NSF Graduate Research Fellowship Program

September 29, 2015

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NSF Program Director

GRFP Goals

- To select, recognize, and financially support individuals who have demonstrated the potential to be high achieving scientists and engineers, <u>early in their careers</u>.

- To broaden participation in science and engineering of underrepresented groups, including women, minorities, persons with disabilities and veterans.

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)

- Contains the following information:
  - **Program description**
  - **Award information**
  - **Eligibility requirements**
  - **Application preparation**
  - **Submission instructions**
  - **Application review criteria**

Graduate Research Fellowship Program (GRFP)

PROGRAM SOLICITATION
NSF 15-597

REPLACES DOCUMENT(S):
NSF 14-590

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

Application Deadline(s) (received by 8 p.m. Eastern Standard Time):

October 26, 2015
    Geosciences; Life Sciences
October 27, 2015
    Computer and Information Science and Engineering; Engineering; Materials Research
October 29, 2015
    Psychology; Social Sciences; STEM Education and Learning
October 30, 2015
    Chemistry; Mathematical Sciences; Physics and Astronomy

IMPORTANT INFORMATION AND REVISION NOTES

1. Application and reference writer deadlines have changed.
2. The number of statements required from all applicants is limited to two.

SUMMARY OF PROGRAM REQUIREMENTS

General Information

Program Title:
    NSF Graduate Research Fellowship Program (GRFP)

Synopsis of Program:
    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) and 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 and STEM education. NSF especially encourages women, members of underrepresented minority groups, persons with disabilities, and veterans to apply. NSF also encourages undergraduate seniors to apply.

GRFP Eligibility

- U.S. citizens and permanent residents

- Early-career: undergrad & grad students

- Pursuing research-based MS and PhD

- Science and Engineering

- Enrolled in accredited institution in US by Fall
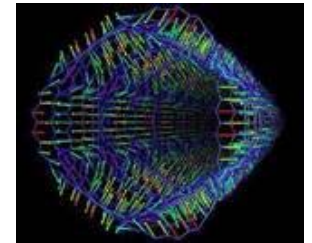
Academic Levels

- **1:** Seniors/baccalaureates; no graduate study

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

- **3:** Second-year grad students
  - ≤ 12 months of graduate study by August

- **4:** >12 months graduate study
  - Interruption in graduate study of 2+ years (can have MS degree)

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

NOT SUPPORTED

- Joint science-professional degree programs
  - e.g. **MD/PhD**, JD/PhD
- Business administration or management
- Counseling, Social work
- Education (except in science and engineering education)
- History (except in history of science)
- **Research with disease-related goals**
- **Clinical study**
  - **patient-oriented research**
  - **epidemiological and behavioral studies**
  - **outcomes research**
  - **health services research**

GRFP Complete Application

Complete Application Package:

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

2) Graduate **Research Statement** (2 pages)

3) Transcripts (uploaded electronically)

4) <u>Three</u> **letters of reference** (received by 5 Nov 2015, 8 pm EST)

DEADLINES: October/November 2015 (received by 8 pm EST)

Please see Solicitation NSF 15-597 for application details and requirements

Preparing a GRFP Application

Personal Statement

Demonstrate potential for STEM research

- Experiences, personal and professional, that contributed to your motivation to pursue a STEM career and your preparation for it.

- Previous research/industrial/professional experiences

  What was the project?
  What was your part of the project?
  Where was this research done?
  Why was this project worth doing?
  How did your part of the project fit into the whole?
  What have you learned?
  Advanced course work

- Career aspirations and goals

  How have your experiences shaped your goals?

Preparing a GRFP Application

Research Statement

Describe your Research Plan

- Demonstrate understanding of research plan and methodology
- Communicate research idea and approach

Address NSF's review criteria

NSF Review Criteria

Two National Science Board-approved review criteria:

- Intellectual Merit

- Broader Impacts

NSB is the governing board of the National Science Foundation & policy advisors to the president and congress

Intellectual Merit and Broader Impacts

- How important is the proposed activity to advancing knowledge within its own field or across different fields?

AND

- How well does the proposed activity benefit society or advance desired societal outcomes?

* Separate sections for Intellectual Merit and Broader Impacts

Intellectual Merit

Demonstrated intellectual ability and other accepted requisites for scholarly scientific study, such as the ability to:

- Plan and conduct research

- Work as a member of a team as well as independently

- Interpret and communicate research

Broader Impacts

Societal benefits include, but not limited to:

- Impact of project or individual student on society
- Increased participation of underrepresented groups, women/minority, students with disabilities, veterans
- Improved STEM education in schools and teacher development
- Impact on society : Increased public scientific literacy; increased public engagement with science and technology
- Community outreach: science clubs, radio, TV, newspaper
- Potential to impact diverse, globally competitive workforce
- Increased partnerships between academia, industry and others
- Leadership potential

Assessment

Intellectual Merit

- Academic performance; grades, curricula, awards, etc.

- Graduate Research plan

- Research/professional experience

- Reference letters

Broader Impacts

- Prior accomplishments and future plans

- Individual experiences

- Potential benefit(s) to society

- Community outreach

- Reference letters

Application Review Process

- Applications are <u>reviewed by panels</u> of disciplinary and interdisciplinary scientists and engineers.

- Applications <u>assigned to panels based on the applicant's chosen Primary Field</u>(s) of Study and the discipline(s) represented.

- Applicants are advised to select the Primary Field of Study that is most closely aligned with the proposed graduate program of study.

- Holistic evaluation.

Holistic Review in GRFP

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 achievements in science and engineering.

Holistic Review in GRFP

Application Component	Intellectual Merit	Broader Impacts
Personal Statement	Yes	Yes
Research Statement	Yes	Yes
Transcripts	Yes	No
Reference Letters	Yes	Yes
Overall Rating	**E/VG/G/F/P**	**E/VG/G/F/P**

Rating Key	
E	Excellent
VG	Very Good
G	Good
F	Fair
P	Poor

Applicant receives **Ratings** and **Comments** for both Intellectual Merit and Broader Impacts.

What Reviewers Note

Samples of GRFP applications with "EXCELLENT" rating for

a) Intellectual Merit (IM),
b) Broader Impacts (BI)

→ Visualization as Word Cloud

(Word clouds give greater prominence to words that appear more frequently in the source text.)

What Reviewers Note (IM)

Sample of GRFP applications (EXCELLENT IM RATING)

What Reviewers Note (IM)

Sample of GRFP applications (EXCELLENT IM RATING)

What Reviewers Note (BI)

Sample of GRFP applications (EXCELLENT BI RATING)

What Reviewers Note (BI)

Sample of GRFP applications (EXCELLENT BI RATING)

Before Applicants Begin, they should ask themselves

- What's special, unique, distinctive, and/or impressive about you or your life story?

- What details of your life might help the reviewers better understand you or set you apart from other applicants?

- When did you become interested in this field, and what have you learned about it (and about yourself) that has convinced you that you are well suited to this field?

- How have you learned about this field—through classes, readings, seminars, work or other experiences, or conversations with people already in the field?

- What reasons can you give for the reviewers to be interested in you?

Reference Letters

- Three reference letters are required
- Applicant can upload contact information of up to 5 reference letter writers
- Select reference letter writers carefully (familiarity with you as a person is important)

 As a <u>reference letter writer</u> keep in mind:

- **Intellectual Merit <u>and</u> Broader Impacts** (give specific examples)
- Deadline: Nov 5, 2015

Advice for Applicants

- Start early

- Read Solicitation, and read it again

- Read NSF GRFP websites

- Select and confirm reference letter writers

- Pay attention to Merit Review criteria

- Identify several colleagues and have them comment on multiple statement drafts

- Share your application materials and the merit review criteria with reference writers

- Monitor receipt of reference letters (3 required for review)

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