The National Science Foundation (NSF) Graduate Research Fellowship Program (GRFP): Getting the most out of your undergraduate research experience and obtaining financial support for graduate school

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WELCOME!!!

Ground Rules:

1. If you missed something while I am talking just ask your neighbor or ask me

2. Take notes, if you need to take a picture of a slide take a picture

3. Participate when needed
Overview of This Discussion:

1. Introduction and Overview of GRFP requirements (30 min)

2. Hints for successful application (10 min)

3. Resources available to you (2 min)

4. How to initially approach your research mentor (2 min)

5. Additional Questions (5 -10 min)
Introduction to the:

Substantially increase your chances to choose what graduate school you want to go to
The National Science Foundation (NSF) was established by the National Science Foundation Act of 1950 (May 10th).

**MISSION:**
- To promote the progress of science
- To advance the national health, prosperity, and welfare
- To secure the national defense

This Act also Created the National Science Board (NSB)
The NSF GRFP is the nation's oldest and most established fellowship program that directly supports graduate students in various Science, Technology, Engineering, and Mathematics (STEM) fields. Since 1952, NSF has provided funding for over 50,000 Graduate Research Fellowships. To date, forty-two Fellows have gone on to become Nobel laureates and more than 450 have become members of the National Academy of Sciences (NAS).
The GRFP is About You as an Upcoming STEM Professional...

To select, recognize, and financially support individuals who have demonstrated the potential to be high achieving professionals in their careers.

Recruit and retain these individuals in the US Workforce!
The NSF Graduate Research Fellowship Proposal (GRFP):

There’s money out there for undergraduate students going to graduate school such as the GRFP. This is a great way to also learn how to write a two-page introductory proposal. Some call this a “white or brown” paper which is common in agency solicitations.
Opportunities for Awardees and Honorable Mentions:

**Five Year Awards – $138,000**

- Three years of financial support
  - $34,000 Stipend per year
  - $12,000 Educational allowance to institution

- Professional Development Opportunities:
  - International Research Internships

- Career-Life Balance Initiative (family leave)

- FASED Individuals with Disabilities

- Supercomputer access: XSEDE
Eligibility:

- U.S. citizens and permanent residents
- Early-career: undergrad & grad students
- Pursuing research-based MS or PhD
- Science and engineering
- Enrolled in accredited institution in US by Fall

Academic Levels

- **1:** Seniors or baccalaureates with no graduate study yet
- **2:** First-year graduate students
- **3:** Second-year graduate students
  (≤ 12 months of graduate study by August)
- **4:** >12 months graduate study, with interruption in graduate study of 2+ years (can have MS degree)
 Fields of Study:

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

More inclusive than just science and engineering!!!
Eligibility:

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Academic Levels

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- 4: >12 months graduate study, with interruption in graduate study of 2+ years (can have MS degree)
Eligibility:

New Eligibility Rules (NSF 16-050)

**Level 1:** Seniors/baccalaureates: no graduate study

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

**Level 3:** Second-year graduate students

≤ 12 months of graduate study by August 1, 2017

**Level 4:** >12 months graduate study

with an interruption in graduate study of 2+ years

*Directorate for Education and Human Resources*

*Division of Graduate Education*
GRFP Application Timeline:

- **Late October**: Applications Due
- **Early November**: Reference Letters Due, APPLY to Graduate Schools!
- **Recipients Announced**: Late March – early April
- **May 1**: Acceptance of Award and Declaration of Tenure/Reserve
- **June 1 or Sept. 1**: Fellowship Year Begins
Application Package:

1. Graduate Research Statement (RS)
   ◦ **Maximum 2 pages – use all of the space**

2. Personal, Relevant Background, and Future Goals (PRF) Statement
   ◦ **Maximum 3 pages – use all of the space**

3. Transcripts that have to be uploaded electronically

4. Should have **three** letters of reference but can provide (five) letters. Just have to specify what are the three main ones
   ◦ **Writers submit their own letters, they should be familiar with you and include your potential as a leader, researcher, and educator. You are responsible for ensuring the reference letters are submitted by the deadline.**
**Statement 1:**
**Personal, Relevant Background and Future Goals (3 pages)**

Describe your personal, educational and/or professional experiences that motivate your decision to pursue advanced study. Include examples of research and/or professional activities in which you have participated.

Describe the contributions to advancing knowledge in STEM fields and the potential for broader societal impacts. Include future plans to contribute to broader impact.

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

Present an original research topic that you would like to pursue in graduate school. Describe the research idea, your general approach.

Address the potential of the research to advance knowledge and understanding within science as well as the potential for broader impacts on society.
Application Review Process:

• Applications are reviewed by panels of disciplinary and interdisciplinary STEM, education and social scientist

• Applications **assigned** to panels based on the applicant's chosen Primary Field(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**: 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.
The Two NSF Criteria:

**Intellectual Merit (IM):** How important is the proposed activity to advancing knowledge within its own field or across different fields?

**AND**

**Broader Impacts (BI):** How well does the proposed activity benefit society and advance desired societal outcomes?

Separate sections for Intellectual Merit and Broader Impacts; address in Both Statements
Assessing IM and BI:

**Intellectual Merit Assessment**
- Academic performance: grades, courses, awards, etc.
- Graduate Research plan
- Research/professional experience
- Reference letters

**Broader Impacts Assessment**
- Prior accomplishments and future plans
- Individual experiences
- Potential benefit(s) to society
- Community outreach/mentoring/other ways*
- Reference letters
NSF Advice to Applicants:

• Start early (how many are seniors?)
• **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)
Keys to Proposal Writing for Graduate Students

1. What is your research statement (current & future research goals)?

2. What is your research question?

3. How would answering the research question proposed change science or society?

4. What innovation is being achieved?

5. What is your detailed plan, how will you measure it?

6. What are your qualifications?

7. Did you meet details of the proposal requirements?

8. Did you make your point first and then explain?

All of this is About Making Your Work Relevant!!!
Other Specific Hints for Undergraduate Students:

1. Tell a good story
2. Make headings & highlights
3. Have a picture that informs
4. Write a broader impacts statement in PRF
5. Tie BI in PRF to BI in Research Statement
6. In RS contextualize to relevance
7. Use all space allotted
8. Make your point first and then explain
9. Don’t overdue the references
10. Know the culture of your field
11. Use your Writing Center*****
12. Know the Agency
13. Make sure to include published papers if you have them
14. Include posters, presentations, etc., in supplemental info
15. Work Closely with your Advisor
16. Give Ref. Letter Writers an idea of what needs to be included
17. Submit everything one day early
18. Follow the rules!!!!!
19. LASTLY- Read the FAQ’s: https://www.nsf.gov/pubs/2017/nsf17123/nsf17123.jsp
IV. Institutional Resources:

There are a ton of resources out there and you probably have some at your institution.
Example Resources...

NSF’s GRFP Website, [https://www.nsfgrfp.org/](https://www.nsfgrfp.org/)

University of Missouri, [http://grfpessayinsights.missouri.edu/](http://grfpessayinsights.missouri.edu/)


Alex Lang’s Website, [http://www.alexhunterlang.com/nsf-fellowship](http://www.alexhunterlang.com/nsf-fellowship)

These PowerPoint slides, [http://bir.ou.edu/-NCUR NSF GRFP Talk and on SlideShare](http://bir.ou.edu/-NCUR NSF GRFP Talk and on SlideShare)
How Do I Initially Approach my Research Mentor/ Undergraduate Research Advisor/ PI?

1\textsuperscript{st} : I was talking to “The Broader Impacts Guy” and learned that I could apply for a NSF GRFP and I am asking to see if you would be on board?

2\textsuperscript{nd} : Go read their articles, book, presentations, and think what might be an interesting question/s (1-3) to explore. The go back to them and ask them about what they think about your potential research questions?
THANKYOU!
QUESTIONS?