Graduate Student Fellowships

2014 Graduate Student Symposium
Mini-workshop

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What are the goals of this program?

• Identifies individuals with demonstrated potential for significant achievements

• A high priority is increasing the diversity of the science and engineering workforce, including geographic distribution and the participation of women, underrepresented minorities and persons with disabilities.

www.nsfgrfp.org
GRFP Successes: What is the longitudinal tracking?

• Since 1952 there are over 46,500 fellows to date
  • 30 Nobel Laureates
  • 440 members of the National Academy of Sciences
  • Founders of corporations and book authors
  • Higher Ph.D. completion rate

This is a very prestigious award!
GRFP Successes: What is the funding rate?

**2008**
- Applications: 10,000
- Awards: 1,000
- Funding Rate: 10%

**2010**
- Applications: 12,000
- Awards: 2,000
- Budget: $158.2 million
- Funding Rate: 17%

2014 – NSF expects to fund 2700 awards

2013 Budget - $325 million
So why should you apply for a GRFP award?

Fellowship Benefits:

Three year award over a five-year period

$32,000 annual stipend

$12,000 cost of education allowance (think tuition)

TeraGrid supercomputer access for awardees and honorable mentions

No post-award service requirement

www.nsfgrfp.org
So why should you apply for a GRFP award?

Beyond the money.....

• Get feedback from mentors and review panel* on your research ideas and work plan
  
• Get practice writing for other grant or scholarship applications
  
• Great preparation for job applications and writing publications
  
• Financial independence if you need to switch labs

• Potentially frees up resources for you mentor to purchase supplies or bring in more students
Eligibility:

- US Citizen, U.S. National, or permanent resident alien

- Must be pursuing a research-focused Masters* or Ph.D. program

  (*note: when on the panel no MS student was funded in Microbiology)

- Have completed no more than 12 months of full-time graduate study or equivalent*

www.nsfgrfp.org
Applications are ranked based on student status and are reviewed in groups

Level 1 – undergraduate seniors who know where they will be going for graduate school

Level 2 - Incoming 2014 – 2015 graduate students

Level 3 - 2013-2014 Current first year graduate students that do not have a Masters

*Level 4 – Financial Hardship Waivers available

also for students who switch fields

Most of the awards went to these groups of students
What is the application process time line?

- **August 2014** – New Announcement and application materials was released
- **November 4, 2014** - Deadline for applications
- **April 2015** - Awards and honorable mentions announced
- When should you start to prepare? **Now!**
Application Components:

3 page essay that contains:
  Personal Statement
  Relevant Background
  Future Goals

2 page Graduate Research Statement

3 letters of recommendation (these have to be good!)

Transcripts (No GREs)

Submission through NSF Fastlane – online website
Before You Begin Writing: Read the Program Announcement and Surf the Website nsfgrfp.org

Resources at website include:

• Tips for applying to the program (see handout)
  • FAQs – Frequently asked questions
  • GRFP program managers contact info
  • For Faculty mentors – panelist registration
  • Other funding opportunities (e.g. doctoral dissertation improvement grants)
Before You Begin Writing: Read the Review Guidelines

Two National Science Board-approved criteria

Intellectual Merit

Broader Impacts

Panelists are told “its more about the candidate than the project”

However you MUST address these two sections in your three essays
What is the intellectual merit of the proposed activity?

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

How well qualified is the proposer (individual or team) to conduct the project? (If appropriate, the reviewer will comment on the quality of prior work.)

To what extent does the proposed activity suggest and explore creative, original, or potentially transformative concepts?

How well conceived and organized is the proposed activity? Is there sufficient access to resources? If international activities are proposed, are the proposed activities relevant and do they benefit the applicant?

Note: applicants are not expected to address all of these questions

These questions come directly from NSF grant guide book and Merit Review Criteria for panelists
Panelists may consider the following with respect to the Intellectual Merit Criterion:

- Academic performance
  - Honors and Awards
- Proposed plan of research
- Independence and/or creativity?
- Assess communication skills (i.e., publication, presentations)
- Reference letters
- Appropriateness of the choice of institution
- Description of previous research experience

Stand back!

Iz goin to do science!
What are the broader impacts of the proposed activity?

How well does the activity advance discovery and understanding while promoting teaching, training, and learning?

How well does the proposed activity broaden the participation of underrepresented groups (e.g., gender, ethnicity, disability, geographic, etc.)?

To what extent will it enhance the infrastructure for research and education, such as facilities, instrumentation, networks, and partnerships?

Will the results be disseminated broadly to enhance scientific and technological understanding?

What may be the benefits of the proposed activity to society?

Background information and examples of Broader Impacts activities are available at http://www.nsf.gov/pubs/gpg/broaderimpacts.pdf
Panelists may consider the following with respect to the Broader Impacts Criterion:

- Personal, professional, and educational experiences
- Future plans for disseminating research and career

- Prior accomplishments
- Integration of research and education
- Potential to reach diverse audiences
- Impact on society and connectivity
- Community Outreach
- Leadership potential

Note: applicants are not expected to address all of these questions

This section is incredibly important to your grant application
Some reviewers may count this section up to 50% of the points (1-50 points)
Preparing a competitive proposal:

Read the instructions and follow the rules!

Single space, 12-point, Times New Roman, 1” margins

Incomplete applications will not be reviewed

In all both your essays you must address BOTH the intellectual and broad impact criteria

Don’t Annoy the Reviewers!
Personal Statement

• Describe any personal, professional or educational experiences that have motivated your decision to pursue an advanced degree in science

Address the Intellectual Merit

• Describe your leadership potential and unique characteristics that brought you to your chosen field

• Describe personal or professional experiences that address the Broader Impact section

Have you served as a mentor or tutor?  Do you have any community outreach experience?

Ideally you should describe a past experience and future goal in the field of education

Note: reviewers made a big deal about this. It wasn’t enough to state future goals a description of past efforts was critical to many reviewers
Relevant Background (i.e., research experience)

• Describe any scientific research activities in which you have participated
  Undergraduate research programs
  Summer or part time employment
  Work-study programs
  Make sure you distinguish between graduate and undergraduate research activities

  What were the key questions, methodology, findings and conclusions?
  Here is where your address the intellectual merit

  What was your role in this research (part of a team or did your work independently)?

• Mention all publications, posters, presentations, awards and recognition your received for participating in these activities

  Here is where your address broader impacts (i.e., dissemination of your work)
Graduate Research Statement (2 pages)

• Present a detailed plan of a research project that you intend to pursue
  Avoid being overly specific (e.g., we will centrifuge at 3000 rpm)

• What is the perceived scope of the work during your graduate study?
  Is this a realistic undertaking? Is the work plan cohesive?

• Reviewers are looking for whether you understand the question, research design and methodology.
  i.e., reviewers are looking for whether your mentor wrote it

• Demonstrate the research’s Broader impacts

  What are the benefits to society of your work? Or to the scientific community?
Preparing a competitive proposal: Reference Letters

• Choose three appropriate reference writers
• Give them plenty of time to prepare their letters
  One month minimum
• They should know you as a scientist and personally
• Share with them your application, instructions and merit review criteria

Reference Letters

Applicants are required to submit three reference letters. Reference writers should use letterhead, if possible, and include the following information: Name and Title of reference writer, Department, and Institution or Organization.

The reference letter should provide details explaining the nature of the relationship to the applicant, comments on the applicant's potential and prior research experiences, statements about the applicant's academic potential and prior research experiences, statements about the applicant's proposed research, and any other information to enable review panels to evaluate the application according to the NSF Merit Review Criteria of Intellectual Merit and Broader Impacts.

Good idea to have a back up letter writer just in case
Preparing a competitive proposal: It's okay to ask for help

August

**Reflect** on your experiences and proposed research plan and its potential impact

Aug/Sept

**Discuss** ideas with mentors, peers, and family members

Sept/Oct

**Write a Draft!**; give to mentors, peers, family members to review

**Polish** to generate a final draft of application

Oct/Nov
Tips for Applying to the Program

Top Tips from Reviewers

1. Gain research experience, especially at the undergrad level (for example, see NSF’s REU program).
2. Become involved in leadership roles and community service.
3. Write clear and scientifically-sound essays.
4. Strive for scientific publications and presentations.
5. Have a strong academic record.
6. Be sure to demonstrate the Broader Impacts criteria well.
7. Select strong recommenders.
8. Link your teaching and research experiences.
9. Ensure you display a history of accomplishments.
10. Thoroughly address both Intellectual Merit and Broader Impacts.
11. Highlight any international experience you may have.
12. Display your passion and motivation in the essays.
13. Be knowledgeable of your research topic.
14. Demonstrate the significance of your proposed work.
15. Make sure the proposed research is realistic.
The Review Process – The numbers

12,000 applications * 2-3 reads per application / 500 reviewers = 50 proposals per reviewer

NEW!! Review Panel meets: January via internet

Reviewers spend between 20 – 30 minutes on each proposal

YOU MUST MAKE YOUR PROPOSAL STAND OUT
The Review Process – How does it work?

Over 500 panelists are involved and broken down into subjects

Each application reviewed 2-3 times by different panelists

• Panelists are academic and research experts in general discipline and may not be experts in your research topic area

So you must explain what you are doing clearly and define specific terms

• Panelists write constructive comments which applicant will see

Panelists don’t have much time so feedback is unfortunately limited and sometimes cryptic

Example: “The proposal could be improved by providing potential impact on a broader audience”

Meaning: Applicant did not properly address the Broader Impact section
The Review Process – How does it work?

• Applications are read twice and scored – no standardized scoring system
  
  Each panelist comes up with their own break down on points pertaining intellectual merit and broader impacts

• Conflicting scores (e.g. an application receives a 45 and 25) results in a third read
  
  Applications divided into quality groups and those in Q1 and Q2 are read a third time automatically. Q3 and Q4 proposals are immediately retired

• Top 17% get funded however there is an Honorable Mention category for those proposals just shy of funding level

• If you get an Honorable mention you should treat that as an honor and put on CV and next year’s application
Additional Information:

• Panelists are told “its more about the candidate than the project”

NSF GRFP website (nsf.gov/gfrp)

Application will be submitted through NSF Fastlane

To apply go to: http://www.fastlane.nsf.gov/grfp

www.nsfgrfp.org
Additional Application for Graduate Fellowships and Deadlines

It's okay to repurpose your application and apply to other programs as well

EPA United States Environmental Protection Agency

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NASA Earth and Space Science Fellowship (NESSF) Program

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Florida Space Grant Consortium

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Only 12 applications last year!

This program will support Master Students
NASA Space Technology Research Fellowship 2014

Phase A – submitted by Student through nspires – Due December

$36,000 stipend

Phase B – if student application favorable then university has to confirm you are enrolled in program

Projects can be about using life sciences in space technology

Biofilms, bioregeneration, biofuels, extremophiles, etc....