NSF GRADUATE RESEARCH FELLOWSHIP: BROADER IMPACTS

Anthea Letsou, PhD
Dept. of Human Genetics
University of Utah
aletsou@genetics.utah.edu

The research grant application process.

BUT… ITS NEVER TOO EARLY TO:

- Establish an independent record of funding
- Research flexibility
- Build new professional networks
- Oftentimes there are forms of recognition even if you don't get the money

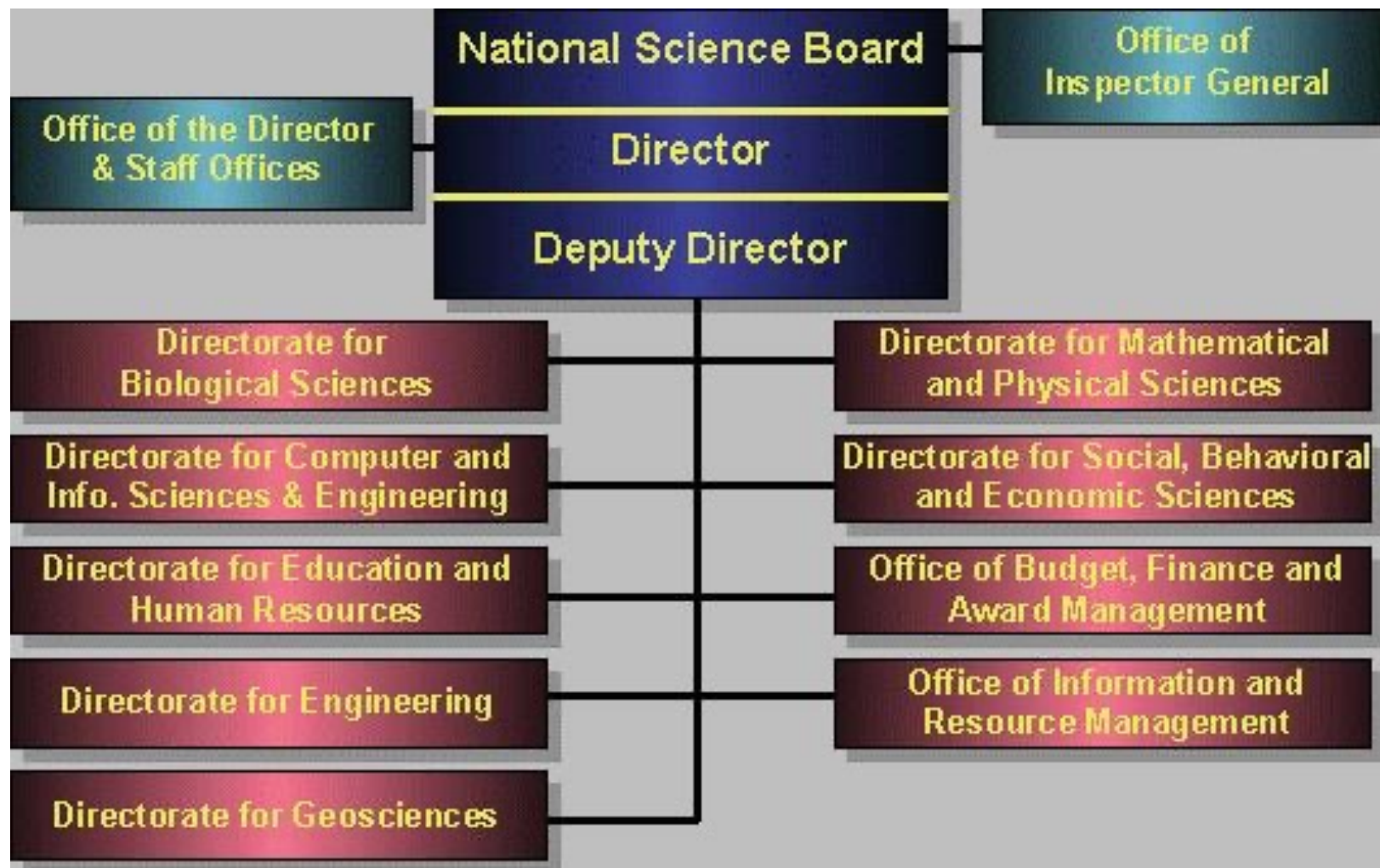# NSF Graduate Research Fellowship Program

NSF 18-573
Current solicitation published July 27th 2018
Spans award years 2019 thru 2021

https://www.nsf.gov/publications/pub_summ.jsp?ods_key=nsf18573

National Science Foundation

GFRP Solicitation 18-573

National Science Foundation

Directorate for Biological Sciences

Directorate for Computer & Information Science & Engineering

Directorate for Education & Human Resources
Division of Graduate Education

Directorate for Engineering

Directorate for Geosciences

Directorate for Mathematical & Physical Sciences

Directorate for Social, Behavioral & Economic Sciences

Office of Integrative Activities

Office of International Science and Engineering

GRFP Key Elements

Five Year Award – $138,000

- Three years of support
    - $34,000 Stipend per year
    - $12,000 Educational allowance to institution
- Professional Development Opportunities:

    GROW: International Research

    GRIP: Internships

- Supercomputer access: XSEDE
- Career Life Balance (family leave)

GRFP Unique Features

- Awarded to individual
- **Flexible:** Choice of project, advisor & program
- **Unrestrictive:** No service requirement
- **Portable:** Any accredited U.S. institution
  - MS, MS and PhD, PhD

- **2019 - 2021:** 1500 fellowships each year
- **2016 - 2018:** 2000 fellowships each year
  - 2016: ~16,800 Applications - ~12% success rate
  - 2017: ~13,000 Applications - ~15% success rate
  - 2018: ~12,000 Applications - ~17% success rate

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.

Effective with the 2020 competition (Fall 2019 deadline), individuals pursuing a master's degree simultaneously with the bachelor's degree (joint bachelor's-master's degree) will be limited to one application to GRFP; they will not be eligible to apply as a doctoral degree student. Individuals in this category applying in the 2019 competition (Fall 2018 deadline) will have one more opportunity to apply as first-year doctoral students in the 2020 competition.

Program Synopsis

The purpose of the NSF Graduate Research Fellowship Program (GRFP) is to help ensure the vitality and diversity of the scientific and engineering workforce of the United States. The program recognizes and supports outstanding graduate students who are pursuing research-based master's and doctoral degrees in science, technology, engineering, and mathematics (STEM) or in STEM education. The GRFP provides three years of support for the graduate education of **individuals who have demonstrated their potential for significant research achievements in STEM or STEM education**. NSF especially encourages women, members of underrepresented minority groups, persons with disabilities, veterans, and undergraduate seniors to apply.

NSF Merit Review Criteria

National Science Board approved Merit Review Criteria apply to GFRP

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.

NSF Merit Review Criteria

National Science Board approved Merit Review Criteria apply to GFRP

Intellectual Merit
Broader Impacts

Each application will be reviewed independently in accordance with the NSF Merit Review Criteria using all available information in the completed application. In considering applications, reviewers are instructed to address the two Merit Review Criteria as approved by the National Science Board - Intellectual Merit and Broader Impacts ([NSF Proposal and Award Policies and Procedures Guide](#)).

Therefore, applicants must include separate statements on Intellectual Merit and Broader Impacts in their written statements in order to provide reviewers with the information necessary to evaluate the application with respect to both Criteria as detailed below. **It is recommended that applicants include headings for Intellectual Merit and Broader Impacts in their statements.**

For Both Criteria, Reviewers will ask:

1. What is the potential for the proposed activity to:

  - Advance knowledge and understanding within its own field or across different fields (Intellectual Merit); and

  - 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.

Translation: Do you have a good question and are you the person to answer it?

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.

Examples of Activities

Advancing discovery and understanding while promoting teaching, training and learning

Activities that integrate the proposed research with education

- Research training for postdocs, graduate students and undergraduates

- Work with science teachers or education majors to develop research-based educational materials (esp. K-12).

- Establish mentoring programs for undergraduates, graduate students, or technicians

- Involve graduate or post-doctoral researchers in undergraduate teaching

- Give science presentations to the broader community: e.g. at museums or libraries, on radio shows or other venues.

Examples of Activities

Advancing discovery and understanding while promoting teaching, training and learning

Minorities, first-generation college students, non-traditional students, faculty at small colleges including community colleges, etc.

- Involve undergraduate or high school students from underrepresented groups in research

- Partner with community colleges to facilitate student transfers to four-year programs

- Build partnerships with minority-serving institutions to facilitate student and faculty exchanges

- Take advantage of campus programs that broaden participation of underrepresented groups

Examples of Activities

Broad dissemination to enhance scientific and technological understanding

- Share the results of NSF-supported projects and contribute to the advancement of the field in a timely manner and accessible format

- Communicate the outcomes of research to the public

- Participate in school activities designed to increase children's interest in science

Examples of Activities

Enhancing infrastructure for research and education

- Provide research tools or resources for community use

- Make unique facilities available to the scientific community

- Foster interdisciplinary research collaboration

- Build partnerships with industry

- International research collaboration and coordination

Health Related Sciences

Individuals are not eligible to apply if they will conduct biomedical research for which the goals are directly health-related, such as etiology, diagnosis or treatment of physical or mental disease, abnormality, or malfunction in humans and other animals.

Research activities using animal models of disease, for developing or testing of drugs or other procedures for treatment of disease, and statistical modeling for which the purpose is diagnosis or epidemiology also are not eligible for support.

There are areas of bioengineering research directed at medical use that are eligible. These include research projects in bioengineering to aid persons with disabilities, or to diagnose or treat human disease, provided they apply engineering principles to problems in medicine while primarily advancing engineering knowledge. Applicants planning to study and conduct research in these areas of bioengineering should select *biomedical engineering* as the field of study.

Developing Ideas for the Proposal

1. The first step in proposal planning is the development of a clear, concise description of the proposed project

2. To develop a convincing proposal for project funding, the project must fit into the philosophy and mission of the grant-seeking organization or agency, and the need that the proposal is addressing must be well documented and well articulated.

3. Typically, funding agencies or foundations will want to know that a proposed activity or project reinforces the overall mission of an organization or grant seeker, and that the project is necessary.

CRS

Reviewers are asked to take a *holistic* approach.

Application Review and Selection Process

Applications submitted in response to this program solicitation will be reviewed online by Panel Review.

The application evaluation involves the review, rating, and ranking of applications by disciplinary and interdisciplinary scientists and engineers, and other professional graduate education experts.

The primary responsibility of each panel is to evaluate the merit of eligible GRFP applications by applying the National Science Board-approved Merit Review Criteria of Intellectual Merit and Broader Impacts, and to subsequently recommend applicants for NSF Graduate Research Fellowships.

Reviewers are instructed to review the applications holistically in the context of applying NSF's Merit Review Criteria and the GRFP emphasis on demonstrated potential for significant research achievements in STEM or in STEM education.

NSF determines the successful applicants from these recommendations, with Fellowships and Honorable Mention offered based on the GRFP portfolio within the context of NSF's mission.

After NSF Fellowship offers are made, applicants are able to view verbatim reviewer comments, excluding the names of the reviewers, for a limited period of time through the NSF GRFP FastLane website.

Application Requirements

Applicants must submit the following information through the FastLane GRFP Application Module:

- Personal Information
- Education, Work and Other Experience
- electronic transcripts
- Proposed Field(s) of Study
- Proposed Graduate Study and Graduate School Information
- the names and email addresses of at least three reference letter writers
- Personal, Relevant Background and Future Goals Statement (3 pages)
- Graduate Research Plan Statement (2 pages)

| *Reference Letter Submission* | **2018**
November 2
(Friday) |

Applications with only two letters (i.e., one fewer than the desired three letters) will be reviewed *unless* the applicant withdraws the submitted application by November 15 of the application year. Applications with fewer than two letters will be returned without review.

Application Review

Applications will be reviewed online by virtual panels of disciplinary and interdisciplinary scientists and engineers and other professional graduate education experts. These reviewers are selected by Program Officers charged with oversight of the review process. Care is taken to ensure that reviewers have no conflicts of interest with the applicants. 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.

Cognizant Program Officers

- Susan Brennan, telephone: (866) 673-4737, email: info@nsfgrfp.org

- Jong-on Hahm, telephone: (866) 673-4737, email: info@nsfgrfp.org

- Christopher Hill, telephone: (866) 673-4737, email: info@nsfgrfp.org

- Ty Mitchell, telephone: (866) 673-4737, email: info@nsf.gov

- Applications contact: GRF Operations Center, telephone: (866) 673-4737, email: info@nsfgrfp.org

Preparation is the key

Follow district approval process

Plan ahead for implementation

Find Funding Sources

Get Copy of Successful Grant Application

10 TIPS TO SUCCESSFUL GRANTS

Proof carefully

Polished Specific Aims Take home a mentor (or 2)

Never exceed the funding amount

Use Statistics to validate need for funding

Pay attention to all review criteria

Peaceful Playgrounds®

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SOLICITATION
https://www.nsf.gov/pubs/2016/nsf16588/nsf16588.htm

FAQs
https://www.nsf.gov/pubs/2017/nsf17123/nsf17123.jsp