Updates on NSF Geospace Data Infrastructure

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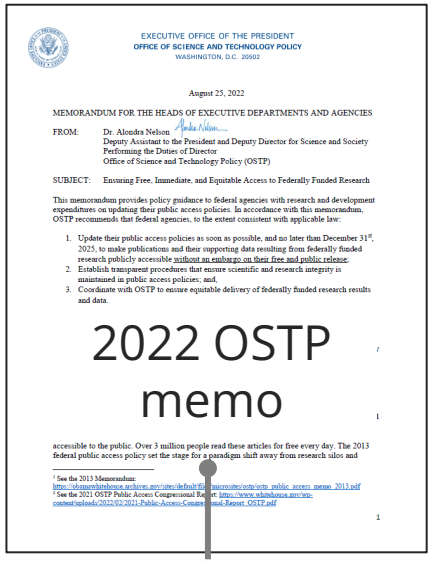
June 11, 2024
CEDAR Workshop

NSF Public Access 2.0 (PA2)

NSF PA2 implements new federal-wide requirement for <u>immediate</u> (upon publication) public access to *articles and underlying data* for federally-funded research*



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

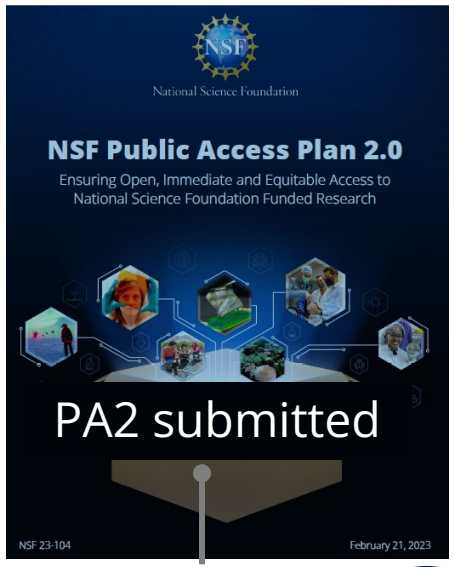
This memorandum provides policy guidance to federal agencies with research and development expenditures on updating their public access policies. In accordance with this memorandum, OSTP recommends that federal agencies, to the extent consistent with applicable law:

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.

2022 OSTP memo

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
[2] See the 2021 OSTP Public Access Congressional Report



PA2 submitted

2024

Second Phase PA2 due to OSTP

2025

Second Phase of PA2 Implementation

Aug 25, 2022

Feb 21, 2023

PAPPG Draft with PA2 policies

Fall 2024

NSF PA2 goes into effect

Fall 2026

NSF PA2 developed

NSF RFI on Public Access (Jan. 19, 2024)

NSF Public Access 2.0 *phase 2* (2024-26) will address scientific and research integrity

*** NOTE: there are allowances for potential legal, privacy, ethical, technical, intellectual property, or security limitations***

Unpacking the 2022 memo guidance

	CURRENT: NSF15-52	Jan 2025
WHAT	Peer-reviewed publications resulting from NSF funding	Peer-reviewed publication and conference proceedings resulting from NSF funding + Data undergirding above
HOW	Submission to NSF-PAR via annual reporting (RPPR) by PI	Submission to NSF-PAR via annual reporting (RPPR) by PI + Deposition of data to an external repository and recording DOI in NSF-PAR by PI
AND	Recent NSF-PAR update allows documentation of datasets via digital object identifier (DOI)	Implementation plans for these policy changes in development now

NSF Public Access

Articles deposited in NSF PAR can be in one the forms:

- Version of Record (**VOR**)
- Author's Accepted Manuscript (**AAM**)
- Journal publication.

Geospace Data Infrastructure Activities

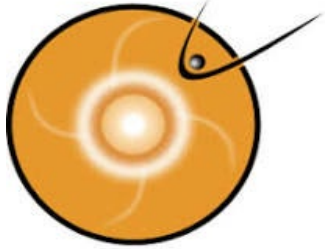
- Issued a Dear Colleague Letter: Innovations in Open Science Planning workshops (NSF 23-141)
- Created the Interagency Heliophysics Data Working Group
  - Organized a Cloud Workshop, July 2023
  - Held Listening Sessions July-October, 2023
  - Held agency townhall at TESS, April 2024
- GEO rep and member of the NSF Public Access Open Science Working Group involving in policy changes.
- Provided travel funds to Workshops and a summer school
  - DASH Meeting 2023, October 2023.
  - Python in Heliophysics Summer School, May 20-24, 2024.
  - NSF NCAR Community Expectations for a Geoscience Data Commons, May 29-31, 2024.
  - CCMC Workshop, June 3-7, 2024.

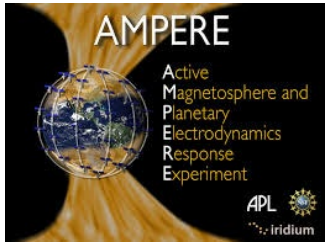
AGS-Supported Data Infrastructure

- **Madrigal Database:** manages and serves archival and real-time data from a wide range of upper atmospheric science instruments.
- **SuperMAG:** provides easy access to validated ground magnetic field perturbations in the same coordinate system, identical time resolution and with a common baseline removal approach.
- **Community Coordinated Modeling Center (with NASA):** provides access to modern space research models; tests and evaluates models; supports Space Weather forecasters; supports space science education.
- **SuperDARN:** provides access to SuperDARN data in platform-independent netCDF files and data visualizer.
- **AMPERE:** provides AMPERE magnetic perturbation data and data products derived from the Iridium constellation

MIT HAYSTACK OBSERVATORY

SuperMAG





AGS-Supported Data Infrastructure

The US NSF National Center for Atmospheric Research (NSF NCAR)

- **Geoscience Data Exchange (GDEX)**: public data repository.
- **Computational and Information Systems Lab (CISL)**: provides supercomputing, analysis and visualization resources, stores, develops, and curates data sets.
- **High Altitude Observatory (HAO)**: provides data (MLSO and PFI) and models.
- **Climate Data Gateway (CDG)**: provides long-term stewardship for data assets related to geo- and helio-science model output that are generated as a result of NCAR research.

To search and discover datasets across all of NCAR's data repositories, use: https://data.ucar.edu/.
To submit a request to deposit data at NCAR, do so through: https://submit-data.ucar.edu.

Contact datahelp@ucar.edu or Douglas Schuster schuster@ucar.edu for more information.
Contact Douglas Schuster if interested to be on the ios-geodatacommons listserv.

Open Science Funding Opportunities

- **NSF 23-141**: Dear Colleague Letter: Innovations in Open Science (IOS) Planning Workshops (nsf23141) | NSF - National Science Foundation
- **NSF 23-529**: Research Coordination Networks (RCN)
- **NSF 23-556**: Pathways to Enable Open-Source Ecosystems (POSE)
- **NSF 23-046**: Advancing Research in the Geosciences Using Artificial Intelligence (AI) and Machine Learning (ML)
- **NSF 23-534**: Geosciences Open Science Ecosystem (GEO OSE)
- **NSF 22-632**: Cyberinfrastructure for Sustained Scientific Innovation (CSSI)
- **NSF 24-7414**: Cyberinfrastructure Public Access Open Science (CI PAOS)
- **NSF 24-085**: Dear Colleague Letter: Leveraging Cyberinfrastructure for Research Data Management (RDM)
- **National AI Research Resource Pilot:** NAIRR Pilot - NAIRR Pilot Resource Requests to Advance AI Research