National Science Foundation
Graduate Research Fellowship Program
(NSF GRFP)

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September 4, 2014
Office of Prestigious Awards and Fellowships

• Kefryn Reese
Graduate School

• Dean Brian Blake
National Science Foundation (NSF) Graduate Research Fellowship Program (GRFP)

Review Announcement
Application Process
Advice from a Review Panelist
NSF-GRFP

• Support for research-based master's and doctoral degrees in science and engineering

• Demonstrated potential for significant achievements in science and engineering
  (Looking for a research project? undergraduate research meeting Oct. 1)

• Three years of support.

• Yearly stipend of $32,000 and a cost-of-education allowance of $12,000
Eligibility

• U.S. Citizenship, nationals or permanent residents

• Degree Requirements
  – BS in science or engineering prior to Fall 2015, typically
    • During the senior year of college;
    • After graduating from college and prior to entering graduate school;
    • During the first year of graduate school; or Prior to completing the fall term of the second year of graduate school.
    • No more than 12 months of full-time graduate study by Aug 2014.
    • No more than 24 semester credits of graduate study by Aug 2014.
    • Joint BS-MS can apply

• Field of Study
  – Research-based master's and doctoral degrees in science and engineering (research and coursework)
Application Deadlines
(must be submitted by 8:00 pm EST):

- October 29, 2014 (Wednesday):
  Engineering; Computer and Information Science and Engineering; Materials Research

- October 30, 2014 (Thursday):
  Mathematical Sciences; Chemistry; Physics and Astronomy

- November 03, 2014 (Monday):
  Social Sciences; Psychology; STEM Education and Learning

- November 04, 2014 (Tuesday):
  Life Sciences; Geosciences

- November 06, 2014 (Thursday):
  All Reference Letter Submissions (3 letters)
Read the RFP


- Second training opportunity:
  Proposal reviews (Oct. 9, 2pm),
  RSVP, mrojas@miami.edu.
EXPERIENCES FROM A SUCCESSFUL APPLICANT
National Science Foundation

• Purpose:
  – Promote the progress of science
  – Advance the national health, prosperity, and welfare
  – Secure the national defense

• Funding opportunities:
  – Scholarships
  – Research Experiences for Undergraduates (REUs)
  – Graduate Research Fellowship Program
  – Grants, and more
The Application Process

• E-signature and certifications
• Personal information
• Education and work experience
• Proposed field of study
• Proposed graduate study
• References
• Personal, Relevant Background and Future Goals Statement
• Graduate Research Plan Statement

*Carefully read and review all instructions*
Education and Work Experience

• List all Colleges and Universities
• Transcripts – get them early!
• Relevant teaching and work experience
• Significant honors, awards, publications and presentations
References

• A critical part of your application – they can help you or harm you
• Do this as early as possible
• Ask people who know you well, keep it relevant
• Talk to your references about your proposed project
• Reference letters are confidential – you will never see them
• Submit 5, rank them, top 3 submitted will be used
Intellectual Merit vs. Broader Impacts

• Intellectual Merit:
  – “The potential to advance knowledge”*

• Broader Impacts:
  – “The potential to benefit society and contribute to the achievement of specific, desired societal outcomes”*

*Source: 2014 NSF GRFP Program Solicitation (NSF 14-590)
Personal, Relevant Background and Future Goals Statement

• Format
• Use headings to organize your thoughts
• Broader Impact is just as critical as intellectual merit in both statements
• 3 page CV in essay form
• Tie your experiences to what you are proposing to do
• What you did, the results, what you learned
• Introduce your research topic
Graduate Research Plan Statement

• Original
• Have a developed approach
• What resources will you need?
• Ground your proposed research in literature
• Be specific – how does this advance knowledge in your field?
• Broader impacts on society are critical
• Outreach is critical
General Advice for Writing

• Begin writing early, you need something to edit
• >80% of the process will be editing and refining – you only have 5 pages so make every word count
• Be clear, be concise, be organized
• Give credit where credit is due
• Cite your references in a standard format
• The Title and Keywords are important too
EXPERIENCES FROM A REVIEW PANELIST
The Review Process

• 2 – 4 reviewers will evaluate each application
• At least one reviewer will be knowledgeable in your specific area of research
• At least one reviewer will be unfamiliar with your specific area of research, but will have a general knowledge of the discipline
• Each review may require 15 – 60 minutes, depending on the quality of the application
• Evaluation Criteria: Intellectual Merit and Broader Impacts
• Rating scale: Excellent, Very Good, Good, Fair, Poor
• Some reviewers are invited back every year; in their lifetime, they may read hundreds of applications – they are experts!
• "The customer is always right" is analogous to: "The reviewer is always right"
What Reviewers are Seeking

#1: Academic preparation especially GRE scores; goal: 320 (1360)
#2: Prior journal publications (for Level 3 and 4 applicants)
#3: Essays must be seamless and flow as if reading one continuous story uninterrupted
#4: Reference letters
  - 2-pages each (preferred), and they must specifically evaluate your research capabilities and ability to work in a team
  - Letters that include incorrect details (such as the wrong applicant name) are extremely damaging
  - Poor letters are the fault of the applicant, not the faculty member
#5: Research should be a "good fit" with the institution's resources
  - Example: A research plan to investigate the effects of glacial ice flows on seal populations in Alaska is probably not a "good fit" with the University of Miami.
Be Explicit

• The reviewer will not make assumptions or make guesses about your proposed research.

Three must-have sentences in any fellowship application:
1) "The problem is ... [source]"
2) "The objective of the proposed research is ..."
3) "The research will consist of [experimental, analytical, simulation, or combinations of ...]"

Two more must-have sentence in your NSF GRFP application:
1) "The intellectual merit of the proposed research is ..."
2) "The broader impacts of the proposed research include ..."

Only a few applicants bother to include those five sentences ... They are better known as "NSF Fellows".
How to Annoy a Reviewer

• Use small font sizes that require a microscope to read.
  – Myth: "If I include it in my application, the reviewer will read it."
  – Do not try to cram information into the 5 pages.

• Use excessive formatting, CAPITAL letters, many font styles (and exclamation points!!)

• Mispel words and use poor grammar and punctuation; or use abbreviations like "etc."
  o utilizar otro idioma

• Use extra commas between phrases, because you think that "more is better", but it’s really not, rather, it’s quite cumbersome to read.
  (When in doubt, leave the comma out.)
Other Recommendations on Content

- Propose a reasonable and achievable outreach program.
- Do mention your career goals and life-long aspirations (such as joining the professoriate, industry, or a national lab), and how they relate to your research and prior personal experiences.
- Do not mention your age or other indicators that are suggestive of hardships (such as single parent).
  - Fellowships are awarded based on the intellectual merit and broader impacts of the application – not age or hardships.
- Tables, figures, and equations – avoid them.
- If travel is planned, specify how travel funds will be acquired.

\[(a + b)^2 = a^2 + 2ab + b^2\]
Never Do These ...

1. Plagiarism
   – Automated computer algorithms are used to detect plagiarism
   – Disciplinary action
   – Permanent record on file with the agency

2. Scientific Misconduct
   – "Fudging" facts
   – "Massaging" data
   – Falsification

If you can’t dazzle them with brilliance, baffle them with bull.
Summary of Do’s and Don’ts

Do’s

- Be confident, but humble
- 12-pt Times New Roman font
- Utilize all 5 pages
- Use brief headings
- Properly cite references
- Explicitly state the Problem, Objective, and scientific approach
- Identify the Intellectual Merit and Broader Impacts in separate sentences
- Mention life-long goals
- Run Spell Check and Grammar Check

Don’ts

- Arrogance
- Doubt
- Small text
- Excessive formatting
- Poor grammar and run-on sentences
- Too many commas
- Cram information into the essays
- Plagiarism / misconduct
- Graphs, figures, tables, and equations
- Abbreviations, "etc."
QUESTIONS?
Applicant Resources

- www.nsf.gov
- FAQs
- Proposal guides
- Links to application portal
- Other funding opportunities
Applicant Resources

- FastLane (www.fastlane.nsf.gov/grfp/) application portal, program solicitation
Applicant Resources

- www.nsfgrfp.org/
  - Advice
  - Links to application and program solicitation
  - Links to other resources