Research Opportunities, Merit Review Process, Avoiding Common Mistakes and Finding Employment Opportunities for Students

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Overview

- NSF Overview
- BIO Overview
- Finding research opportunities
- Merit review process
- Common mistakes
- Employment opportunities for students

NSF Overview

- Independent federal agency in Arlington, VA
- Supports basic research and education via grants
- Discipline-based structure
- Cross-disciplinary programs
- 1/3 "rotators", 1/3 permanent POs and 1/3 Administration and Business Operations
- Annual budget ~$7,5B (FY16) with only 6% of overhead, the rest is award budget
- >55,000 proposals, ~12,000 new awards per year, supports ~250,000 scientists, educators and students.
Division of Environmental Biology (DEB)

Supports fundamental research on populations, species, communities, and ecosystems.

4 core programs:
- Population & Community Ecology
- Ecosystem Science
- Evolutionary Processes
  - Evolutionary Genetics
  - Evolutionary Ecology
- Systematics & Biodiversity Science
  - Phylogenetic Systematics
  - Biodiversity Discovery & Analysis

Finding your way www.nsf.gov
Finding Funding Opportunities

Solicitations

For Undergrads RUI Program

- Generally, no direct scholarships
- Research in Undergraduate Institutions (RUI) Program
  - Supported Foundation-wide
  - Supplements to individual faculty (student initiative can pay off here!)
For Undergrads
RUI Program

Typical program: 10 weeks in summer; 10 students
✓ Expectation that students will be actively involved in the research project
✓ “RUI impact statement” and “RUI certification” must accompany proposal
✓ Submission deadlines: preliminary proposal in January and full proposal (if invited) in August.

For PhD Students
NSF Doctoral Dissertation Improvement Grants (DDIG)

Small grants (~$13K (direct costs) for up to 2 yrs) to provide support for costs related to dissertation:
• Field work, data collection, payment to subjects, survey expenses, software, microfilm, reproduction of tapes and written materials, data transcribing
• Travel to specialized facilities and field research sites
• Partial living expenses for conducting research away from the student's university
• Dissertation advisor is the grant PI
• October deadline
• All DEB programs and one IOS program

Have questions? Use Contacts.
NSF Graduate Research Fellowship Program (GRFP)

https://www.nsfgrfp.org/

Three Year Award – $126,000
- Three years of support
- $30,000 Stipend per year
- $12,000 per year Educational allowance to institution
- International research opportunities
- Supercomputer access

NSF Graduate Research Fellowship Program (GRFP)

NSF-Supported Disciplines

- Chemistry
- Computer & Information Science/Engineering
- Engineering
- Geosciences
- Life Sciences
- Mathematical Sciences
- Physics and Astronomy
- Psychology
- Social Sciences

NSF’s merit review process

NSF Proposal-Review Process and Timeline
Types of Merit Review

- **Ad hoc reviews** -- requests for review of a single proposal by a number (3 to 6 or so) of experts (often specialists) in the topic/methods/locale of the research.
- **Advisory panel review** -- evaluation of multiple proposals by a number (6 to 30 or so) of individuals with varying degrees of expertise -- often more generalist than specialist. (2 to 4 panelists may write reviews before the panel meeting.)
- **Ad hoc + panel review** -- evaluation of multiple proposals with panels evaluating both ad hoc and panelist reviews.
- **Program officer review (without external review)** -- used only in a very limited set of cases.

Merit Review Criteria

**Guiding 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.

NSF Merit Review Criteria

NSF asks reviewers to comment on two major criteria:

- Intellectual merit
- Broader impacts

Be aware that NSF merit review criteria recently have been redefined.

Meaningful assessment and evaluation of NSF funded projects should be based on appropriate metrics, keeping in mind the likely correlation between the effect of broader impacts and the resources provided to implement project.
Merit Review Criteria cont.

- **Intellectual Merit**: The Intellectual Merit criterion encompasses the potential to advance knowledge.
- **Broader Impacts**: The Broader Impacts criterion encompasses the potential to benefit society and contribute to the achievement of specific, desired societal outcomes.
- Both should be assessed in the process.

Examples of Broader Impacts

- Full participation of women, persons with disabilities, and underrepresented minorities in science, technology, engineering, and mathematics (STEM)
- Development of a diverse, globally competitive STEM workforce
- Improved STEM education and educator development at any level
- Increased public scientific literacy and public engagement with science and technology
- Improved well-being of individuals in society

Examples of Broader Impacts Cont.

- Increased partnerships among academia, industry, and others
- Improved national security
- Increased economic competitiveness of the United States
- Enhanced infrastructure for research and education
- Applied benefits of the research itself.

Annual Schedule of DEB Solicitations
Important Deadlines in DEB

- Doctoral Dissertation Improvement grant in DEB: (DDIG): Second Thursday in October
- CNH: November 15, 2016. Third Tuesday in November, Annually Thereafter
- DEB core solicitations:
  - Core preliminary proposals: Jan 25, 2016
  - RCN: first Monday in August
  - OPUS: first Monday in August
  - CAREER: late July, by Division

Important Deadlines in DEB cont.

- Ecology & Evolution of Infectious Diseases: Third Wednesday in November
- Genealogy of Life (GoLife): Fourth Wednesday in March
- No deadlines: RAPID, EAGER, workshops
  - New GPG – will guide proposals submitted after January 1, 2016
    [always use the latest!]
  - GPG provides general guidelines, the solicitation is more specific and should be your primary guide

Avoiding Common Mistakes –DEB

Submit more than 2 pre-proposals - Limit of 2 pre-proposal submissions/year/PI for DEB. Anything after that = RWR (returned without review)

Proposal submitted after the deadline – RWR

Proposal was submitted to the wrong solicitation

Project Summary: Must be present, less than one page, and contain 3 separate sections (Overview, Intellectual Merit, and Broader Impacts), if not =RWR

Project Description: Proposal contains egregious use of small or condensed text; RWR

No Broader Impacts or Results from Prior NSF Support, RWR.
Avoiding Common Mistakes –DEB cont.

**Budget Justification:** Text does not adequately justify resources requested

**References:** Must be present and consist of only references, and should not include project narrative text

Core proposal did not arise from an invited pre-proposal and does not fit one of the other targeted solicitations

**Biosketches (CV):** One biosketch must be present for every person on the cover page, should not be more than 2 pages and should not contain an "expertise related to project" section or any narrative text

**Supplementary Documents:** Must contain no unauthorized appendices.

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**Finding Employment Opportunities for Students**

![Image](https://via.placeholder.com/150)

**Pathways Internship**

for current students and recent graduates

Under President Obama’s leadership, the Federal Government has taken steps to help students and recent graduates join the Federal service. New opportunities will appear on USAJOBS as agencies post them.

[https://www.usajobs.gov/StudentsAndGrads](https://www.usajobs.gov/StudentsAndGrads)

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**Presidential Management Fellows (PMF) Program**

- Apply during final year of graduate program and can apply within two years after graduation
- Competitive examination and interview. Prepare, prepare, prepare!
- Hired for 2-years into a federal office
- Mainly for MS and MA students pursuing careers in government service with a management/analytical track
- NIH, NOAA, NSF, USDA, EPA, CDC, Dept. of Interior, State Dept., Dept. of Education, DoD, DoE, etc.

![](https://via.placeholder.com/150)
Government Job Search Tips

- Look at Federal, State, and Local
- Often looking for specific qualities and experiences—analytical skills in demand
- Expect a Long Response Time
- Wide variety of jobs, not just in specialty areas of organization
- Take on Internships for experience

Questions?