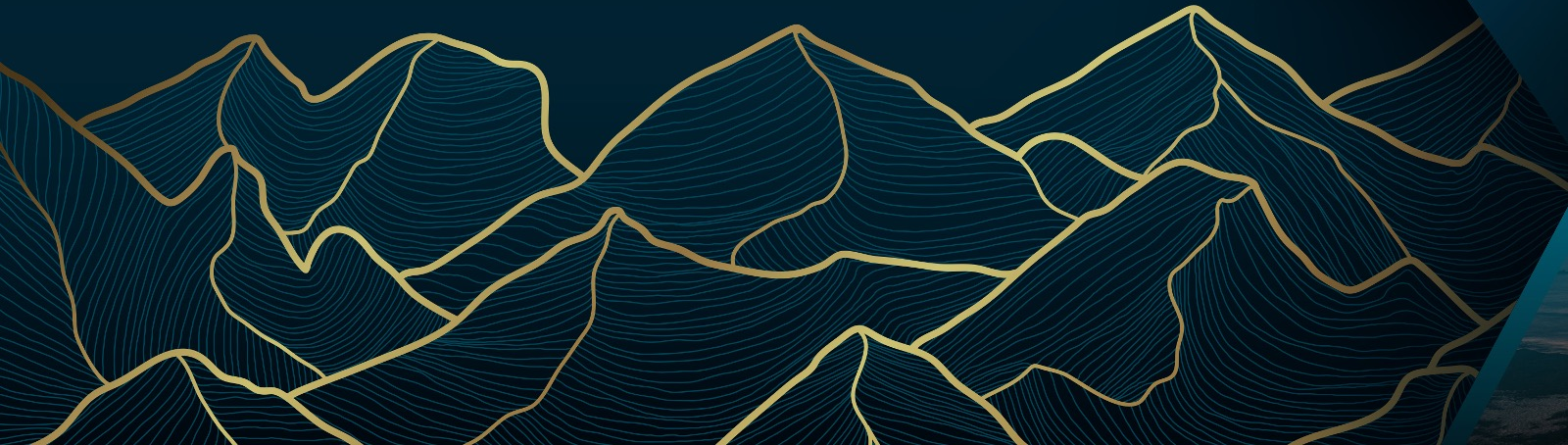




Directorate for Geosciences [GEO]

Dr. Jennifer Wade

*Program Director in
the Division of Earth Sciences*





GEO in the context of NSF

The many parts of Geosciences

Opportunities

Merit Review





NSF Structure

The Director, Office of Budget, Office of International Science & Engineering, Finance, & Award Management, etc.

Directorate for
Biological Sciences (BIO)

Directorate for
**Geosciences
(GEO)**

Directorate for
Engineering (ENG)

Directorate for
**Technology, Innovation and
Partnerships (TIP)**

Directorate for
**Computer & Information
Science & Engineering (CISE)**

Directorate for
**for Mathematical and
Physical Sciences**

Directorate for
**Social, Behavioral &
Economic Sciences (SBE)**

Directorate for
STEM Education



NSF Structure

The Director, Office of Budget, Office of International Science & Engineering, Finance, & Award Management, etc.

Directorate for
Biological Sciences (BIO)

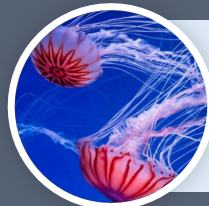
Directorate for
Geosciences
(GEO)

Directorate for
Engineering (ENG)

Directorate for
**Technology, Innovation and
Partnerships (TIP)**



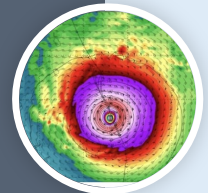
Earth Sciences
(EAR)



Ocean Sciences
(OCE)

for
oral &
ces (SBE)

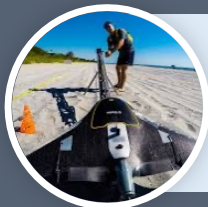
Directorate for
STEM Education



**Atmospheric and
Geospace Sciences**
(AGS)

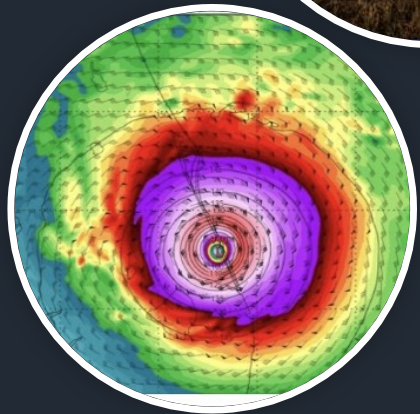


Polar Programs
(OPP)



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

Atmospheric and Geospace Sciences (AGS)



Research to understand processes including space weather, tropospheric weather, climate, and air quality.



Atmospheric and Geospace Sciences (AGS)



Atmosphere Section

Atmospheric Chemistry
Climate and Large-Scale Dynamics
Paleoclimate
Physical and Dynamic Meteorology



NCAR/Facilities Section

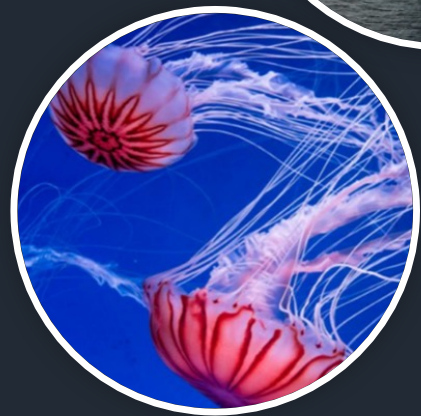
Education and DEI Programs in AGS
National Center for Atmospheric Research (NCAR)
User-requestable observing and laboratory facilities



Geospace Section

Aeronomy (upper atmosphere)
Geospace Facilities
Magnetospheric Physics
Solar Terrestrial
Space Weather

Ocean Sciences (OCE)



Research on the oceans and their interactions with the Earth and atmosphere.



Ocean Sciences (OCE)



Ocean Section

Biological Oceanography

Physical Oceanography



Marine Geosciences Section

Chemical Oceanography

Marine Geology & Geophysics



Integrative Programs Section

Ocean Drilling

Ocean Education

Ocean Observatories Initiative

Oceanographic Instrumentation &
Technical Service

Oceanographic Technology &
Interdisciplinary Coordination

Ship & Submersible Support

Ship Operations



Ship-time & Marine Equipment Request Form (SME)

Home Contact Email Signup Search

UNOLS
UNIVERSITY-NATIONAL OCEANOGRAPHIC LABORATORY SYSTEM

ABOUT SHIPS/FACILITIES SCHEDULES COMMITTEES MEETINGS FORMS & DOCUMENTS JOBS & EARLY CAREER

LEARN MORE ABOUT COLLABORATIVE RESEARCH PLANNING

UPCOMING EVENTS

AICC Virtual Summer 2024 Meeting
Virtual...

2024 RVTEC Meeting
University of...

2024 Fall Council & Annual Meeting
Skidaway...

2025 Winter AICC Meeting
Seattle, WA...

[VIEW EVENTS CALENDAR](#)

unols.org

Welcome to UNOLS

University-National Oceanographic Laboratory System (UNOLS) is an organization of 58 academic institutions and National Laboratories involved in oceanographic research and joined for the purpose of coordinating oceanographic ships' schedules and research facilities.

MFP Request an account About Schedule

Welcome to Marine Facilities Planning



Ship-time & Marine Equipment Request Form (SME)

The SME is used to request shiptime with the Academic Research Fleet AND/OR to request use of pooled and portable equipment (coring, dredging, deep submergence facility)

mfp.us

Marine Facilities Planning - Scientist How To Guide

Marine Facilities Planning is the new system designed to replace the old Ship Time Request System (STRS). This website allows scientists to request ship time on the vessels of the U.S. Academic Research Fleet and then update their funding. Eventually the fleet's cruise planning will also be accomplished through this portal.

Please click on the links below to learn more about each topic. You can find the MFP website here: <https://www.mfp.us>.

If your questions are not answered below, please email - mfp@unols.org.

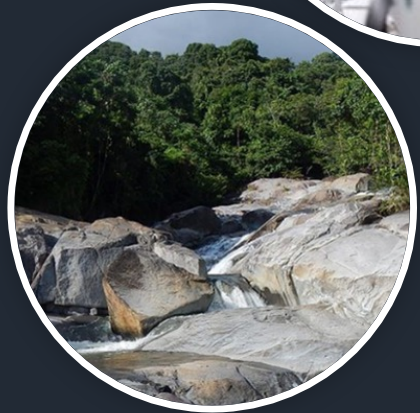
A text **Help document** with a Table of Contents can be found **here**. Click on a topic in the Table of Contents to be directed to the correct topic.

A list of quick Tutorials can be found here:





Earth Sciences (EAR)



Structure, composition, and evolution of the Earth including processes from the tree canopy, through soils, the crust, mantle, and core

Supports field work, theoretical and computational work, large and small experiments, and infrastructure



Earth Sciences (EAR)

Disciplinary Programs



Geobiology & Low-Temperature
Geochemistry



Geomorphology & Land-Use
Dynamics



Geophysics



Hydrologic Sciences



Petrology & Geochemistry



Sedimentary Geology & Paleobiology



Tectonics

Integrated Activities

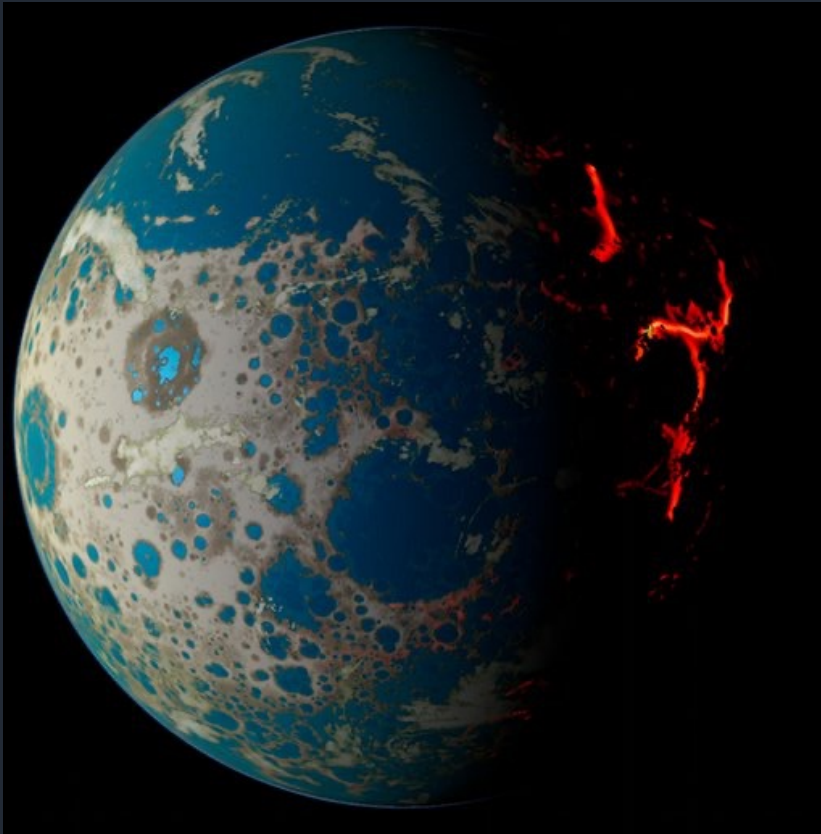
- Education & Human Resources
- Instrumentation & Facilities
- Frontier Research in Earth Sciences (FRES)
- Paleo Perspectives on Present and Projected Climate (P4CLIMATE)
- EAR Postdoctoral Fellowships
- Geoinformatics



Earth Sciences (EAR)

Geoscience Lessons for and from Other Worlds (GLOW)

GLOW
NSF 22-032



- What can the study of other worlds reveal about the first billion years of Earth history?
- What can the study of other worlds reveal about Earth's past and its future climate?
- How can our basic science understanding of Earth processes and systems guide the identification of other habitable worlds?

+ *more*

image: NASA



Earth Sciences (EAR)

Geoscience Lessons for and from Other Worlds (GLOW)

- Extraterrestrial investigations to understand Earth or vice versa

Critical Minerals Research (GEO-CM)

- Research on formation, characterization, development, and separation of critical materials and the impacts on the environment and society

GLOW
NSF 22-032

GEO-CM
NSF 23-057



Earth Sciences (EAR)

Geoscience Lessons for and from Other Worlds (GLOW)

- Extraterrestrial investigations to understand Earth or vice versa

GLOW
NSF 22-032

Critical Minerals Research (GEO-CM)

- Research on formation, characterization, development, and separation of critical materials and the impacts on the environment and society

GEO-CM
NSF 23-057

GEO EMpowering BRoader Academic Capacity and Education (GEO-EMBRACE)

- Research at non-R1 institutions; Two tracks, 2 + 4 years

EMBRACE
NSF 23-617

Seed proposals (1) initiate research and/or education programs at their own institutions; and/or (2) build or catalyze research collaborations or partnerships

Growth proposals can request up to four years of funding. In addition to research, funding may be used to support undergraduate and/or graduate students, post-doctoral scholars, salary (summer, course buyout, sabbatical) and other research related expenses.



Earth Sciences (EAR)

Geoscience Lessons for and from Other Worlds (GLOW)

- Extraterrestrial investigations to understand Earth or vice versa

GLOW
NSF 22-032

Critical Minerals Research (GEO-CM)

- Research on formation, characterization, development, and separation of critical materials and the impacts on the environment and society

GEO-CM
NSF 23-057

GEO EMpowering BRoader Academic Capacity and Education (GEO-EMBRACE)

- Research at non-R1 institutions; Two tracks, 2 + 4 years

EMBRACE
NSF 23-617

Research Instrumentation & Infrastructure

- Division-specific programs
- NSF-MRI (Major Research Instrumentation)
- NSF-Midscale Research Infrastructure (MSRI-1 and MSRI-2)

Infrastructure/
Instrumentation



Office of Polar Programs (OPP)



Research and educational initiatives in all scientific fields relevant to study of (and in) Antarctica and the Arctic.



Provides logistical and operational support for work in Antarctica and in remote locations across the Arctic.





Office of Polar Programs (OPP)



Antarctic Solicitations

Oceans and Atmospheric Sciences
Glaciology
Earth Sciences
Organisms and Ecosystems
Astrophysics and Geospace



Arctic Solicitations

Natural Sciences
System Science
Observing Network
Social Sciences
Research Coordination and Policy Support



Polar Solicitations

Polar Cyberinfrastructure
Data & Sample Reuse
Polar Education & Outreach
Postdoctoral Fellows Program



Office of Polar Programs (OPP)

Early Career Support NSF GRFP (Graduate Research Fellowship) [nsfgrfp.org](https://www.nsfgrfp.org)
NSF CAREER (Faculty Early Career Development)

Broadening Participation GEO-EMBRACE (Academic Capacity and Education)
AISL (Advancing Informal STEM Learning)
IUSE: EDU (Improving Undergrad STEM Education)

Cross-Disciplinary Opportunities Geoscience AI and ML (23-046)
CSSI (Cyberinfrastructure for Sustained Science)
P4Climate (Paleo Perspectives on Present + Projected Climate)



Updates on Field Logistics

Arctic

- Arctic Fieldwork Update for 2024

[[search for](#)  and read the [April 4, 2024 update](#)]

COVID-19 Guidance

- Harassment Prevention Response
- Firearms
- Expectations for Receiving Field Support

Antarctic

- Update on Science Support and Infrastructure in Antarctica

[[search for](#)  and read the [April 1, 2024 update](#)]

- OPP continues to strongly encourage proposals for research projects that do not require USAP resources to support fieldwork



Polar Solicitation Highlights

NSF 23-572: Arctic Research Opportunities

- Target Dates Added for Arctic Natural Sciences and Arctic Social Sciences Programs (Mid-January and Mid-July of each year). All other programs remain no deadline.
- New Supplementary Documents:
 - Plan for Safe and Inclusive Working Environments (2 pages)
 - Results of Prior NSF Support information is now required in a supplementary document and not the project description (3 pages)
 - Ethical considerations and approaches to the proposed work (1 page)
 - Updated OPP Data Management Policy (2 pages)
 - Flexibilities for letters of collaborations from community-based organizations.



Polar Solicitation Highlights

NSF 23-508: Antarctic Research Not Requiring U.S. Antarctic Program Field Support

- Proposals accepted anytime
- For projects that use existing data and samples and other research not requiring a presence in Antarctica to do the work
- Supports Cutting Edge Research that:
 - Improves understanding of interactions among the Antarctic region and global systems;
 - Expands fundamental knowledge of Antarctic systems, biota, and processes;
 - Utilizes previously collected samples or focuses on non-field-supported themes;
 - Utilizes the unique characteristics of the Antarctic region as a science observing platform; and
 - Builds capacity and enhances diversity in the US workforce for polar-related science.



Navigating the New Arctic

NSF 23-088: Dear Colleague Letter: Updates to the Navigating the New Arctic (NNA) Program

NNA retired at the end of FY 2023. What does this mean?

- Active NNA projects will continue to be managed by a team of NSF program officers
- NNA Community Office will continue to serve as an important resource
- Next Steps:
 - Navigating the New Arctic within GEO will be superseded by a new effort which builds on the core success of engaging with local communities and broadens the scope to look at resilient futures for these communities
 - Investigators and community members interested in conducting work in these areas may submit proposals to relevant core programs at NSF and are encouraged to contact cognizant Program Officers to discuss the scope of proposed projects



Research, Innovation, Synergies, & Education (RISE)



Fosters transdisciplinary collaborations that engage the broader community to drive transformative discoveries, innovations in workforce development, and use-inspired solutions for urgent Earth system challenges.

**Research, Innovation,
Synergies, and Education
(RISE) Programs
Cross-cut GEO Divisions**



**ATMOSPHERIC &
GEOSPACE SCIENCES**



**EARTH
SCIENCES**



**OCEAN
SCIENCES**



**POLAR
PROGRAMS**

CYBERINFRASTRUCTURE

EDUCATION & DIVERSITY

GLOBAL CLIMATE CHALLENGES

INNOVATION

SYNERGIES



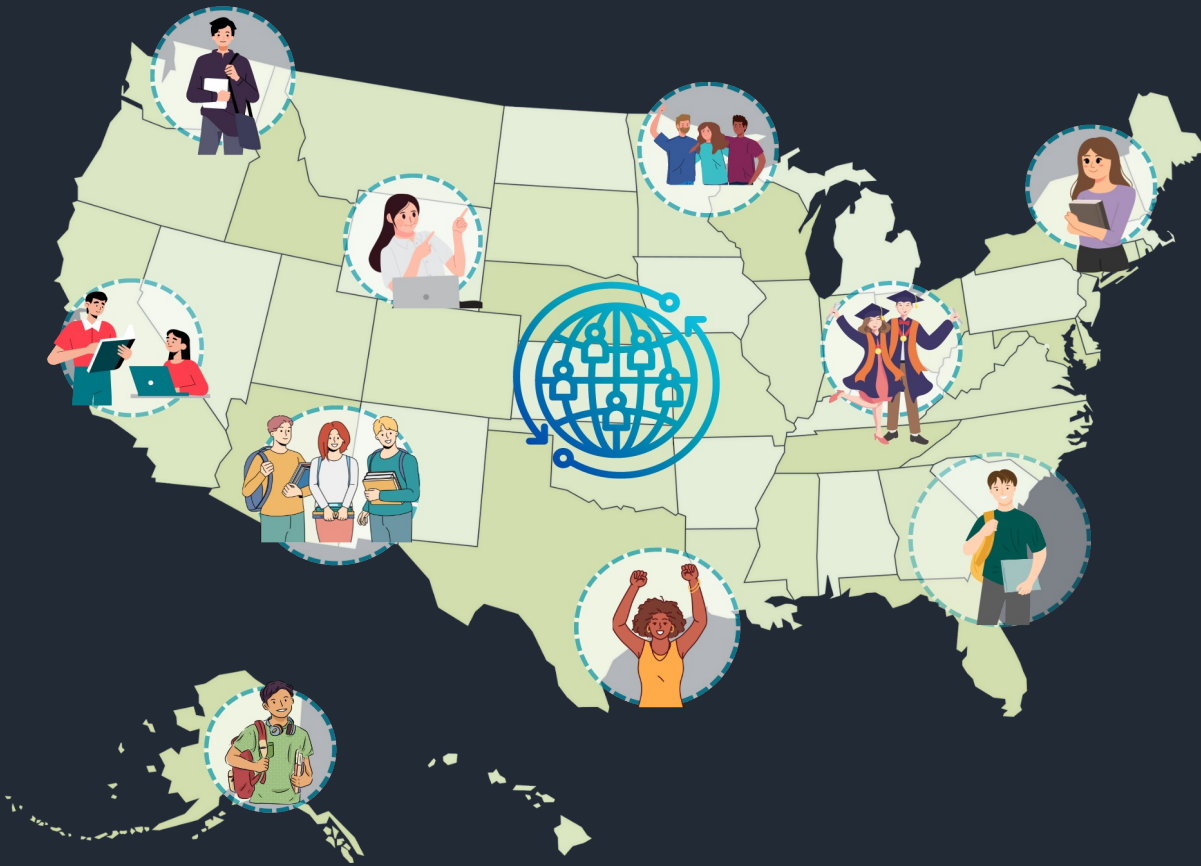
FORECAST

Focus On Recruiting Emerging Climate and Adaptation Scientists and Transformers (NSF 24-558)

Facilitate transition from undergraduate to graduate programs or entrepreneurial positions in STEM fields through student-centered preparation and institutional capacity building

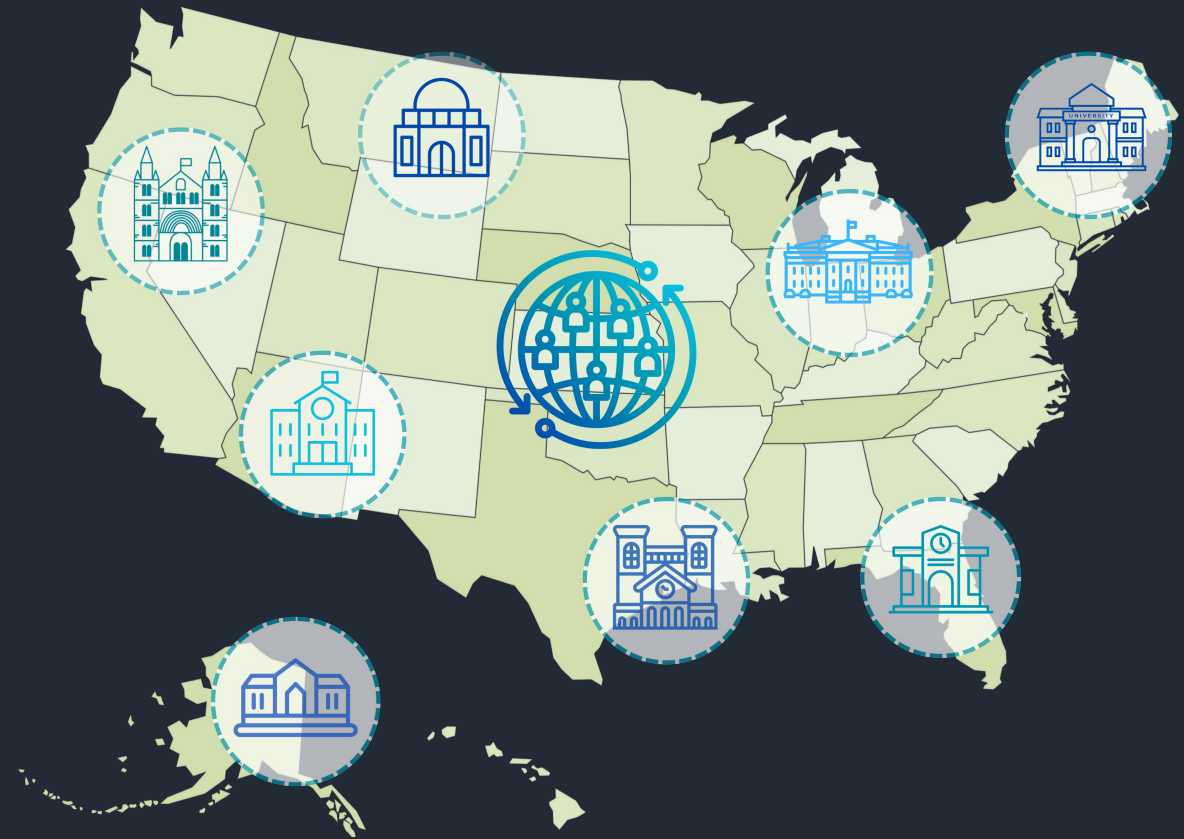


Student Centered



Central Coordinating Hub:
Facilitates professional development for rising senior and graduate student cohorts

Institution Centered



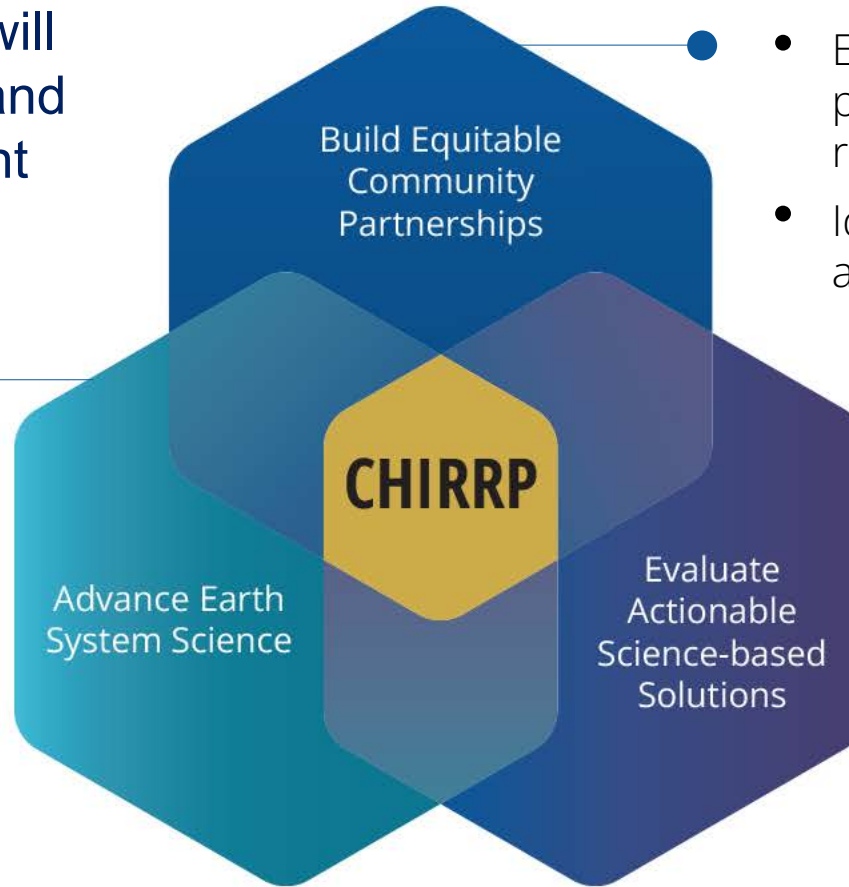
Emerging Research Institutions:
Develop cohorts of graduate students in partnership with community partners



Confronting Hazards, Impacts and Risk for a Resilient Planet (CHIRRP)

Successful CHIRRP proposals will integrate these three elements and inform a futuristic view of resilient communities.

- Explore dynamic interactions among natural and social processes that affect Earth's capacity for sustaining life, now and in the future
- Advance systems approaches needed to mitigate natural disasters and climate change, ensure food and water security, and protect ecosystem health and services



- Establish long-term committed partnerships between communities and researchers
- Identify shared goals to ensure relevance and impact of science on society

- Evaluate pathways to community resilience by advancing Earth systems knowledge
- Translate research outcomes to inform community solutions





CHIRRP Proposal Mechanisms



Planning
Proposals



Conference
Proposals



EARly-concept
Grants for
Exploratory
Research (EAGER)



Research Advanced
by Interdisciplinary
Science and
Engineering
(RAISE)



Research
Coordination
Network (RCN)

The goal for this year is to build capacity for development of large-scale CHIRRP projects in the future. Stay tuned for how this program evolves!



NSF Structure

The Director, Office of Budget, Office of International Science & Engineering, Finance, & Award Management, etc.

Directorate for
Biological Sciences (BIO)

Directorate for
Geosciences
(GEO)

Directorate for
Engineering (ENG)

Directorate for
**Technology, Innovation and
Partnerships (TIP)**



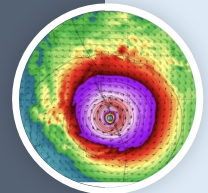
Earth Sciences
(EAR)



Ocean Sciences
(OCE)

for
oral &
ces (SBE)

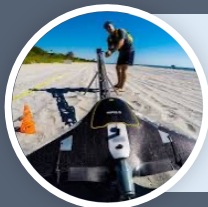
Directorate for
STEM Education



**Atmospheric and
Geospace Sciences**
(AGS)



Polar Programs
(OPP)



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

GEO Facilities

NCAR



Ocean Observatories



Research Vessels



Polar Facilities



Seismic and Geodetic



Repositories



Not sure where you fit?

The screenshot shows the NSF website homepage. At the top, there is a navigation bar with the NSF logo, a search bar labeled "Search NSF", and menu items: "Find Funding & Apply", "Manage Your Award", "Focus Areas", "News & Events", and "About". Below the navigation bar, the page is organized into four columns: "Where to Start", "Explore Funding", "How to Apply", and "Additional Resources".

Where to Start	Explore Funding	How to Apply	Additional Resources
For All Researchers & Educators	Search All Opportunities	Preparing Your Proposal	Research.gov
For Early-Career Researchers	By Directorate	Submitting Your Proposal	Grants.gov
For Postdoctoral Fellows	By Upcoming Due Date	How We Make Funding Decisions	Baam.nsf.gov
For Graduate Students	NSF-wide Initiatives	Proposal & Award Policies & Procedures Guide (PAPPG)	Our Directorates & Offices
For Undergraduates	Search Funded Projects (Awards)		
For Entrepreneurs			
For Industry			

At the bottom of the page, there is a video player with a "Learn more" button and a "View video credit" link.

- search by keyword
- read abstracts
- see which programs funded work like yours

nsf.gov

Talk to
a PD!

What if your project fits in 2+ programs?

Many projects are multidisciplinary (across a division, GEO, or all of NSF)

We as Program Directors are committed to:

- trying our best to find the best home for any proposal submitted
- the inclusivity of all good ideas

One benefit of co-review, beyond sharing financially, is that the PI will benefit from feedback from a broad community

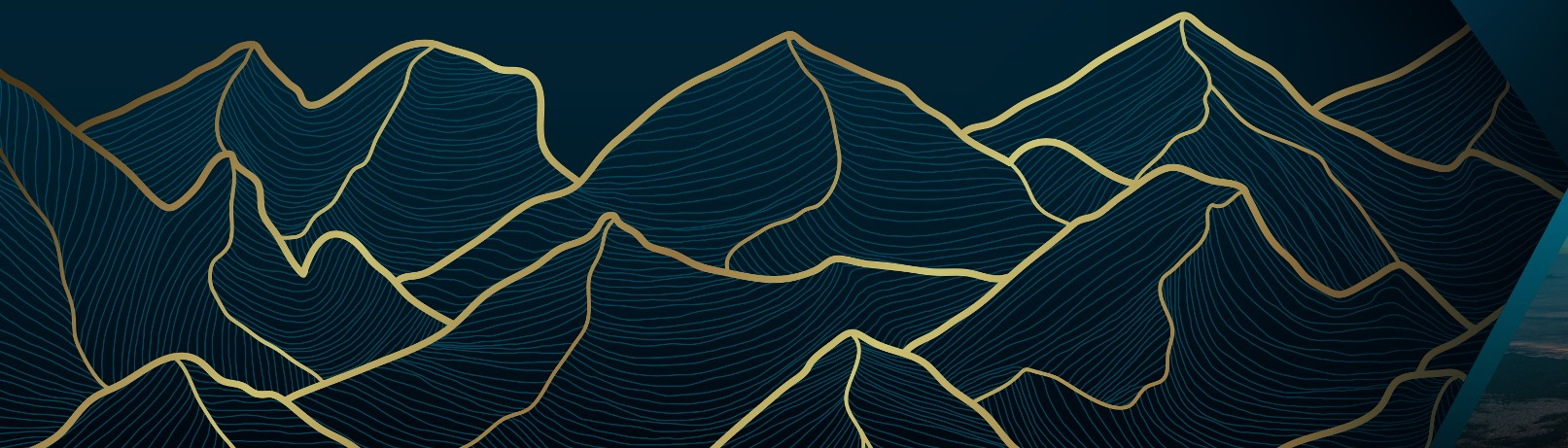


GEO in the context of NSF

The many parts of Geosciences

Opportunities

Merit Review





Career Trajectory Programs



Graduate Research Fellowships Program (GRFP)

- 5-year fellowship; includes 3 years of financial support and an education allowance

[nsfgrfp.org](https://www.nsfgrfp.org)

Postdoctoral Fellowship Programs

- 2 years, details vary by Division/Office

Postdoctoral Fellowships

Faculty Early Career Development Program (CAREER)

- 5 years and \$500K +
- Integrated research and education by untenured ECRs

CAREER Awards

NSF 22-586

Mid-Career Advancement Proposals (MCA)

- Protected time + resources to gain new skills in mentored partnership








Mid-Career Advancement Awards

NSF 22-603



Lead Agency Agreements

Provide a pathway for joint proposals with foreign colleagues

- Current active LAOs:
-  United Kingdom
 -  Switzerland
 -  Taiwan
 -  Ireland
 -  Germany
 -  European Union
 -  Israel

(this is not the only way to collaborate internationally!)





Other Relevant Opportunities

Award Supplements

- REU (Research Experiences for Undergraduates)
- INTERN (grad students get experience in industry, the government, nonprofits, etc)
- Career Life Balance
- ROA (gives folks with no NSF funding at undergrad/cc institutions a chance to be involved in research)

Mechanisms + Special Proposal Types

- RAPID – for rapid response
- EAGER – for ultra-high-risk research
- Conference – (these are workshops!)



Talk to
a PO!

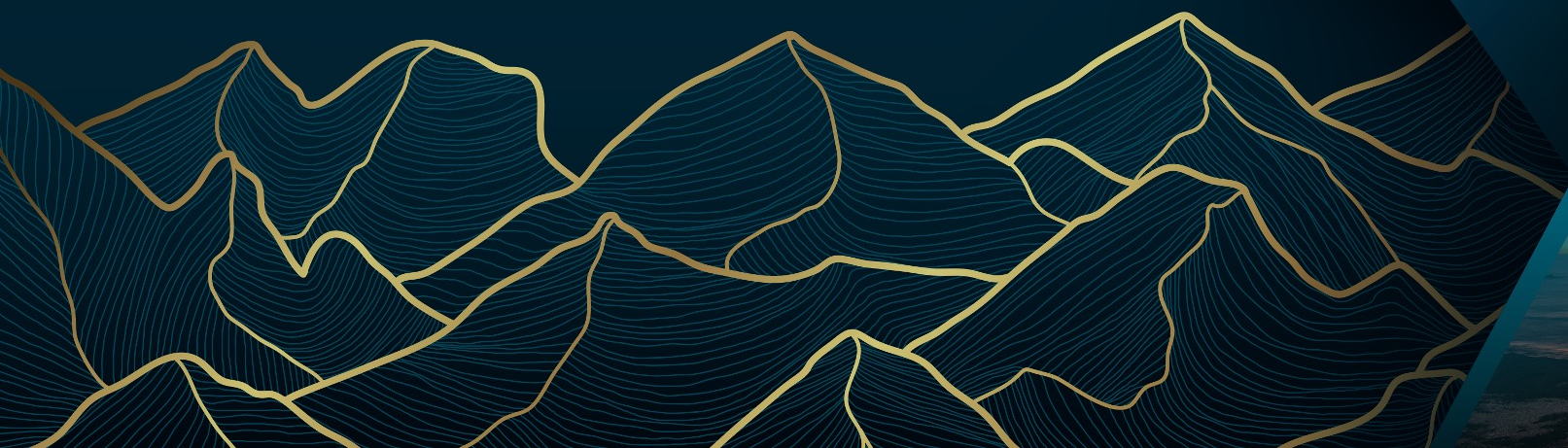


Where does GEO fit at NSF?

How is GEO structured?

Opportunities

Merit Review





NSF Merit Review Criteria



Intellectual Merit

the potential to advance
knowledge



Broader impacts

the potential to benefit society

Broader Impacts: Benefitting Society

Teaching, training,
and learning
(undergrads + grad
students)

Broaden
participation of
underrepresented
groups

Build or enhance
partnerships
(local, international,
or with other
agencies)

Broad
dissemination and
public outreach

Enhance
infrastructure (labs,
equipment, + work
in developing
countries)

Local impacts
(policies @ federal,
state, local level)

Broader Impacts: Benefitting Society

Teaching, training,
and learning

(un

Broaden
participation of

Build or enhance
partnerships

nal,

It is better to do 1 or 2 well than to try covering them all

Not every PI or institution is well suited for the same BI

BI should be integrated and meaningful, not tacked on

di

public outreach

in developing
countries)

state, local level)

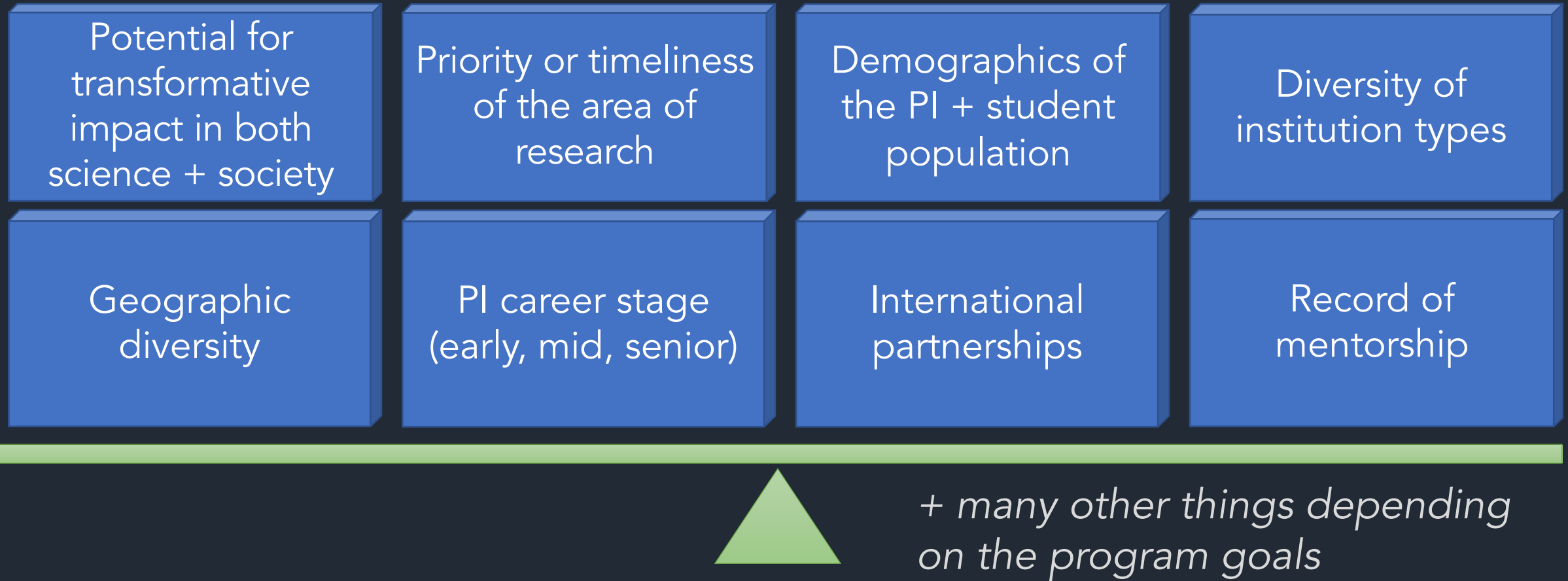
ral,

Some Advice

- Maps/figures/legends/captions should be clearly readable
- Lay out a clear work plan, timeline, and role for each participant
- Develop a realistic and well-justified budget
- Ask for money for your Broader Impact activities
- Make sure at least one person reads your proposal before you submit it
(not just your SRO!)



Decision-making and Portfolio Balance





NSF GEO

GEO in the context of NSF

The many parts of Geosciences

Opportunities

Merit Review



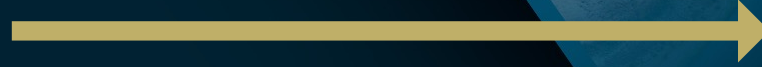


NSF GEO

Get involved
& stay informed

Subscribe to NSF email updates
+ division newsletters

Be a reviewer or panelist



Learn more! [nsf.gov/geo/outreach](https://www.nsf.gov/geo/outreach)

