

An Introduction to NSF Funding Opportunities for Rubin Science

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National Science
Foundation



Overview

- NSF Basics
- Funding Opportunities (a sampling)
- A Few Tips
- List of AST Contacts



NSF Basics

- NSF Structure (NSF.gov)
 - Office of the Director
 - Directorates
 - Mathematical and Physical Sciences (MPS) [nsf.gov/mps](https://www.nsf.gov/mps)
 - Division of Astronomical Sciences (AST) [nsf.gov/ast](https://www.nsf.gov/ast)
 - Division of Physics (PHY) [nsf.gov/phy](https://www.nsf.gov/phy)
 - Division of Mathematical Sciences (DMS) [nsf.gov/dms](https://www.nsf.gov/dms)
 - Computer and Information Science and Engineering (CISE)
 - Geosciences (GEO)
 - et cetera



NSF Basics

- Two Merit Review criteria are considered when evaluating **ALL** NSF proposals:
 1. Intellectual Merit: the potential to advance knowledge
 2. Broader Impacts: the potential to benefit society and contribute to the achievement of specific, desired societal outcomes
- Some programs may have additional review criteria



Funding Opportunities: Early Career

- NSF-wide:
 - **CAREER** [July 24, 2024]
 - With an education component; for tenure-track or equivalent
 - Reviewed by AST, PHY, etc.
 - **RUI/ROA**
 - For faculty at PUI
- MPS:
 - **MPS-Ascend** [deadline Oct. 18]
 - Postdoctoral fellowships for broadening participation
 - **LEAPS-MPS** [deadline Jan. 25]
 - Launching Early-Career Academic Pathways in the Mathematical and Physical Sciences
- AST:
 - **Astronomy and Astrophysics Postdoctoral Fellowship** (AAPF) [deadline Oct. 16]
 - Prize fellowships with an education component
 - **Astronomy and Astrophysics Grant** (AAG) [deadline Nov. 15]
 - **Simonyi/NSF Scholarships** (for Rubin science)



Funding Opportunities: CAREER

This program is a Foundation-wide activity that offers the National Science Foundation's most prestigious awards for **faculty members beginning their independent careers.** The intent of the program is to provide stable support at a sufficient level and duration to enable awardees to develop careers not only as outstanding researchers but also as educators demonstrating commitment to teaching, learning, and dissemination of knowledge.

- Untenured but on tenure-track (at least at 50% level) or equivalent
- Never received a CAREER award
- Hold a PhD in a field supported by NSF



Funding Opportunities: RUI/ROA

Research in Undergraduate Institutions (RUI) and Research Opportunity Awards (ROA)

Support research by **faculty members at predominantly undergraduate institutions (PUIs)**. RUI proposals support PUI faculty in research that engages them in their professional field(s), builds capacity for research at their home institution, and supports the integration of research and undergraduate education. ROAs similarly support PUI faculty research, but these awards typically allow faculty to work as visiting scientists at research-intensive organizations where they collaborate with other NSF-supported investigators.

< 20 PhD a year



Funding Opportunities: MPS-ASCEND

Support postdoctoral Fellows who will broaden the participation of members of groups that are **historically excluded and currently underrepresented** in MPS fields in the U.S., defined in this solicitation as Blacks or African Americans, Hispanics, Latinos, Indigenous and Native Americans, Alaska Natives, Native Hawaiians and other Native Pacific Islanders, as future leaders in MPS fields.



Funding Opportunities: LEAPS-MPS

Help launch the careers of pre-tenure faculty in Mathematical and Physical Sciences (MPS) fields at institutions that do not traditionally receive significant amounts of NSF-MPS funding, such as some **minority-serving institutions (MSIs), predominantly undergraduate institutions (PUIs), and Carnegie Research 2 (R2)** universities. LEAPS-MPS has the additional goal of achieving excellence through diversity and aims to broaden participation to include members from groups **historically excluded and currently underrepresented** in the Mathematical and Physical Sciences, including Blacks and African Americans, Hispanics, Latinos, Native Americans, Alaska Natives, Native Hawaiians, and other Native Pacific Islanders.



Funding Opportunities: AST

- Astronomy and Astrophysics Research Grants (AAG)
 - AST's main funding program
 - Covers all areas of astronomy and astrophysics
- Astronomy and Astrophysics Postdoctoral Fellowships (AAPF)
 - Highly qualified, recent doctoral scientists
 - Integrated program of independent research and education
 - Not tied to a specific institution



Funding Opportunities: Simonyi-NSF Scholars

- Sponsored by a gift from Charles Simonyi with matching funds by AST
- About 8 awards a year
- Available to existing programs: CAREER, AAPF, AAG
- Focus on Rubin science, including theoretical work and simulations
- Early-career: < 10 years from PhD or < 5 from tenure



Funding Opportunities: Cross-cutting

- Examples:

- Computational and Data-Enabled Science and Engineering (CDS&E)
 - Enables some co-funding or leveraged funding across MPS
 - Meta-program accessed through regular grants programs
- AI Institutes with astronomy/astrophysics themes (~\$20 M)
 - Supports the development of new AI Institutes that focus on one of the following themes: astronomical sciences, materials research and new methods for strengthening AI.
 - Will have FAQ and Webinar led by CISE.
 - AST contact: **Andreas Berlind** (**aberlind@nsf.gov**)



A Few Tips

- Talk to your program officer (before you propose)
 - Can start with Hans Krimm (AST IIP coordinator)
- Talk to your program officer (after award/decline)
- Consider adding Rubin and/or LSST to the title



Contacts

- Andreas Berlind: aberlind@nsf.gov, 703-292-5387
 - AI Institutes (Solicitation and FAQ out, and Webinar coming soon!)
 - Cross-cutting (and AST) computational programs
 - Lead for Extragalactic Astronomy and Cosmology (EXC)
- Hans Krimm: hkrimm@nsf.gov, 703-292-2761
 - Individual Investigator Programs (IIP) Coordinator
- Edward Ajhar: eajhar@nsf.gov, 703-292-7456
 - Program Director for Rubin Observatory
- Luca Rizzi: lrizzi@nsf.gov, 703-292-6422
 - Program Director (US-ELT, Simonyi-NSF Scholarships)



Questions?



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