National Science Foundation

WHERE DISCOVERIES BEGIN

The NSF Graduate Research Fellowship Program (NSFGRFP)

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NSFGRFP Overview

- Fellowships for graduate study (~2,000 awarded)
  - research-based master's or doctoral degrees at accredited US institutions
  - fields of science, technology, engineering, and mathematics (STEM) and social sciences
- Three years of support = $138, 000!!!
  - Annual stipend of $34,000, paid monthly $2833
  - Cost of education allowance to institution is $12,000 per year
- International research opportunity through GROW (Graduate Research Opportunities Worldwide)
  - 3-12 month international research collaboration
- GRIP: Graduate Research Internship Program
- Access to XSEDE cyberinfrastructure resources

Eligibility

- To be eligible for the NSF GRFP, you must:
  - be a US citizen, US national, or permanent resident
    - Priority to underrepresented populations in the sciences, those with disabilities, and people from all geographic and economic backgrounds
  - be in a research-focused Master's or Ph.D. program in an NSF-supported field
  - be enrolled in an eligible program at an accredited United States graduate institution by Fall 2019
  - have completed no more than twelve months of full-time graduate study (or the equivalent)

NSFGRFP Supported Disciplines

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

NOT Supported by GRFP

- Clinical work
- Counseling
- Business administration & management
- Social work
- Practice-oriented professional degree programs
- Medical, dental, law, or public health programs
- Joint science-professional degree programs, e.g., MD/PhD, JD/PhD, etc.

Choosing a Primary Field

- Field of study that most closely matches your proposed graduate research topic
  - Note: might not be the same as your graduate department designation
- This is who will review your application!
  - Three experts in disciplinary fields will read your application

Proposed Field of Study, examples:

This is who will review your application!

CHEMISTRY
Chemical Catalysis
Chemical Measurement and Imaging
Chemical Structure, Dynamics, and Mechanism
Chemical Synthesis
Chemical Theory, Models and Computational Methods
Chemistry of Life Processes
Environmental Chemical Systems
Macromolecular, Supramolecular, and Nanochemistry
Sustainable Chemistry
Chemistry, other (specify)

LIFE SCIENCES
Biochemistry
Biophysics
Cell Biology
Developmental Biology
Ecology
Environmental Science
Evolutionary Biology
Genetics
Genomics
Microbiology
Molecular Biology
Neurosciences
Organismal Biology
Physiology
Proteomics
Structural Biology
Systematic Biology
Life Sciences, other (specify)

ENGINEERING
Aeronautical and Aerospace
Bioengineering
Biomedical
Chemical Engineering
Civil Engineering
Computer Engineering
Electrical and Electronic
Energy
Environmental
Industrial Engineering & Operations Research
Materials
Mechanical
Nuclear
Ocean
Optical Engineering
Polymer
Systems Engineering
Engineering, other (specify)

Deadlines *(due by 5pm local time):*

- October 22, 2018
  - Geosciences; Life Sciences
- October 23, 2018
  - Computer and Information Science and Engineering; Engineering; Materials Research
- October 25, 2018
  - Psychology; Social Sciences; STEM Education and Learning
- October 26, 2017
  - Chemistry; Mathematical Sciences; Physics and Astronomy

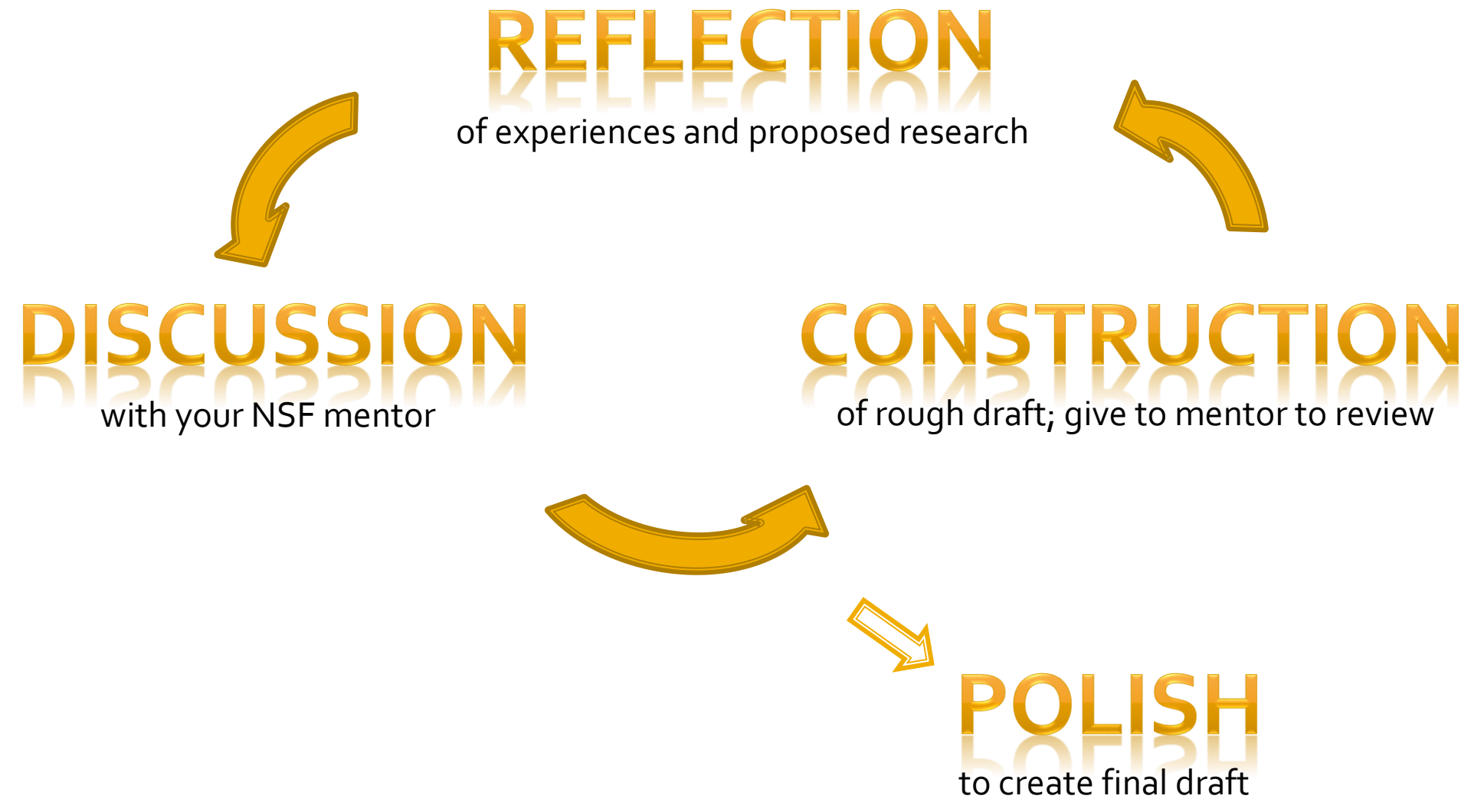
The Application

- **NSF FastLane:**
  - https://www.fastlane.nsf.gov/grfp/Login.do
  - https://www.nsfgrfp.org/applicants/application_components/screenshots

- Personal Profile
- Education and Work Experience
- Planned Graduate Program
- Personal, Relevant Background and Future Goals Statement (3pp)
- Graduate Research Plan Statement (2pp)
- Transcripts (uploaded to Fastlane)
- Three letters of reference
- *As of 2011, GRE scores no longer needed!*

- Go to NSF GRFP Website (nsf.gov/grfp) for details

Preparing a Competitive Application



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

Please outline your educational and professional development plans and career goals. How do you envision graduate school preparing you for a career that allows you to contribute to expanding scientific understanding as well as broadly benefit society?

- Why are you fascinated by your research area?
- What examples of leadership skills and unique characteristics do you bring to your chosen field?
- What personal and individual strengths do you have that make you a qualified applicant?
- How will receiving the fellowship contribute to your career goals?
- What are all of your applicable experiences?
- For each experience, what were the key questions, methodology, findings, and conclusions?
- Did you work in a team and/or independently?
- How did you assist in the analysis of results?
- NSF fellows are expected to become globally engaged knowledge experts and leaders.
- **How did your activities address the Intellectual Merit and Broader Impacts criteria?**

8.5"x11", 12-point font, Times New Roman, 1" margins, single spaced or greater, 2 page max

Graduate Research Plan Statement (2 pages)

Present an original research topic that you would like to pursue in graduate school. Describe the research idea, your general approach, as well as any unique resources that may be needed for accomplishing the research goal (i.e., access to national facilities or collections, collaborations, overseas work, etc.)

- What issues in the scientific community are you most passionate about?
- Do you possess the technical knowledge and skills necessary for conducting this work, or will you have sufficient mentoring and training to complete the study?
- Is this plan feasible for the allotted time and institutional resources?
- How will your research contribute to the "big picture" outside the academic context?
- How can you draft a plan using the guidelines presented in the essay instructions?
- How does your proposed research address the Intellectual Merit and Broader Impacts criteria?

Reference Letters: *(due by November 2, 5 p.m. ET):*

- **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:
  - relationship to the applicant,
  - applicant's potential and prior research experiences,
  - Intellectual Merits and Broader Impacts of application
- Choose people that know you!
- Discuss the application and **share your essays** with them.

How will it be evaluated?

National Science Board

GOVERNING BOARD OF THE NATIONAL SCIENCE FOUNDATION & POLICY ADVISORS TO THE PRESIDENT AND CONGRESS

Two National Science Board-approved criteria:

1) Intellectual Merit

2) Broader Impacts

"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 as detailed below. It is recommended that applicants include headings for Intellectual Merit and Broader Impacts in their statements."

Intellectual Merit

- 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?

- **How will I.M. be assessed?**
  - Academic performance
  - Awards/honors
  - Communication skills
  - International experience
  - Independence/creativity
  - Publication/presentations
  - Research plan
  - Choice of institution
  - References
  - **Research experience**

Broader Impacts

http://www.nsf.gov/pubs/2002/nsf022/bicexamples.pdf

- 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?
- **How will B.I. be assessed?**
  - Prior accomplishments
  - Future plans
  - Individual experiences
  - Integration of research and education
  - Potential to reach diverse audiences
  - Impact on society and connectivity
  - Community outreach
  - Leadership potential

Top Tips From Reviewers

- **Gain research experience**
- Become involved in leadership roles and community service
- **Write clear and scientifically-sound essays**
- Strive for scientific publications and presentations
- Have a strong academic record
- **Select strong recommenders**
- Link your teaching and research experiences
- Ensure you display a history of accomplishments
- **Address both Intellectual Merit and Broader Impacts**
- Highlight any international experience you may have
- Display your passion and motivation in the essays
- **Be knowledgeable of your research topic**
- Demonstrate the significance of your proposed work
- Make sure the proposed research is realistic

Helpful Links

- http://www.nsf.gov/grfp - Official program announcement and information, information for awarded fellows, FAQ guides, and information for coordinating officials
- http://www.fastlane.nsf.gov/grfp/ - Application submission & award announcements
- http://www.nsfgrfp.org - Unofficial program information, applicant assistance & resources, outreach-related issues, panelist registration & information, and applicant ratings sheet review
- http://www.alexhunterlang.com/nsf-fellowship - Blog containing prior winning essays; not NSF endorsed

Other Fellowships

This site has a nice compilation of fellowships for both undergraduate and graduate students:

- http://www.nsfgrfp.org/applicants/other_opportunities

Questions?

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