office of Science and Technology Policy (OSTP), the 2013 Memorandum directed all federal departments and agencies (agencies) with more than $100 million in annual research and development expenditures to develop a plan to support increased public access to the results of federally funded research, with specific focus on access to scholarly publications and digital data resulting from such research.

Nearly ten years later, every federal agency subject to the 2013 Memorandum has developed and implemented a public access policy in accordance with its guidance.[2] As a result, the American public has experienced great benefits: more than 8 million scholarly publications have become accessible to the public. Over 3 million people read these articles for free every day. The 2013 federal public access policy set the stage for a paradigm shift away from research silos and

[1] See the 2013 Memorandum: https://obamawhitehouse.archives.gov/sites/default/files/microsites/ostp/ostp_public_access_memo_2013.pdf
[2] See the 2021 OSTP Public Access Congressional Report: https://www.whitehouse.gov/wp-content/uploads/2022/02/2021-Public-Access-Congressional-Report_OSTP.pdf

toward a scientific culture that values collaboration and data sharing. The 2013 Memorandum helped to reshape the landscape for data and research by sharing results freely and openly with the public and the scientific community.

Building on these important advances, the policy guidance laid out in the 2013 Memorandum can be improved to achieve delivery of federally funded research results and data to *all* of America. Years of public feedback have indicated that the primary limitation of the 2013 Memorandum is the optional 12-month embargo from public access of any publication resulting from federally funded research. This provision has limited immediate access of federally funded research results to only those able to pay for it or who have privileged access through libraries or other institutions. Financial means and privileged access must never be the pre-requisites to realizing the benefits of federally funded research that the American public deserves.

A federal public access policy consistent with our values of equal opportunity must allow for broad and expeditious sharing of federally funded research—and must allow all Americans to benefit from the returns on our research and development investments without delay. Upholding these core U.S. principles in our public access policy also strengthens our ability to be a critical leader and partner on issues of open science around the world. The U.S. is committed to the ideas that openness in science is fundamental, security is essential, and freedom and integrity are crucial.[3] Improving public access policies across the U.S. government to promote the rapid sharing of federally funded research data with appropriate protections and accountability measures will allow for greater validity of research results and more equitable access to data resources aligned with these ideals. To promote equity and advance the work of restoring the public's trust in Government science, and to advance American scientific leadership, now is the time to amend federal policy to deliver immediate public access to federally funded research.

2. Learning from the Lessons of COVID-19

When federally funded research is available to the public, it can improve lives, provide policymakers with important evidence with which to make critical decisions, accelerate the rates of discovery and translation, and drive more equitable outcomes across every sector of society.

Americans were offered a window into the great benefits of immediate public access to federally funded research at the outset of the COVID-19 pandemic. In the wake of the public health crisis, government, industry, and scientists voluntarily worked together to adopt an immediate public access policy, which yielded powerful results: research and data flowed effectively, new accessible insights super-charged the rate of discovery, and translation of science soared. The shift in practice during COVID-19 demonstrated how delivering immediate public access to federally funded research publications and data can provide near real-time returns on American taxpayer investments in science and technology.

Immediate public access to COVID-19 research is a powerful case study on the benefits of delivering research results and data rapidly to the people. The insights of new and cutting-edge research stemming from the support of federal agencies should be immediately available—not

[3] See: https://www.whitehouse.gov/ostp/news-updates/2022/06/21/readout-of-dr-alondra-nelsons-participation-in-the-g7-science-ministerial-progress-toward-a-more-open-and-equitable-world/

just in moments of crisis, but in every moment. Not only to fight a pandemic, but to advance all areas of study, including urgent issues such as cancer, clean energy, economic disparities, and climate change. American investment in such research is essential to the health, economic prosperity, and well-being of the Nation. There should be no delay between taxpayers and the returns on their investments in research.

3. Updates to Policy Guidance on Increasing Equitable Access to Federally Funded Research Results

To meet these core commitments, OSTP is updating policy guidance to promote improved public access to federally funded research results. **In accordance with the provisions listed in Section 3, Federal agencies should develop new, or update existing, public access plans as soon as possible, and submit them to OSTP and the Office of Management and Budget (OMB) no later than:**

(1) 180 days after the date of this memorandum for federal agencies *with more* than $100 million in annual research and development (R&D) expenditures; and
(2) 360 days after the date of this memorandum for federal agencies with $100 million *or le*ss in annual R&D expenditures. This extended deadline is designed to accommodate a longer lead time for federal agencies who were not subject to the 2013 Memorandum.

Agencies should complete and publish full policy development for plans implementing provisions in Section 3 by December 31st, 2024, with an effective date no later than one year after the publication of the agency plan. The timeline is designed to accommodate the items identified in Section 5 of this memorandum, including interagency collaboration, public engagement with those impacted by the change in policy, and OSTP feedback on agency drafts.

a) **Peer Reviewed Scholarly Publications**:
Federal agencies should update or develop new public access plans for ensuring, as appropriate and consistent with applicable law, that all peer-reviewed scholarly publications[4] 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**.

Plans should describe:

i. How peer-reviewed scholarly publications should be made publicly accessible;
ii. How to maximize equitable reach of public access to peer-reviewed scholarly publications, including by providing free online access to peer-reviewed scholarly

[4] Such scholarly publications always include peer-reviewed research articles or final manuscripts published in scholarly journals, and may include peer-reviewed book chapters, editorials, and peer-reviewed conference proceedings published in other scholarly outlets that result from federally funded research.

publications in formats that allow for machine-readability[5] and enabling broad accessibility through assistive devices; and,

iii. The circumstances or prerequisites needed to make the publications freely and publicly available by default, including any use and re-use rights, and which restrictions, including attribution, may apply.

b) **Scientific Data**

i. Scientific data[6] underlying peer-reviewed scholarly publications resulting from federally funded research should be made freely available and publicly accessible by default at the time of publication, unless subject to limitations as described in Section 3(c)(i) and should be subject to federal agency guidelines for researcher responsibilities regarding data management and sharing plans, consistent with Section 3(c) of this memorandum.

ii. Federal agencies should develop approaches and timelines for sharing other federally funded scientific data that are not associated with peer-reviewed scholarly publications.

iii. Federal agencies should also provide guidance to researchers that ensures the digital repositories used align, to the extent practicable,[7] with the National Science and Technology Council document entitled "Desirable Characteristics of Data Repositories for Federally Funded Research."[8]

OMB: Office of Management and Technology

iv. Federal agency research: Agency public access plans and policies should clarify that federal researchers must follow federal laws and OMB policies that govern federal agencies' information management practices and protect certain types of data,[9] 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.

---

[5] "Machine readability" refers to a format that can be easily processed by a computer without human intervention while ensuring no semantic meaning is lost (such as the NISO Z39.96-2015 JATS XML standard currently used by PubMed Central).

[6] For the purposes of this memorandum, "scientific data" include 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 definition of "scientific data" is similar to but broader than the term "research data" defined by 2 CFR 200.315 (e) and 45 CFR 75.322 (e).

[7] The term "extent practicable" is used to signal that suitable repositories for all types of data may not be available within the timeframe provided.

[8] See the 2022 NSTC Subcommittee on Open Science guidance: https://doi.org/10.5479/10088/113528

[9] 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. See also, language from OMB M-19-15 with respect to maximizing the amount of data that can be made public using cutting-edge technologies to provide secure access to confidential data while reducing the risk of re-identification.

c) Public access plans should outline the policies that federal agencies will use to establish researcher responsibilities on how federally funded scientific data will be managed and shared, including:
    i) Details describing any potential legal, privacy, ethical, technical, intellectual property, or security limitations, [10] 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;
    ii) Plans to maximize appropriate[11] sharing of the federally funded scientific data identified in Section 3(a) of this memorandum, such as providing risk-mitigated opportunities for limited data access;[12] and,
    iii) The specific online digital repository or repositories where the researcher expects to deposit their relevant data, consistent with the federal agency's guidelines.
d) In consultation with OMB, federal agencies should allow researchers to include reasonable publication costs and costs associated with submission, curation, management of data, and special handling instructions as allowable expenses in all research budgets.
e) Federal agencies should report to OSTP, when requested, on the status of their public access plans and policy implementation, including the number of all scholarly publications funded by the federal agencies and any other relevant statistics collected by the agency.

4. Ensuring Scientific and Research Integrity in Agency Public Access Policies

Public access policies that deliver transparent, open, secure, and free communication of federally funded research and activities in an expeditious manner are an important tool to uphold scientific[13] and research[14] integrity. Federal agencies should take steps to ensure that public access policies support scientific and research integrity by transparently communicating to the public critical information, including that which is related to the authorship, funding, affiliations, and development status of federally funded research. The public should be able to identify which federal agencies support given investments in science, the scientists who conduct that research, and the extent to which peer-review was conducted. These actions support the value that maintaining and restoring public trust in science requires openness, security, freedom, and integrity. **Federal agencies should take actions to ensure that these elements of scientific and**

[10] Including national security concerns.
[11] The term "appropriate" is used to signal that public access to federally funded research results and data should be maximized in a manner that protects confidentiality, privacy, business confidential information, and security, avoids negative impact on intellectual property rights, innovation, program and operational improvements, and U.S. competitiveness, and preserves the balance between the relative value of long-term preservation and access and the associated cost and administrative burden.
[12] For example, secure research data centers, data use agreements, perturbing identifiable information, or excluding sensitive variables.
[13] See the 2022 NSTC Report "Protecting the Integrity of Government Science": https://www.whitehouse.gov/wp-content/uploads/2022/01/01-22-Protecting_the_Integrity_of_Government_Science.pdf
[14] See the 2022 NSTC "Guidance for Implementing National Security Presidential Memorandum 33 (NSPM-33) on National Security Strategy for United States Government-Supported Research and Development" (NSPM-33 Implementation Guidance): https://www.whitehouse.gov/wp-content/uploads/2022/01/010422-NSPM-33-Implementation-Guidance.pdf

research integrity are in place in order to strengthen public trust in federally funded science.

To achieve these goals, the following steps should be taken by federal agencies, as appropriate and consistent with their missions. By December 31st, 2024, federal agencies should submit to OSTP and OMB a second update to their public access plans specifying approaches taken to implement the provisions in this Section 4. Agencies should complete and publish full policy development for plans implementing these provisions by December 31st, 2026, with an effective date no later than one year after the publication of the agency plan. Federal agencies should, consistent with applicable law:

a) Collect and make publicly available appropriate metadata[15] associated with scholarly publications and data resulting from federally funded research, to the extent possible at the time of deposit in a public access repository. Such metadata should include at minimum:
   i) all author and co-author names, affiliations, and sources of funding, referencing digital persistent identifiers,[16] as appropriate;
   ii) the date of publication; and,
   iii) a unique digital persistent identifier for the research output;
b) Instruct federally funded researchers to obtain a digital persistent identifier that meets the common/core standards of a digital persistent identifier service defined in the NSPM-33 Implementation Guidance,[17] include it in published research outputs when available, and provide federal agencies with the metadata associated with all published research outputs they produce, consistent with the law, privacy, and security considerations.
c) Assign unique digital persistent identifiers[18] to all scientific research and development awards[19] and intramural research protocols that have appropriate metadata linking the funding agency and their awardees through their digital persistent identifiers.

5. Public Access Plan Coordination Among Federal Agencies

Coordination among federal science agencies[20] is critical for the success of delivering America's research to the public. The National Science and Technology Council Subcommittee on Open Science was chartered to facilitate such coordination between federal science agencies in conjunction with OSTP. Concurrent with and following the development of agency plans described Section 3 and Section 4 of this memorandum, the Subcommittee on Open Science will:

[15] For the purposes of this memorandum, metadata include information conveyed with the publications and data upon deposit in a public access repository to ensure proper attribution and versioning.
[16] See the NSPM-33 Implementation Guidance for definition: A digital identifier that is globally unique, persistent, machine resolvable and processable, and has an associated metadata schema.
[17] See Point 5 in the Digital Persistent Identifiers section of the NSPM-33 Implementation Guidance
[18] As a complement to implementation of the Federal Funding and Accountability Transparency Act
[19] Consistent with NSPM-33 Implementation Guidance, a research and development award refers to support provided to an individual or entity by a federal research agency to carry out research and development activities, which may include support in the form of a grant, contract, cooperative agreement, or other such transaction.
[20] Federal science agencies here are defined as any federal agency with an annual extramural research expenditure of over $100,000,000 per 42 USC § 6623(f).

a) coordinate between federal science agencies to enhance efficiency and reduce redundancy in public access plans and policies, including as it relates to digital repository access;
b) improve awareness of federally funded research results by all potential users and communities;
c) consider measures to reduce inequities in publishing of, and access to, federally funded research and data, especially among individuals from underserved backgrounds and those who are early in their careers;
d) develop procedures and practices to reduce the burden on federally funded researchers in complying with public access requirements;
e) recommend standard consistent benchmarks and metrics to monitor and assess implementation and iterative improvement of public access policies over time;
f) improve monitoring and encourage compliance with public access policies and plans;
g) coordinate engagement with stakeholders, including but not limited to publishers, libraries, museums, professional societies, researchers, and other interested non-governmental parties on federal agency public access efforts;
h) develop guidance on desirable characteristics of, and best practices for sharing in, online digital publication repositories;
i) identify the key parameters that must be considered in planning how to maximize appropriate sharing of federally funded scientific data that have not been used to support scholarly publications; and,
j) develop strategies to make federally funded publications, data, and other such research outputs and their metadata are findable, accessible, interoperable, and re-useable, to the American public and the scientific community in an equitable and secure manner.

6. General Provisions

Nothing in this memorandum shall be construed to impair or otherwise affect authority granted by law to an executive department, agency, or the head thereof; or functions of the Director of OMB.

Nothing in this memorandum, or the agency plans developed pursuant to it, shall be construed to authorize or require federal agencies to undermine any right under the provisions of Title 17, 18, or 35 of the United States Code, or to violate the international obligations of the United States.

Provisions of this memorandum should be implemented to the extent feasible and consistent with applicable law, privacy, indigenous rights, foreign policy and international development objectives, and national security considerations. Any provisions of the 2013 Memorandum that are not updated or superseded by this new policy guidance are maintained. Provisions of this memorandum should be implemented consistent with law, OMB Guidance, and the Uniform Guidance 2 CFR 200.

This memorandum is not intended to, and does not, create any right or benefit, substantive or procedural, enforceable at law or in equity, by any party against the United States; its departments, agencies, or entities; its officers, employees, or agents; or any other person.

7. Taking Next Steps Together

The extraordinary progress in open science and public access led by federal agencies has laid the foundation for these critical next steps. As we move forward together in implementing these critical actions, we will do so in partnership and with a shared vision for an ever-stronger and more equitable federal scientific ecosystem.

Immediate public access to America's research publications and data will serve our collective goals of accelerating scientific discovery, strengthening translation and policymaking, and lowering the barriers of access to science for all of America.

As we move forward, OSTP will establish a process for supporting the implementation of these updates. We are grateful to you and your dedicated staff for your valued contributions to strengthening public access and supporting the advancement of health, safety, security, and equity.