

# National Science Foundation

## Graduate Research Fellowship Program

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# Today's Speaker

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# NSF GRFP Mission

The GRFP program goals are:

- 1) to select, recognize, and financially support, early in their careers, individuals with the demonstrated potential to be high achieving scientists and engineers
- 2) to broaden participation in science and engineering of underrepresented groups, including women, minorities, persons with disabilities, and veterans

# Eligibility

## **As an undergraduate student:**

Individuals may apply as an undergraduate senior as well as post-baccalaureate, before beginning graduate training.

## **As a graduate student:**

Graduate students are limited to only one application to the GRFP, submitted either in the first year or in the second year of graduate school.

Applications that are not reviewed by GRFP (i.e., are withdrawn before review or are returned without review) do not count toward the one-application limit for graduate students, submitted either in their first year or in their second year of graduate school.

Graduate students may withdraw a submitted GRFP application without it being counted toward the one-application limit if they do so by November 15 of the application year.

# Eligibility

## **As an individual returning to graduate education:**

Applicants who have completed more than twelve months of graduate study or have earned a previous graduate or professional degree are eligible only if they have had an interruption in graduate study of at least two consecutive years prior to November 1 of the year the application is submitted. To be eligible, applicants must have completed no additional graduate study by August 1 of that year. Applicants must address the reasons for the interruption in graduate study in the Personal, Relevant Background and Future Goals Statement.

# Supported Disciplines

- Chemistry
- Computer & Information Sciences and Engineering
- Engineering
- Geosciences
- Life Sciences
- Materials Research
- Mathematical Sciences
- Physics & Astronomy
- Psychology
- Social Sciences
- STEM Education and Learning Research

*Not sure if your research is supported? Please consult the list of panels and sub-fields on the back of the handout.*

# Disciplines that are Not Supported

- Practice-oriented professional degree programs (medical, legal, dental, law, public health, business)
- Joint Science-Professional Programs (MD/PhD, JD/PhD, etc.)
- Education (except for research-focused science education Ph.D. programs)
- Clinical areas of study, including: counseling; clinical psychology; social work; patient-oriented research; epidemiological and behavioral studies; outcomes research; health services research; health policy; pharmacologic, non-pharmacologic, and behavioral interventions for disease prevention, prophylaxis, diagnosis, or therapy; and community and other population-based intervention trials
- Bioengineering and biomedical engineering students should consult the solicitation to see if they are eligible. See section “IV. Eligibility Information” and read part 3, “Field of Study” for a detailed explanation of the types of research they will support.

# Level of Support

- Three years of support, five year window for use
- \$34,000 Stipend per year
- \$12,000 Cost-of-education allowance per year
- Awarded to individual, not institution
- The support “follows” the student
- International research and professional development opportunities
- Internship opportunities
- Family and medical leave with possible research continuance
- Assistance and equipment support for disabilities
- Access to XSEDE supercomputer
- Does require progress to degree reports

# Timeline

- Application available online now
- Deadlines varies by field, please see the GRFP solicitation for details, but usually late October
- **Warning:** Do not procrastinate because FastLane, the proposal submission website, tends to crash on due dates
- Awards announced late March to early April
- Best time to start preparing: NOW

# Application Materials

\*\* Download the current solicitation, *NSF 16-588* \*\*

- Personal Information
- Education, Work, and Other Experience
- Electronic Academic Transcripts
- Proposed Field of Study
- Proposed Graduate Study and Graduate School Information
- Personal, Relevant Background, and Future Goals Statement (3 pages)
- Graduate Research Plan Statement (2 pages)
- Three Reference Letters (2 page limit for each letter)

# Field of Study

See the backside of the handout for list of fields of study.

Choose wisely the field in which a panel will review your proposal:

“Panels will review applications from **broad areas** of related disciplines. Applicants are reviewed in panels based on their selection of a primary Field of Study (see Fields of Study in Appendix). **Selection of a primary Field of Study determines the application deadline and the panel that will review the application.** Thus, applicants are advised to select the Field of Study in the FastLane GRFP Application module that is most closely aligned with the proposed graduate program of study and research plan. Applicants who select “other” must choose a primary Field of Study on the list for placement in a review panel.”

# Criteria for Applications

“When evaluating NSF proposals, reviewers will be asked to consider what the proposers want to do, why they want to do it, how they plan to do it, how they will know if they succeed, and what benefits could accrue if the project is successful. These issues apply both to the technical aspects of the proposal and the way in which the project may make broader contributions. To that end, reviewers will be asked to evaluate all proposals against two 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.”

**“It is recommended that applicants include headings for Intellectual Merit and Broader Impacts in their statements.”**

# Criteria for Applications

“The following elements should be considered in the review **for both criteria**:

1. What is the potential for the proposed activity to:
  - a. Advance knowledge and understanding within its own field or across different fields (Intellectual Merit); and
  - b. Benefit society or advance desired societal outcomes (Broader Impacts)?
2. To what extent do the proposed activities suggest and explore creative, original, or potentially transformative concepts?
3. Is the plan for carrying out the proposed activities well-reasoned, well-organized, and based on a sound rationale? Does the plan incorporate a mechanism to assess success?
4. How well qualified is the individual, team, or organization to conduct the proposed activities?
5. Are there adequate resources available to the PI (either at the home organization or through collaborations) to carry out the proposed activities?”

# Intellectual Merit

“Reviewers evaluating applications submitted to the Graduate Research Fellowship Program may consider the following with respect to the **Intellectual Merit Criterion**:

the potential of the applicant to advance knowledge based on a holistic analysis of the complete application, including the Personal, Relevant Background, and Future Goals Statement, Graduate Research Plan Statement, strength of the academic record, description of previous research experience or publication/presentations, and references.

Holistic review is a flexible, individualized way of assessing an applicant's interests and competencies by which balanced consideration is given to experiences, attributes, and academic achievements and, when considered in combination, how the applicant has **demonstrated potential** for significant research achievements in STEM and STEM education.”

# Broader Impacts

“Reviewers may consider the following with respect to the **Broader Impacts Criterion**:

the potential of the applicant to benefit society and contribute to the achievement of specific, desired societal outcomes based on a holistic analysis of the complete application, including by personal experiences, professional experiences, educational experiences and future plans.”

# More on Broader Impacts

“Broader impacts may be accomplished through the research itself, through the activities that are directly related to specific research projects, or through activities that are supported by, but are complementary to, the project. NSF values the advancement of scientific knowledge and activities that contribute to achievement of societally relevant outcomes. Such outcomes include, but are not limited to: full participation of women, persons with disabilities, and underrepresented minorities in science, technology, engineering, and mathematics (STEM); 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; development of a diverse, globally competitive STEM workforce; increased partnerships between academia, industry, and others; improved national security; increased economic competitiveness of the US; and enhanced infrastructure for research and education.”

# Personal, Relevant Background, & Future Goals Statement

- Start with your undergraduate experience, not much before
- Be introspective and think over “meaning of life” experiences
- Why? Not what you have done, but why you did it
- Why? Not what preparation for graduate school you achieved, but why it prepared you
- Why? Not how graduate school prepares you for a career, but why
- Don’t ignore poor past performance, explain it and what you learned from it
- Future: “With more free time and resources made possible by this fellowship, I can accomplish...”

# Research Plan Statement

- Propose a 3-year project, not something that takes 1 year or 10 years
- Discuss past research outside of class, avoid in-class research unless that is all you have experienced
- Why? Focus is not on what research you did, but why it is important
- Show that you understand the research results, their importance, their intellectual context and relationships
- Do not ignore what research you have just begun
- Do not be afraid to discuss a literature review's influence on you
- Explicitly state hypotheses, alternative hypotheses, predictions, data analysis methods, limitations, etc.
- How do you know when you've achieved the goal of your research?

# Letters of Reference

- Contact referees now
- Research advisors
- Collaborator of advisor (if working with him/her)
- Coordinators of STEM outreach projects
- Current or last semester professors
  - No GTAs or postdocs
- Request in person or write a full formal letter/email with salutation and closing. Specify why you are applying, why you would like this person to write a letter, and do provide him/her with a copy of your application essays, the NSF guidelines and website for referees, and any other information he/she may need
- **Include the deadline and guidelines for letters found in the NSF GRFP solicitation and website**

# A Whole Proposal

Step back and consider your entire application – do the parts relate to each other and combine to express a “holistic plan”?

“GRFP supports individuals proposing a comprehensive holistic plan for graduate education that takes into account individual interests and competencies. A holistic plan describes the experiences, attributes, and academic achievements that, when considered in combination, show how the applicant has demonstrated potential for significant research achievements in STEM or in STEM education.”

# Successful Applicants...

- Start the process early
- Read the solicitation and application guides very carefully
- Demonstrate review criteria in application materials
- Be clear, concise, confident, & truthful
- Draw on accomplishments more than promises (“demonstrated potential”)
- Write multiple drafts and show them to others for review
- Check for spelling, grammar, formatting
- Submit application to the appropriate panel
- Verify materials were uploaded correctly to the appropriate place
- Press the “Submit” button and meet the deadline
- Regularly check application status

# Questions about the NSF GRFP?

## Today's Panelist

**Jennifer Gleason**, Associate Professor of Ecology & Evolutionary Biology