Opportunities for graduate students & postdocs at the National Science Foundation

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Several federal departments & independent agencies fund scientific research
NSF Mission: Encourage & develop … the promotion of *basic* research and education in the math, physical, medical, biological, engineering and other sciences

Not an emphasis on
- applied research
- human health
- agricultural productivity
- conservation & management

Although basic research impacts these areas
NSF Champions Research and Education Across All STEM Fields

- Biological Sciences
- Engineering
- Mathematical & Physical Sciences
- Computer & Information Science & Engineering
- Geosciences

- Integrative Activities
- Education & Human Resources
- Social, Behavioral & Economic Sciences
- International Science and Engineering

7 - Science Directorates
NSF and opportunities for different career stages

- Undergraduate students
  - Research Experiences for Undergraduates (REUs)
- Graduate students
  - Graduate Research Fellowships (GRFPs)
- Postdoctoral students
  - Post-doc fellowships
    - Biology, Earth Sciences, Math, Engineering, Astronomy
- Academic faculty
  - Core & special Programs, opportunities to broaden participation

STEM Careers
- Industry
- Government
- Science related fields
Research Experience for Undergraduates (REU)
Summer programs for undergraduates interested in conducting independent research in the science, technology, engineering and math (STEM) fields.

Who is eligible: US citizens, nationals and permanent residents

Undergraduates receive: Stipend of ~$5,500 for 10-week program, travel to and from program site, meals and lodging

Deadlines: January- March (apply directly to participating institutions)

https://www.nsf.gov/crssprgm/reu/reu_search.jsp
The NSF Graduate Research Fellowship Program:
Supports students in STEM & Engineering disciplines who are pursuing research-based master’s or doctoral degrees at US institutions

**Funding Amount:** $138,000 over 3 years

- A stipend of $34,000 and
- A cost-of-education allowance of $12,000

**Deadlines:** Oct 22-26th (depending on discipline)

https://www.nsfgrfp.org/
Eligibility

- U.S. citizens and permanent residents
- Seeking Ms or PhDs

**Level 1:** Seniors/baccalaureates: no graduate study

**Level 2:** First-year graduate students

**Level 3:** Second-year graduate students

≤ 12 months of graduate study

**Level 4:** >12 months graduate study (no doctoral degree)

with an interruption in graduate study of 2+ years
GRFP Fields of Study

- Chemistry
- Computer & Information Science/Engineering
- Engineering
- Geosciences
- Life Sciences
- Materials Research
- Mathematical Sciences
- Physics and Astronomy
- Psychology
- Social Sciences
- STEM Education
GRFP Application

1) Personal Statement, Relevant Background and Future Goals (3 pages)

2) Graduate Research Statement (2 pages)

3) Transcripts (uploaded electronically)

4) Three letters of reference

DEADLINES: October 2019
Refer to NSF Solicitation
NSF and opportunities for different career stages

Undergraduate students
Graduate students
Postdoctoral students
Academic faculty

Graduate Research Fellowships (GRFPs)

INTERN
Non-Academic Experiences

STEM Careers
- Industry
- Government
- Science related fields
Graduate Research Internship Program (GRIP) available to GRFP fellows only

Host Federal Agencies:

- Smithsonian Institution
- Office of Naval Research
- Department of Homeland Security
- Federal Bureau of Investigation
- Environmental Protection Agency
- National Oceanic & Atmospheric Administration
- U.S. Census Bureau
- U.S. Dept. of Agriculture
- U.S. Geological Survey

$5,000
Internships with Federal Agencies
-available to GRFP fellows only

INTERN

Non-Academic Experiences
-available as a supplement to active NSF research proposals in BIO, CISE/OAC, HER, ENG, GEO, MPS, SBE, OIA/EPSCOR
Non-Academic Internships (INTERN)

Non-Academic Settings:

- Industry
- Start-ups
- Government Agencies, National Laboratories
- Policy think-tanks
- Non-profit organizations

Up to $50,000 per student for 6 month internships
Opportunities across several Directorates: Biology, Earth Sciences, Engineering, Mathematics etc.

These programs are focused on the **training** of postdocs

- Support independent research
- Evidence of an effective mentoring plan

Some programs have research themes

- **Geosciences**: Issues related to scale (spatial, temporal, numerical)
- **Biology**: Broadening participation, Museum Research Using Biological Collections, and National Plant Genome Initiative

Fellowship amounts vary:

- **Geosciences**: $62K per year, $25K allowance
- **Biology**: $54K per year, $15K allowance

**Deadline**: **Geosciences**: September  
**Biology**: November
Post-doctoral Funding from the NSF

- Atmospheric and Geospace Sciences Postdoctoral Research Fellowships
- Centers of Research Excellence in Science and Technology (CREST) and HBCU Research Infrastructure for Science and Engineering (RISE)
- Documenting Endangered Languages
- GeoPRISMS Program
- Law & Social Sciences
- SBE Postdoctoral Research Fellowships
- Mathematical Sciences Postdoctoral Research Fellowships
- NSF Astronomy and Astrophysics Postdoctoral Fellowships
- NSF Earth Sciences Postdoctoral Fellowships
- ASEE/NSF Corporate Postdoctoral Fellowship for Engineers
- Intelligence Community (IC) Postdoctoral Research Fellowship Program
Start with the big picture (conceptual framework), the fundamental question/issue.

Address how your work advances theory and understanding in your field (generalizability).

• The system, place and organisms just reflect an opportunity to address the questions you pose and hypotheses you plan to test.

• The importance for human welfare, management, agriculture etc. is a broader impact.
**Intellectual merit**

Potential to advance a field of science

**Broader impacts**

Potential to benefit society

*They should be*

- be credible & thoughtful
  
  (previous experiences, letters of collaboration)

- match the scope of the project

- don’t have to be novel, just effective

- Assessments can be important
Intellectual merit
Potential to advance a field of science

Broader impacts
Potential to benefit society

Develop and effective mentoring plan
- your success and the mentor’s commitment are important
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