Graduate Fellowships Information Session

With a focus on:
NSF Graduate Research Fellowships

September, 2013

Based on Dr. William Hahn’s Presentation

A Few Prestigious National Fellowships

- NSF Graduate Research Fellowship Program
- National Defense Science and Engineering Graduate Fellowship (NDSEG)
- DOE Computational Science Graduate Fellowship
- DOE Office of Science Office of Science Graduate Fellowship Program (SCGF)
- NASA Aeronautics Scholarship Program
- NASA Graduate Student Researchers Program
- National Physical Science Consortium Graduate Fellowship
- Hertz Foundation Fellowship
- SMART Scholarship for Service Program
NSF Graduate Research Fellowship Program

Initiated in 1952 – the oldest NSF program. Has served over 50,000 students

NSF expects to award 2700 fellowships for next year. The actual number depends on the federal budget, which is not set yet.

Success rate has historically been about 14%. Since 2009, it has been a bit higher (17%).

CISE receives about 5% of the awarded fellowships.

NSF Graduate Research Fellowship Provisions

Three years of support over a five year period
Annual stipend of $32,000

Tuition support of $12,000 - cost of education allowance paid to institution - remainder of tuition/fees normally is covered by university.

Cyber-infrastructure access via XSEDE
International opportunities through GROW
NSF Graduate Research Fellowship Provisions

Portable to graduate institutions in US

Flexible - your choice of project, advisor, department

No service requirement (national lab or military)

Honorable Mention for meritorious applications (includes XSEDE access)

The GRFP cannot be accepted concurrently with another Federal fellowship.

GRF Eligibility Criteria

Academic level

Level 1 - Seniors, baccalaureates with no graduate study (4th year of BS/MS)

Level 2 - First-year graduate students (5th year of BS/MS)

Level 3 - Second-year grad students (12 months of graduate study or less by Aug 31 prior to submission)

Level 4 - >12 months graduate study – extenuating circumstances.

Citizenship

U.S. Citizen, National or Permanent Resident

Discipline

Research-based Masters or PhD in NSF-Supported Field
Application Materials

Change this year: Reduction in number of essays! (Was 3 essays at 2 pages each.)

• “Personal Statement, Relevant Background, and Future Goals” essay (3 pages including figures)
• “Graduate Research Statement” (2 pgs incl figures)
• “Eligibility Statement” (Only for extenuating circumstances)
• Three Letters of Reference
• Transcripts

All statements: 12pt font (New Times Roman or Computer Modern), 1” margins, 8.5” x 11”. (Footnotes, captions: 10pt font)

GRE scores no longer accepted

Intellectual Merit & Broader Impacts Criteria

• 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.
• “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”
### Intellectual Merit & Broader Impacts Review

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

- **Potential of the proposal to:** (a) advance knowledge and understanding within its own field or across fields [Intellectual Merit] and (b) benefit society or advance desired societal outcomes [Broader Impacts].
- Do proposed activities suggest and explore creative, original, or potentially transformative concepts?
- Is the plan for carrying out the proposal well-reasoned, well-organized, and based on sound rationale? Does the plan incorporate a mechanism to assess success?
- How well qualified is the individual, team, or organization to conduct the proposed activities?
- Are there adequate resources available to the applicant to carry out the proposed activities?

### Intellectual Merit Criterion

Reviewers will consider the potential of the applicant to advance knowledge based on a holistic analysis of the complete application.

**Potential Ways to Address:**
- Academic performance & background (grades, curricula);
- Awards/honors; Research experience; Publications/presentations;
- Research plan; Evidence of Independence/Creativity; International experience; Choice of institution/graduate advisor & available resources; Communication skills; Choice of References

### Broader Impacts Criterion

Reviewers will consider the potential for future broader impacts as indicated by personal experiences, professional experiences, educational experiences and future plans.

**Potential Ways to Address:**
- Prior accomplishments; Community outreach; Potential impact on society and connectivity; Future plans; Leadership potential; Individual experiences; Integration of research and education; Potential to communicate to diverse audiences
Broader Impacts: Societal Outcomes

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 desired societal outcomes include, but are not limited to:
• full participation of women, persons with disabilities, and underrepresented minorities in 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;
• enhanced infrastructure for research and education.

Personal Statement, Relevant Background, and Future Goals

Personal statement often difficult to write. Discuss:
• Your motivation, preparation, & potential to contribute to scientific research, education, and innovation.
• Examples of your leadership skills, creativity, perspective, & unique characteristics (but avoid arrogance)
• How the GRFP will assist you with career goals

Provides opportunity for evaluators to see you as a person and understand what “makes you tick”

Chance to respond to broader impact merit criterion – How will you contribute to science and society?
Relevant Background

Emphasize experience relevant to your proposal but include all examples of “research”, even if not in your field.

List experience with hypothesis formulation and testing, experimental design, data management and analysis, interpretation of results, dissemination of findings.

Highlight what you did (independence) but discuss collaborators (teamwork) and leadership.

List any publications, posters, presentations, prizes, awards, grants, special recognition, etc.

Mention international experience, collaborators, research opportunities.

Graduate Research Statement

Introduce general theory or area of study and importance - a few references will demonstrate your understanding of field.

Describe your motivation to go into that area & discuss your plans to prepare yourself for that field of study - mention school(s), degree programs, potential advisor, etc.

Spell out specific details of your research and study plan but avoid jargon, specific experimental details, etc. Reviewers are experts in your general field, but may not be experts in your specific specialty.

Comment on the broader impacts of your activities.

Let the reader know of your career plans, even if tentative.
Other Essay Pointers

- Ideally, start on the application 3 months before the deadline.
- Graduate Research Statement needs to have the best set of ideas that you can come up with to address your research problem. This needs time, re-writes, feedback, critiques.
- If you have an adviser, work with them on your materials.
- Use concrete examples of your experience, skills, abilities, why your research is important, and why your proposal will work.

Other Essay Pointers

- Be genuine. Be occasionally passionate, but not over the top.
- Write what you believe, be confident.
- Avoid tangents/diversions; stay on point.
- “Generic” community service is likely not worth space unless you were a leader or instigator.
- It may be helpful to emphasize a thread that runs through your whole life.
- Essays should stand on their own; avoid self-references/dependencies.
- Use a minimum of citations.
Letters of Reference

Three required - should know you as scientist and person

Will compare you with NSF Graduate Research Fellows & other successful students they have known based on: potential to make unique contributions to discipline; ability to conduct original research; leadership potential; productive member of scientific community; originality of plan of study

Will state their role in assisting with the application

Do: provide referees sufficient time; share application materials with them; ask for advice

Track letters on FastLane - **remind referees about deadline**

Review of Applications

New this year:

Webinar orientation for reviewers, including practice discussion so that panelists can calibrate reviews.

Applications will be sent to panelists in December, allowing several weeks to review. (Rather than 2 days, on-site, with average review of 20-30 minutes.)

Virtual panel sessions will be held in Jan. & Feb. to permit discussion and recommendations to NSF.
NSF Graduate Research Fellowship

Deadlines:
CISE Student Applications: Monday, November 4
All Reference Letters: Thursday, November 14

Submit Materials to Fastlane:
http://www.fastlane.nsf.gov/grfp/

Be sure to read the Program Solicitation and visit the Help Center. Most questions about eligibility and requirements can be answered by those resources.

Program Solicitation: NSF 13-584,
http://www.nsf.gov/grfp

Help Center: http://www.nsfgrfp.org

NSF Contact Information

Operations Center, Outreach, Helpdesk:

http://www.nsfgrfp.org

866-NSF-GRFP (673-4737)    help@nsfgrfp.org

NSF GRF description, solicitation (11-582), and links:

http://www.nsf.gov/grfp/

Online Application, User Guides, and Official Announcements:

http://www.fastlane.nsf.gov/grfp/
Local Support

Winning CS Essays and Other Materials:  
http://wiki.engr.illinois.edu/x/KQCOCQ

Ken Vickery, Director of External Fellowships, Graduate College. Reviews application materials on a one-on-one basis  
http://www.grad.illinois.edu/fellowships/proposals

Graduate College Workshops:  
http://illinois.edu/calendar/list/3283

Graduate College Fellowships Database  
http://www.grad.illinois.edu/fellowship/

National and International Scholarships Program:  
http://www.topscholars.illinois.edu/  
http://www.topscholars.illinois.edu/resources/campus.html

CS Student Awards Wiki

https://wiki.engr.illinois.edu/display/studentawards