



# National Science Foundataion

Alan Liu ([zhualiu@nsf.gov](mailto:zhualiu@nsf.gov))

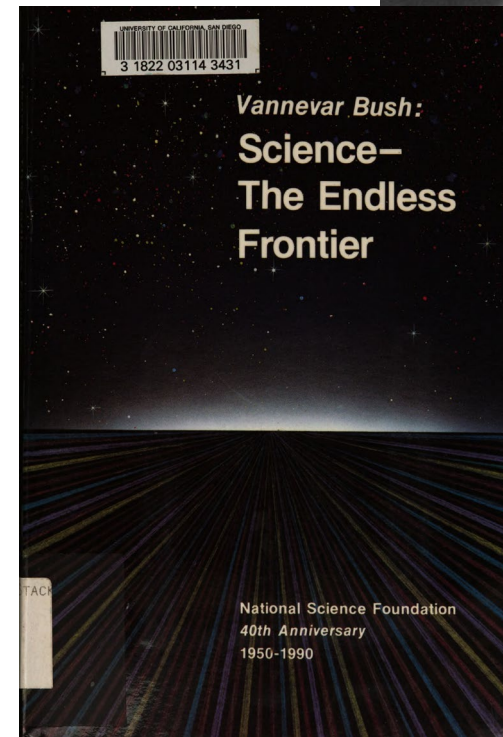
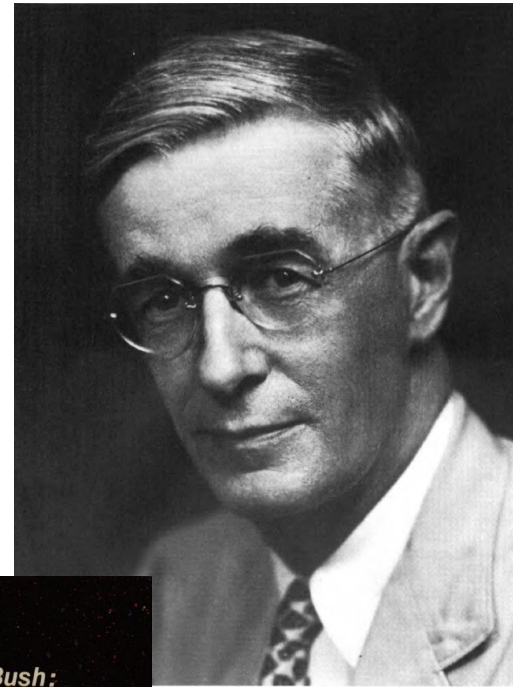
Geospace Section Head

Division of Atmospheric and Geospace Sciences

Directorate for Geosciences

# Why was NSF formed?

- Before World War II, research institutions relied on philanthropic endowments or funding from private companies. "Curiosity-driven" science, a cornerstone of discovery and innovation, was stymied in the process.
- In November 1944, Roosevelt wrote to director of the Office of Scientific Research and Development **Vannevar Bush**, asking how the successful application of scientific knowledge to wartime problems could be carried over into peacetime — and requesting recommendations on a national policy for science.
- In 1945, Bush presented his report, "Science: The Endless Frontier," to President Harry S. Truman. The report envisioned a new agency whose mission would promote the progress of science by supporting basic research at colleges and universities.
- In 1950, following a series of bill revisions, Congress passed and President Truman signed Public Law 81-507, establishing the **National Science Foundation** and the **National Science Board**.



VANNEVAR BUSH



# National Science Foundation Act of 1950

[PUBLIC LAW 507-81ST CONGRESS]  
[CHAPTER 171-2D SESSION]

[S. 247]

AN ACT

To promote the progress of science; to advance the national health, prosperity, and welfare; to secure the national defense; and for other purposes.

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,* That this Act may be cited as the "National Science Foundation Act of 1950".

ESTABLISHMENT OF NATIONAL SCIENCE FOUNDATION





# NSF Organization

- BIO • Directorate for Biological Sciences
- CISE • Directorate for Computer and Information Science and Engineering
- ENG • Directorate for Engineering
- GEO • Directorate for Geosciences
- MPS • Directorate for Mathematical and Physical Sciences
- SBE • Directorate for Social, Behavioral and Economic Sciences
- EDU • Directorate for STEM Education
- TIP • Directorate for Technology, Innovation and Partnerships



# Directorate for Geosciences



## Geosciences (GEO)

Supports research and education on understanding and adapting to the changes in the earth, ocean, atmosphere and polar regions.

- Atmospheric and Geospace Sciences (AGS)
  - Atmospheric Section
  - Geospace Section
    - Aeronomy (CEDAR)
    - Magnetospheric Physics (GEM)
    - Solar Terrestrial (SHINE)
    - Geospace Facilities
    - Space Weather Research
  - NCAR/Facilities Section
- Earth Sciences (EAR)
- Ocean Sciences (OCE)
- Office of Polar Programs (OPP)
- Research, Innovation, Synergies and Education (RISE)



# Proposal & Award Policies & Procedures Guide (PAPPG)

NSF 23-1: Effective for proposals submitted or due on or after January 30, 2023

## Part I: Proposal Preparation and Submission Guidelines

I: Pre-Submission Information

II: Proposal Preparation Instructions

III: NSF Proposal Processing and Review

IV: Non-Award Decisions and Transactions

V: Renewal Proposals





# Merit Review Principles and Criteria

## Principles

- All NSF projects should be of the highest quality and have the potential to advance, if not transform, the frontiers of knowledge.
- NSF projects, in the aggregate, should contribute more broadly to achieving societal goals.
- Meaningful assessment and evaluation of NSF funded projects should be based on appropriate metrics.

## Criteria

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



# What are Broader Impacts



Inclusion



STEM education



Public engagement



Societal well-being



STEM workforce



Partnerships



National security



Economic  
competitiveness



Infrastructure



# Funding Opportunities

- Programs
- Solicitations
- Dear Colleague Letters (DCL)



# Graduate Research Fellowship Program (GRFP)

- The purpose of the NSF Graduate Research Fellowship Program (GRFP) is to ensure the quality, vitality, and diversity of the scientific and engineering workforce of the United States.
- GRFP seeks to broaden participation in science and engineering of underrepresented groups, including women, minorities, persons with disabilities, and veterans.
- The five-year fellowship provides **three years of financial support inclusive of an annual stipend of \$37,000.**

Application Open in July



# NSF 22-639 Solicitation

## AGS Postdoctoral Research Fellowships (AGS-PRF)

- Supports highly qualified early career investigators independent research efforts
- Proposals are submitted to NSF directly by **individuals**, but need to identify a host institution
  - U.S. citizens or permanent residents
  - Graduate student or PhD for no more than 2 years at time of submission
- Provides two years of support: \$100K in year 1 and \$102K in year 2
- Proposals Accepted Anytime





# NSF 23-577 Solicitation

## Faculty Development in geoSpace Science (FDSS)

**Goal:** Integrate topics in geospace science into natural sciences or engineering or related departments at U.S. institutions

- Salary, benefits, and training for newly recruited tenure-track FDSS faculty; up to **five years and \$1,500,000**
- Track to support **minority-serving** institutions and **emerging research** institutions



Contact Dr. Mangala Sharma [MSharma@nsf.gov](mailto:MSharma@nsf.gov)

NSF 22-586 Solicitation  
Faculty Early Career Development Program (CAREER)

NSF Wide

NSF 23-014 Dear Colleague Letter  
Great American Solar Eclipses of 2023 and 2024

AGS, AST

NSF 22-575 Solicitation  
Coupling, Energetics, and Dynamics of Atmospheric  
Regions (CEDAR)

Aeronomy

NSF 23-058 Dear Colleague Letter  
GEO EMpowering BRoader Academic Capacity and  
Education (GEO-EMBRACE)

Geosciences



# Division of Atmospheric and Geospace Sciences

## Geospace Section



**Anne Johansen**  
Division Director



**Alan Liu**  
Geospace  
Section Head



**Chia-Lin Huang**  
Magnetospheric  
Physics (MAG)



**Tai-Yin Huang**  
Data Infrastructure



**Roman Makarevich**  
Geospace Facilities (GF)



**Shikha Raizada**  
Aeronomy (AER)



**Mangala Sharma**  
Space Weather Research  
(SWR)



**Lisa Winter**  
Solar-Terrestrial  
Research (STR)

