

NSF Priorities and Opportunities

Maggie Benoit (GEO/EAR)

Eva Zanzerkia (GEO/EAR)



DIRECTORATE FOR GEOSCIENCES (GEO)

For a full list of GEO programs and opportunities scan the code below.



**Division of
Atmospheric and
Geospace Science
(AGS)**

**Division of Earth
Sciences (EAR)**

**Division of Ocean
Sciences (OCE)**

**Office of Polar
Programs (OPP)**

**Division of Research,
Innovation,
Synergies, and
Education (RISE)**



DAS Supported across GEO

Many programs in GEO fund DAS-related science

- RCN: Distributed Acoustic Sensing (DAS) in Geosciences and Engineering
- Collaborative Research/EAGER: Toward Long-Distance Ocean and Seismic Sensing on Optical Telecommunications Infrastructure
- Seafloor Fiber Optic Array in Monterey Bay (SEAFOAM)
- The Seismic Response of Mexico City Using Fiber-Optic Seismology
- Antarctic Subsea Cable workshop



Antarctic Subsea Cable Workshop

A GEO/OPP and CISE/OAC sponsored presentation

January 13, 2022, 3:00 – 4:00 PM ET

[Zoom meeting link](#)



NSF sponsored a workshop to assess the value of a submarine fiber optic telecommunications cable from New Zealand to McMurdo Station. A cable with terabit-scale networking capability could eliminate current bandwidth constraints faced by researchers, educators and support functions while also reducing the latency of current satellite-based communication.

Join us for this presentation to hear from workshop PI and primary coordinator Peter Neff, and Organizing Committee members Bruce Howe, Gwen Jacobs, David Lassner, and Garrett Yoshimi about:

- Workshop process and participation, important observations, take-aways, and outcomes (*final workshop report*: <https://z.umn.edu/AntarcticCableFinalReport>).
- Implications and transformative potential for cyberinfrastructure.
- Cable as a tool for science.



<https://www.pgc.umn.edu/workshops/antarctic-cable/>.



- Public Release Edition of Desk Top Study (*Coming Soon...*)
- Follow-on Studies for
 - Program Management formulation
 - Cable Engineering
 - Route Path Refinement
 - Develop Marine Route Survey requirements
 - Develop Permitting Plan
 - Assess Industry progress on SMART repeater development
- Follow-on Science Workshop(s) (tentative)
 - Refine science goals & requirements
 - Feedback into Route Path Refinement and Cable Engineering
 - Telecommunications Design & ConOps, Integration into R&E Networking Fabric
 - Scope Science Management and Data Management Plan

NSF's Fiscal Year 2024 Budget Request



**Request to increase budget to
~\$11.3 billion**

- **Building a Resilient Planet**
- **Create Opportunities Everywhere**
- **Advance Emerging Industries for National and Economic Security**
- **Strengthen Research Infrastructure**



Building a Resilient Planet Initiative



**Response of
Earth's systems
to changing
climate**



**Adaptation
and resilience**



**Clean energy
technologies**



**Nature-based
solutions**



**Greenhouse
gas
measurements
and removal**

GEO and NSF Major Investments FY24

National Resilience Research Network: \$47.50 M

ObsX – Investing in observing infrastructure: \$20 M

GEO Access: \$8 M

Climate Equity Fellows: \$15 M



GEO-EMBRACE DCL

GEO-EMpowering Broader Academic Capacity & Education

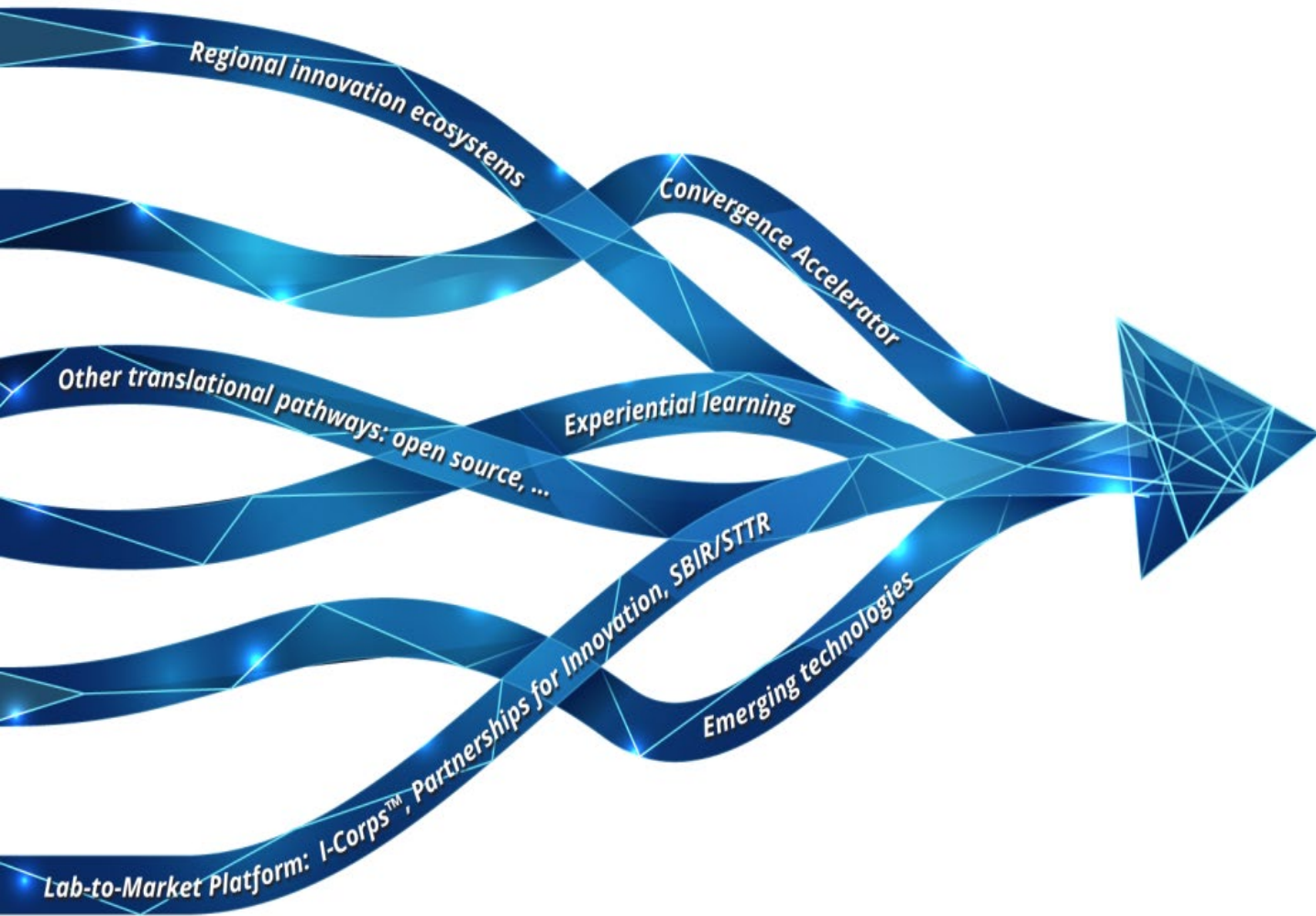
- Expand access and participation of investigators from
 - Historically excluded groups in GEO disciplines
 - Historically excluded institutions

<https://www.nsf.gov/geo/geo-embrace/>

- Solicitation forthcoming



Directorate for Technology, Innovation and Partnerships (TIP)



- Accelerate research results to impact
- Establish translation pathways
- Foster innovation and technology ecosystems
- Partnering to engage the nation's diverse talent

Directorate for Technology, Innovation and Partnerships (TIP)

Regional Innovation Engines

- **April:** Type I Award Announcements
- **Spring-Summer:** Type II Awards in Review



<https://new.nsf.gov/funding/initiatives/regional-innovation-engines>



Future Avenues

Science Challenges

- GEO programs – must advance fundamental science questions

Data Challenges

<https://www.nsf.gov/geo/geo-ci/index.jsp>

- POSE: *Pathways to Enable Open-Source Ecosystems (23-556)*
- CSSI: *Cyberinfrastructure for Sustained Scientific Innovation (22-632)*
- OSE: *Geosciences Open Science Ecosystem Program (23-534)*

Technical Challenges/Industry Partnerships

- TIP

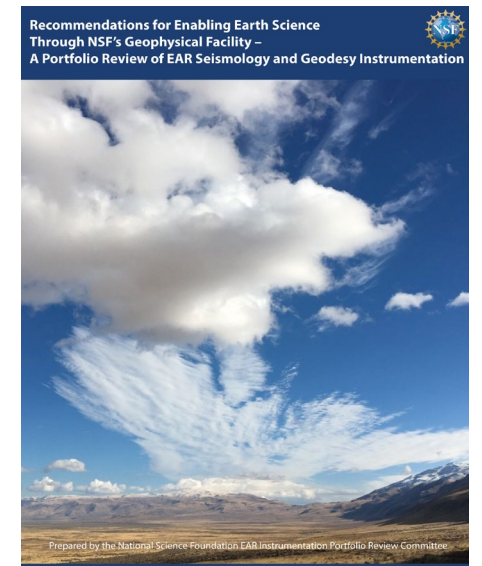
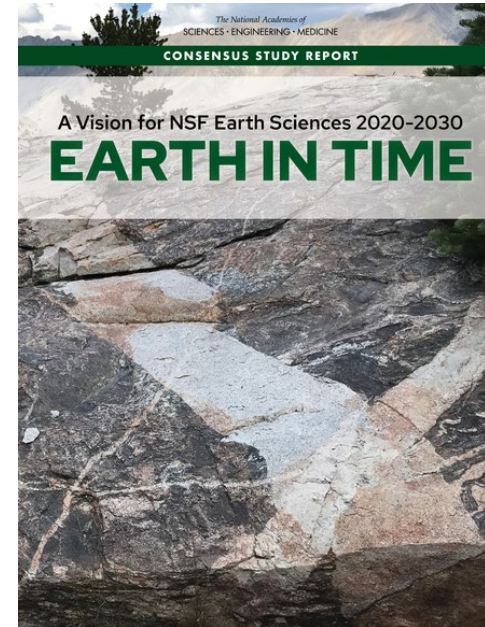


White paper development

Anyone may submit a white paper to NSF at any time

White papers developed with broad engagement tend to get more attention

Prioritization of needs with different models of development are helpful



Upcoming Facility Competition

- NSF has two geophysical facilities SAGE and GAGE
- In 2020, NSF announced (NSF 20-037) that we would be consolidating SAGE and GAGE into a single facility, with a single operator in next competition
- Streamline management and operations and improve science support
- Presentation on June 29th at NSF Research Infrastructure Workshop with more information



Solicitation released

Review Process Summer 2024-Summer 2025

Spring 2024

1 Oct. 2025

Summer 2023

2024-2025

Full Proposals due

New award will begin October 1, 2025



