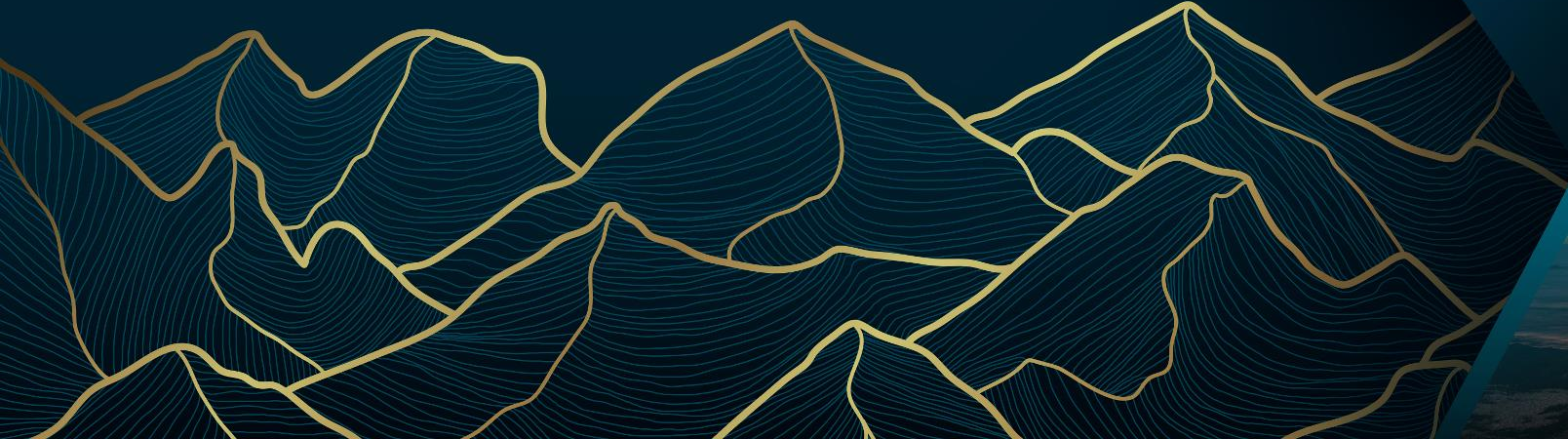




# Directorate for Geosciences [GEO]

**Dr. Jennifer Wade**

*Program Director in  
the Division of Earth Sciences*





Where does GEO fit at NSF?

How is GEO structured?

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

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

Directorate for  
**Education & Human  
Resources (EHR)**

Directorate for  
**Mathematical & Physical  
Sciences (MPS)**

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

## Our mission:

To fund the development of knowledge and technological innovations to:

- Understand and adapt to the changes in our earth, ocean, and atmosphere,
- Accelerate the societal benefits of our investments, and
- Train a diverse and inclusive geosciences workforce.



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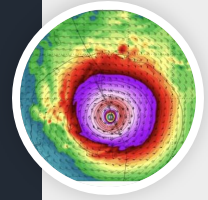
Directorate for  
**Social, Behavioral & Economic  
Sciences (SBE)**



**Earth Sciences (EAR)**



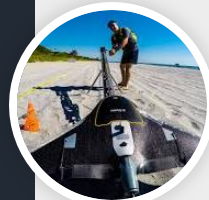
**Ocean Sciences (OCE)**



**Atmospheric and Geospace  
Sciences (AGS)**



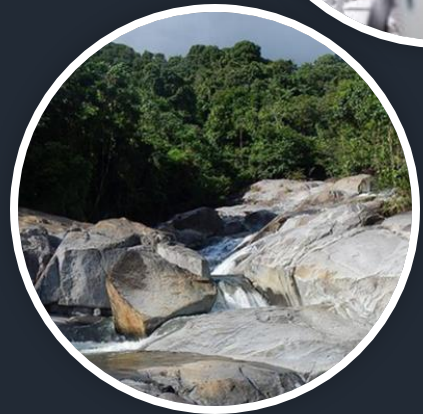
**Polar Programs (OPP)**



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

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

# 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

# Office of Polar Programs (OPP)



## Antarctic Research Programs

Oceans and Atmospheric Sciences

Glaciology

Earth Sciences

Organisms and Ecosystems

Astrophysics and Geospace



## Arctic Research Programs

Natural Sciences

System Science

Observing Network

Social Sciences

Research Coordination and Policy Support



## OPP Research Programs

Polar Cyberinfrastructure

Data & Sample Reuse

Polar Education & Outreach

Postdoctoral Fellows Program

# Office of Polar Programs (OPP)



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

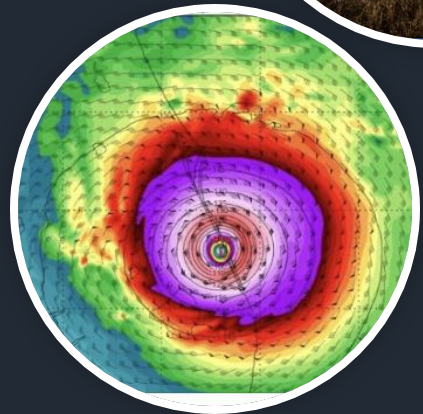


Provides logistical and operational support for work in Antarctica and in remote locations across the Arctic.





# 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

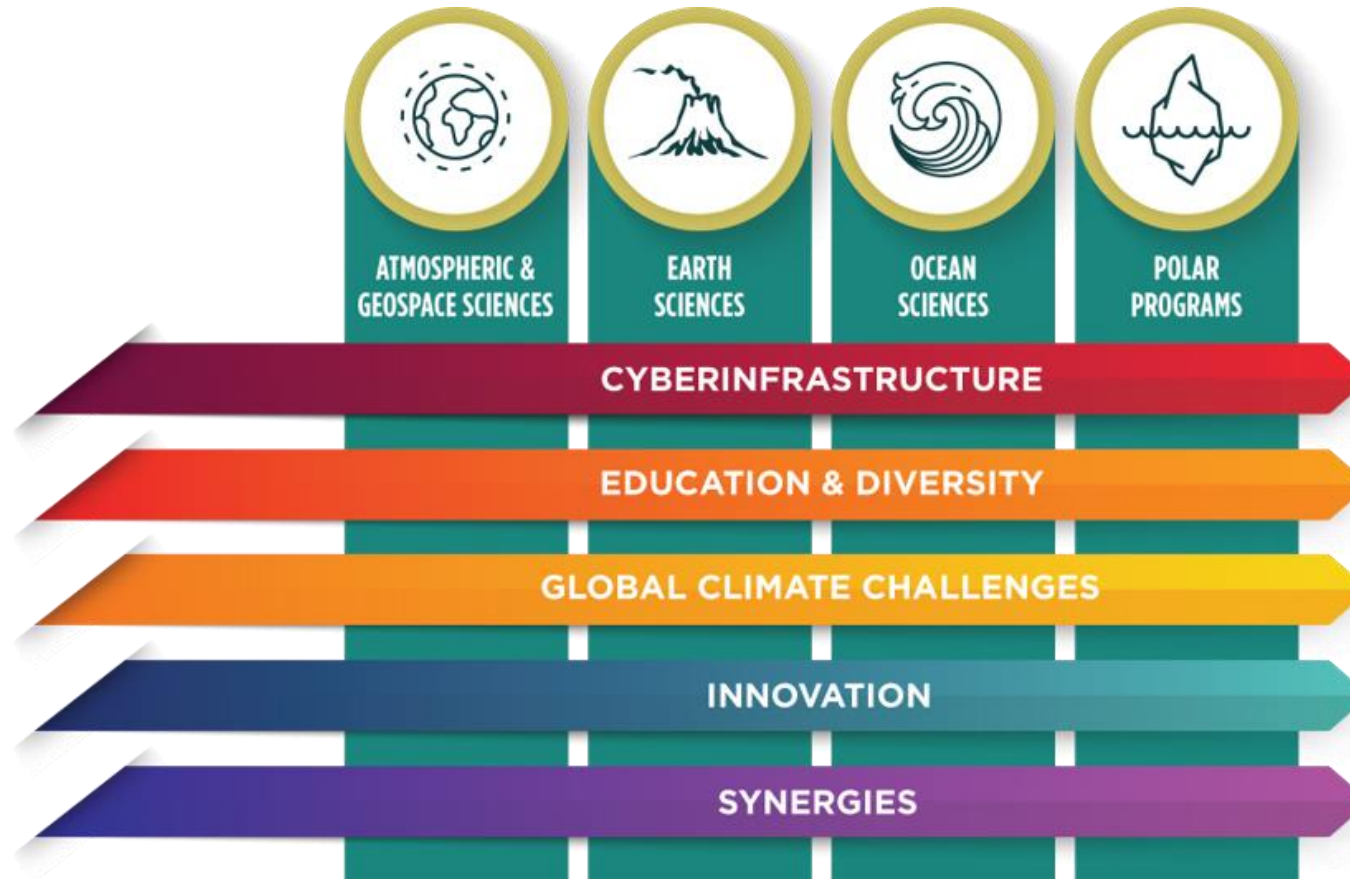
Ship Operations

# Research, Innovation, Synergies, & Education (RISE)



Partnership projects in research *and* education that cut across traditional boundaries within the geosciences.

# Research, Innovation, Synergies, & Education (RISE)



# GEO Facilities

**NCAR**



**Ocean Observatories**



**Research Vessels**



**Polar Facilities**



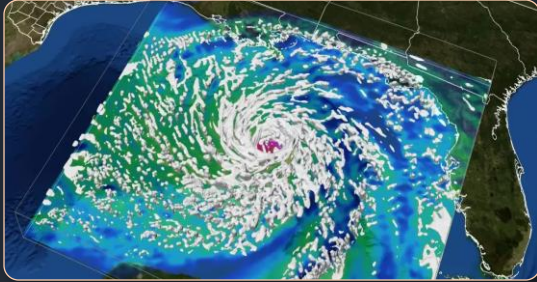
**Seismic and Geodetic**



**Repositories**



# “CHIPS and Science” Empowers Geoscience Innovation



Hazards Risk and  
Resilience Research



Climate Change Research  
+ Education



Critical Minerals and  
Natural Resources



Unmanned Aircraft and  
Marine Technologies/AI/  
Observation Platforms



Clean Water, Precision  
Agriculture, +  
Food/Energy/Water



GEO Education and  
Career Access



# Not sure where you fit?

The screenshot shows the NSF.gov website with the following elements:

- Header: "An official website of the United States government" and "Here's how you know" link.
- Logo: National Science Foundation (NSF).
- Search Bar: "Search NSF".
- Navigation Menu: "Find Funding & Apply" (highlighted with a pink dashed box), "Manage Your Award", "Focus Areas", "News & Events", and "About".
- Main Content Area:
  - Where to Start**: For All Researchers & Educators, For Early-Career Researchers, For Postdoctoral Fellows, For Graduate Students, For Undergraduates, For Entrepreneurs, For Industry.
  - Explore Funding**: Search All Opportunities, By Directorate, By Upcoming Due Date, NSF-wide Initiatives, Search Funded Projects (Awards) (highlighted with a pink solid box).
  - How to Apply**: Preparing Your Proposal, Submitting Your Proposal, How We Make Funding Decisions, Proposal & Award Policies & Procedures Guide (PAPPG).
  - Additional Resources**: Research.gov, Grants.gov, Baam.nsf.gov, Our Directorates & Offices.
- Footer: "Learn more" button, video player with "View video credit" link.



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

nsf.gov



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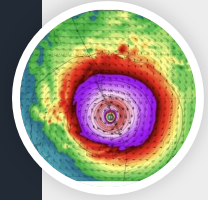
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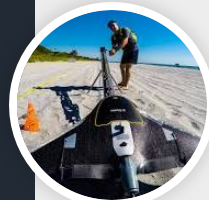
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# Career Trajectory Programs

## Graduate Research Fellowships Program (GRFP)

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

## Postdoctoral Fellowship Programs

- 2 years, details vary by Division/Office



## Faculty Early Career Development Program (CAREER)

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

NSF 22-586

## Mid-Career Advancement Proposals (MCA)

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

NSF 22-603





# Other Opportunities

## 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



# Lead Agency Agreements

Provide a pathway for joint proposals with foreign colleagues

Current active LAOs:

- GB United Kingdom
- CH Switzerland
- TW Taiwan
- IE Ireland
- DE Germany
- EU European Union
- IL Israel



(not the only way to collaborate internationally!)



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# 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

(u

Broaden participation

Build or enhance  
partnerships

al,

**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**

Br  
and public outreach

in developing  
countries)

state, local level)

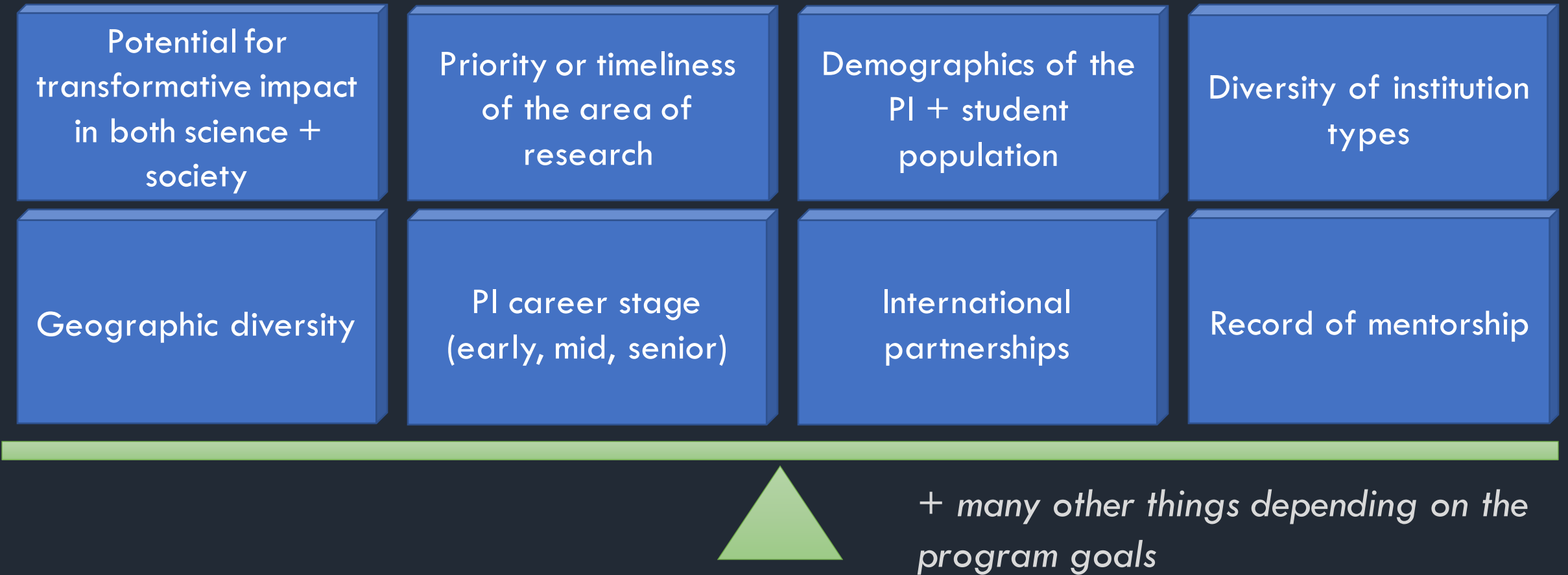
# Some Advice

- 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





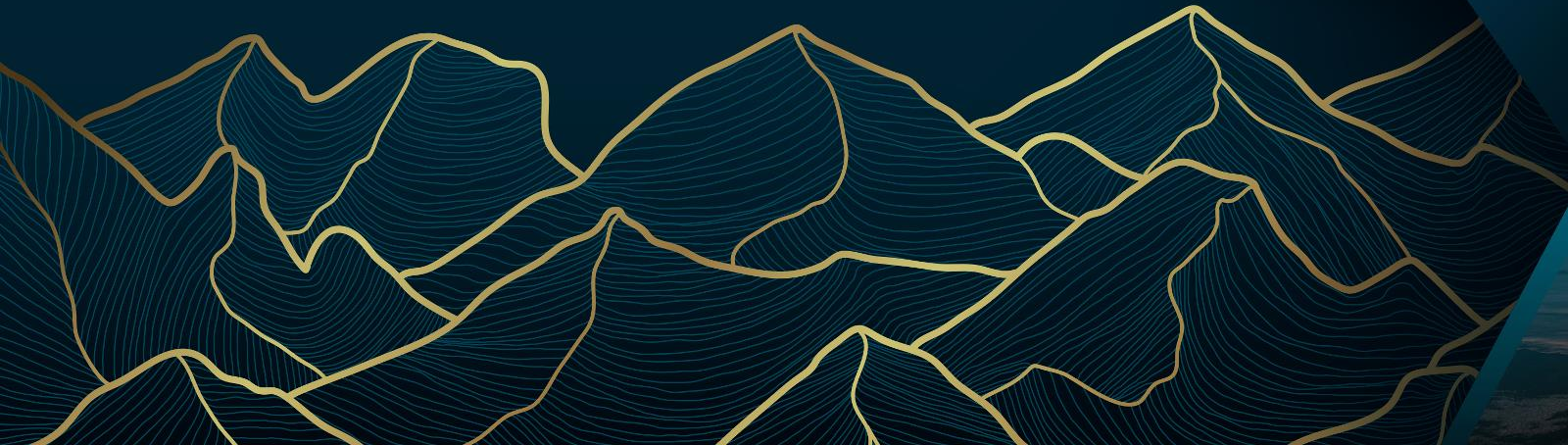
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& stay informed**

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+ division newsletters

Be a reviewer or panelist



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

