Geosciences Open Science Ecosystem (GEO OSE)

January 20, 2023

Program solicitation **NSF 23-534**

Proposal deadline (due 5 p.m. submitter's local time): **March 16, 2023**

Raleigh Martin, Eva Zanzerkia (GEO/EAR)
Allen Pope, Marc Stieglitz (GEO/OPP)
Maria Womack, Eric DeWeaver (GEO/AGS)
Sean Kennan, Kevin Johnson (GEO/OCE)
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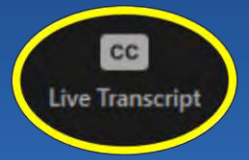
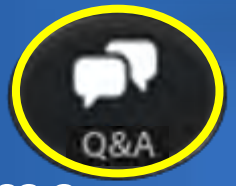
WEBINAR LOGISTICS

- Webinar (including Q&A) will be **recorded** and posted on the GEO OSE program page: https://beta.nsf.gov/funding/opportunities/geosciences-open-science-ecosystem-geo-ose
- Following the presentation, time will be provided for general Q&A (next slide)
- Proposal-specific questions may be directed to Program Contacts listed on the GEO OSE program page

Zoom Webinar Set-up

- All attendees are muted, and webcams are disabled.
- To enable live transcript, click on the 

feature.
- To ask a question, please use the 

feature.
  - You may submit questions at any time.
  - You may send questions anonymously:

PROGRAM OVERVIEW

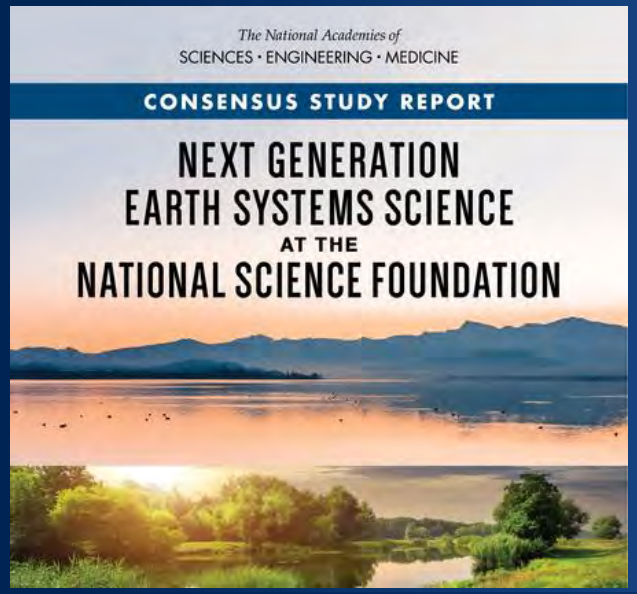
Topics to be covered:

- Motivation
- Vision for GEO OSE
- Priorities for GEO OSE
- Scientific scope of GEO OSE
- GEO OSE proposal tracks
- Relation to other opportunities

Motivation

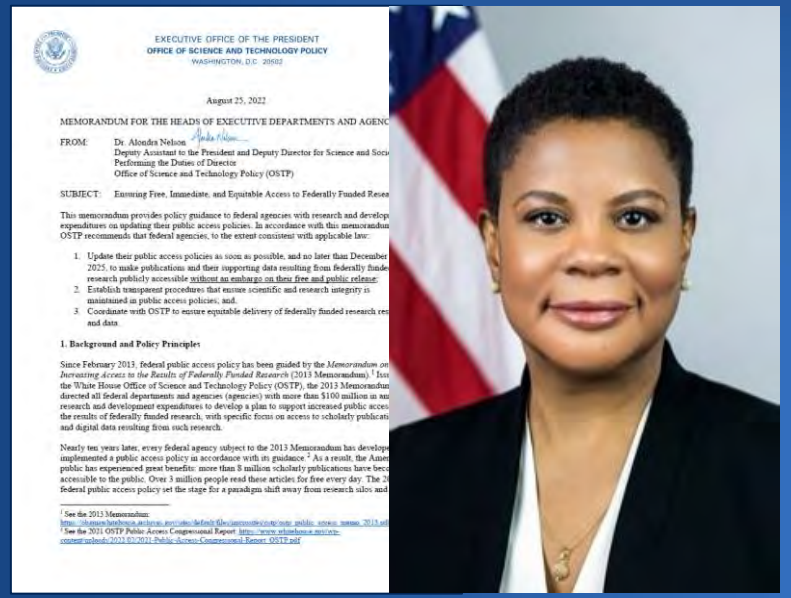
2023 is the Year of Open Science! (https://open.science.gov)

Enabling an integrated approach to understanding the dynamic and interconnected components of the Earth System



National Academies of Science, Engineering, and Medicine, 2022

Expanding equitable access to research, increasing trust in science, and advancing a scientific culture of collaboration


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 AGENC

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

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

This memorandum provides policy guidance to federal agencies with research and develop
expenditures on updating their public access policies. In accordance with this memorandun
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
2025, to make publications and their supporting data resulting from federally funde
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 res
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] Iss
the White House Office of Science and Technology Policy (OSTP), the 2013 Memorandun
directed all federal departments and agencies (agencies) with more than $100 million in an
research and development expenditures to develop a plan to support increased public acces
the results of federally funded research, with specific focus on access to scholarly publicati
and digital data resulting from such research.

Nearly ten years later, every federal agency subject to the 2013 Memorandum has develope
implemented a public access policy in accordance with its guidance.[2] As a result, the Amer
public has experienced great benefits: more than 8 million scholarly publications have beco
accessible to the public. Over 3 million people read these articles for free every day. The 20
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: https://www.whitehouse.gov/wp-content/uploads/2022/03/2021-Public-Access-Congressional-Report_OSTP.pdf

Office of Science and Technology Policy "Nelson Memo," 2022

Building on grassroots efforts to establish open science principles and practices

EarthCube
Transforming Geosciences Research

https://www.gida-global.org/care

- TRUST Principles for digital repositories
- Reproducibility & Replicability

Vision for Geosciences Open Science Ecosystem (GEO OSE)

To support **sustainable** and **networked** open science activities and capabilities…

…that foster **inclusive access** to data, physical collections, software, advanced computing, and other resources…

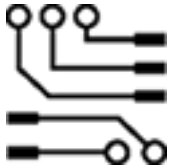
…toward **advancing research and education** in the **geosciences**

Possible efforts include (but are not limited to):

- *enhancements to existing cyberinfrastructure capabilities*
- *community/cohort building around open science practices*
- *training activities that broaden access to and usability of existing resources*

Major priorities for GEO OSE

Improve the openness and scientific value of the existing network of cyber-infrastructure (CI) resources in the geosciences



Democratize access to these CI capabilities, including via cloud-based approaches that reduce barriers to use

Strengthen the capacity of geoscientists to access, utilize, and collaborate within the ecosystem of open science resources

Advance open science principles (e.g., FAIR, CARE, TRUST, Reproducibility, Replicability) within the geosciences

This solicitation supports activities across this spectrum of priority areas

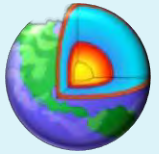
Scientific scope of GEO OSE

"Geosciences" refers to the academic research communities supported by the Geosciences Directorate (GEO) at NSF, which includes the domains of ***atmospheric and geospace sciences***, ***ocean sciences***, ***Earth sciences***, and ***polar sciences***

Directorate for Geosciences (GEO)

Atmospheric and Geospace Sciences (AGS)

Ocean Sciences (OCE)



Earth Sciences (EAR)

Polar Programs (OPP)

Further details on the scientific topics that are supported in the geosciences can be found within descriptions of individual GEO programs (https://www.nsf.gov/funding/programs.jsp?org=GEO)

GEO OSE proposal tracks

Track 1

- ***Early-stage activities***, such as development of pilot capabilities or community-building activities that advance a vision for open science within geosciences domains)
- **2 years duration**
- **$400,000 maximum budget** (project total across collaborative proposals)

Track 2

- ***Larger-scale activities*** aimed at providing an accessible and sustainable ecosystem of GEO OSE resources
- **3 years** duration
- **Up to about $1,600,000** commensurate with size and scope (project total)

Relation to other opportunities

GEO Cyberinfrastructure Opportunities

https://www.nsf.gov/geo/geo-ci/

International collaboration

GEO Division-specific CI support:
- Geoinformatics (EAR)
- Polar CI (OPP)
- AGS programs
- OCE programs

Office of Advanced Cyberinfrastructure (OAC):
- CSSI (CI capabilities)
- SCIPE (CI professionals)
- CyberTraining

Industry partnerships

GEO OSE

NSF-wide initiatives:
- FAIR Open Science (FAIROS) RCNs
- AI Institutes
- Technology, Innovation, and Partnerships (TIP) opportunities

Across government:
- Federal agencies participating in 2023 Year of Open Science: https://open.science.gov
- e.g., NASA Transform to Open Science (TOPS)

Grassroots Efforts

PROPOSAL PREPARATION

Topics to be covered:

- Submission eligibility
- Merit review criteria
- Leveraging shared computing
- Budget preparation
- Other supplementary documents

Submission eligibility

Eligible organizations to submit proposals:

- Institutions of Higher Education (IHEs)
- Non-profit, non-academic organizations
- Other Federal Agencies and Federally Funded Research and Development Centers (FFRDCs): *Contact the appropriate program before preparing a proposal for submission*

Partnering with submitters:

- Partnerships between academia, industry, and others are encouraged.
- Mechanisms include:
  - Subaward arrangements (for funded partners)
  - Unfunded collaborations (documented via letters of collaboration).

Merit review criteria

Standard criteria:

- **Broader Impacts:** The potential to benefit society and contribute to the achievement of specific, desired societal outcomes
- **Intellectual Merit:** The potential to advance knowledge

Solicitation-specific criteria:

- **Geosciences Advancement**:
  - How well do proposed activities contribute to demonstrated needs for advancing geosciences research and/or education?
  - Do proposed activities include broad participation of geoscientists throughout the project?
- **Open Science Alignment:**
  - How effective and feasible is the vision for open science?
  - How well do the proposed activities help the project move towards this vision?

See "Specific Requirements" in the Program Description

Leveraging NSF-Supported Shared Computing

- Advanced computing support available via the **ACCESS (Advanced Cyberinfrastructure Coordination Ecosystem: Services & Support) program -** https://access-ci.org/
- **High-Throughput Computing (HTC) resources** available via the PATh (Partnership to Advance Throughput Computing) project - https://path-cc.io/
  - *See Proposal Preparation Instructions in solicitation*
- Commercial **cloud computing resources** available via CloudBank Cloud Access - https://www.cloudbank.org/faq
  - *See Proposal Preparation Instructions in solicitation*

Budget preparation

- **Track 1:** Maximum **$400,000** (sum across collaborative proposals), over 2 years
- **Track 2:** Up to about $1,600,000 (sum across collaboratives), over 3 years
- **Travel costs:** Awardees are expected to participate in annual PI meetings to be held in the Washington, DC, area with travel costs supported by the award (at least 1 PI per project, but collaborative projects do not need to send multiple if they don't want**).**
- **CloudBank.org**: Costs count toward budget limit but should ***not*** be listed on budget page; rather, specify this in associated supplementary document.

Other supplementary documents

1. **Personnel List (required):** Submit a single unified personnel list for the entire project. Provide the last name, first name, and institution/organization, for each person known to be involved (need not include students/postdocs not yet identified)
2. **Letters of Collaboration (if applicable):** To demonstrate collaborative arrangements
3. **High-Throughput Computing Resources (if applicable):** Required if requesting HTC resources
4. **Cloud Computing Resources (if applicable):** Required if request cloud credits through CloudBank

Other Important Proposal Reminders

- **Title:** Please note that titles should be proceeded with "GEO OSE Track X: "

- Updated PAPPG (Proposal & Award Policies & Procedures Guide) effective January 30, 2023
  - This includes Bio Sketch and Current & Pending formats

OTHER CONSIDERATIONS

Topics to be covered:

- Prospects for GEO OSE program
- Resources for proposers
- Q&A session

Prospects for GEO OSE program

- GEO OSE builds on EarthCube, continuing NSF's commitment to this community into the future.
- Program is structured such that Track 1 projects may develop into future Track 2 submissions
- However, no specific plans for future competition
- As always, NSF aims to be responsive to community needs, directions, and priorities.

Resources for proposers

- Read the solicitation carefully! (NSF 23-534)
- This presentation will be posted on GEO OSE program page
- Proposers are encouraged to reach out to Program Contacts with specific questions.
  - *SUGGESTION: To facilitate well-informed advice from NSF, it is helpful to provide a 1-page project summary when reaching out.*

GEO OSE Q&A

To ask a question, please use the Q&A feature.

You may submit questions at any time.
You may send questions anonymously:

Webinar / Q&A will be **recorded** and posted on the GEO OSE program page https://beta.nsf.gov/funding/opportunities/geosciences-open-science-ecosystem-geo-ose

Please direct further questions to any of the below program contacts: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