What Is the National Science Foundation (NSF)?

- Federal agency created in 1950 to “promote scientific discovery, advance national welfare, and secure national defense”
- Manages an annual budget of over $6 billion
- Annually awards approximately 2,700 graduate fellowships, 10,000 research grants, and 30,000 graduate research assistantships
NSF Graduate Research Fellowship Program (GRFP)

- Initiated in 1952 - NSF’s oldest program
- More than 43,000 awardees since inception
- Awarded to more than 20 Nobel laureates
- Recipients have higher rate and shorter time of Ph.D. completion
- High placement in faculty positions
Graduate Research Fellowship Program Benefits

- **Three years of support** over five year graduate enrollment period
- **$30,000** annual cost of living stipend
- **$10,500 cost-of-education allowance** paid to institution (tuition typically waived)
- **Globally portable** - up to $10,500 educational expense reimbursed to fellow attending foreign institution
- **$1,000 one-time travel allowance**
- **TeraGrid supercomputer access** for both fellows and honorable mentions
- **No service requirement**
“The GRF has provided me with a tremendous amount of independence not only in terms of the college or university I attend, but the advisor I work with, and my dissertation topic, as I don’t have to rely on anyone else’s funding but my own. ”

“Prestige .. is a key advantage of the GRF, particularly with respect to future job prospects.”
Eligibility

- Typically college seniors, first-year graduate students, or second-year graduate students in their first semester (or not more than 24 semester hours of credit for graduate study)
- U.S. Citizen, National or Permanent Resident
- Pursuing research-based Masters or PhD in NSF-Supported Field
NSF-Supported Fields

- Chemistry
- Computer and Information Science and Engineering
- Engineering
- Geosciences
- Life Sciences
- Mathematical Sciences
- Physics and Astronomy
- Science Education
- Psychology (non-clinical)
- Social Sciences (non-clinical)
Some Areas NSF Does Not Support

- Research with disease-related goals
- Clinical work
- Business & Management
- Social work & Counseling
- Practice-oriented professional degree programs
- Joint science-professional degree programs (MD/PhD and JD/PhD)
- Medical, dental, law, or public health programs
What Are My Chances of Winning?

- About 10% award success rate
- Additional 17% received honorable mention
- Number of awardees proportional to number of applications in each field
- Applicants evaluated alongside others with same amount of undergraduate/graduate experience

*Data from 2007-2008 application cycle*
Win by Believing in Yourself, Your Community, and Your Talents

Avoid Self-Disqualification

- All other applicants are “more qualified”
- Research, activities, or contributions are not impressive enough
- Not enough experience
- Not able to express things well

NSF funds studies of emperor penguins who are rife with belief in themselves

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National Science Foundation Graduate Research Fellowship Program
Apply at: www.fastlane.nsf.gov/grfp/
Application Materials

1) Personal Statement Essay
2) Previous Research Experience Essay
3) Proposed Plan of Research Essay
4) Description of Completed Graduate Study Essay (Optional)
5) Three Letters of Reference
6) Transcripts
7) GRE Scores (Highly Recommended)

Everything submitted online except transcripts
Boost Your Chances of Winning by Demonstrating the Two NSF Review Criteria

Intellectual Merit

NSF Definition: Demonstrated intellectual ability and other accepted requisites for scholarly scientific study, such as the ability (1) to plan and conduct research; (2) to work as a member of a team as well as independently; (3) to interpret and communicate research.
Intellectual Merit Unraveled

Includes:

- Strong grades, curricula, GRE scores
- Awards & honors
- Publications & presentations
- Communication skills
- Independence & creativity
- Significant research experience
- Thoughtful, student-originated research plan
- Choice of institution
Broader Impacts

NSF Definition: “Contributions that (1) effectively integrate research and education at all levels, infuse learning with the excitement of discovery, and assure that the findings and methods of research are communicated in a broad context and to a large audience; (2) encourage diversity, broaden opportunities, and enable the participation of all citizens—women and men, underrepresented minorities, and persons with disabilities—in science and research; (3) enhance scientific and technical understanding; and (4) benefit society.”
Broader Impacts Unraveled

Includes:

- Fostering diversity on all levels (across disciplines, gender, race, economical, geographical, etc)
- Active community involvement
- Involvement with underrepresented groups
- Integration of research and education
- Diversity of experience – includes international experience
- Awareness of research’s potential societal impact
- Awareness of resources and programs
- Leadership roles
- Genuine and reflective essays
- Passion

Apply at: www.fastlane.nsf.gov/grfp/
The Rating Sheet

This is everything you are rated on - Intellectual Merit and Broader Impacts criteria!
Constructing a Successful Application

Personal Statement (2 Pages)

- Fascination with research area
- Examples of leadership and unique characteristics brought to chosen field
- Personal experiences and individual strengths
- How receiving the award contributes to career goals
- Typically focuses on Broader Impacts criteria
Previous Research Experience Essay (2 Pages)

- Applicable experiences, relevant to research
- Key questions, methodology, findings, and conclusions
- Team and/or independent work
- Mention all publications, posters, presentations, awards, recognition, etc.

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Proposed Research Plan (2 Pages)

- Original inquiry – introduce general theory, importance, and motivation
- How you have prepared
- Perceived scope of work during graduate study and beyond
- Detailed plan, but avoiding being overly specific
- Demonstrate research’s Broader Impacts
Constructing a Successful Application

**Reflection** of experiences and proposed research on the real world

**Discussion** with experts, mentors, family and peers

**Construction**; give to experts, mentors, family and peers to review

Polish to **create final draft**
Reference Letters

- Choose three appropriate references
- Provide them 6-8 weeks
- Should know you as a scientist and personally
- Share application materials and review criteria (good letters address Intellectual Merit and Broader Impacts)
- Follow up with referees and track letter submission using FastLane
Constructing a Successful Application

1. Start the process early
2. Read the solicitation
3. Demonstrate review criteria in application materials
4. Be clear, concise, confident, and truthful
5. Draw on accomplishments more than promises
6. Submit application based on panel you want to review it
7. Ensure essays address all application questions
8. Check for spelling and grammatical errors
9. Verify essays upload correctly AND are in appropriate place
10. Press “Submit” button
11. Regularly check application status
Applications evaluated by field-specific panels
- Panelists are academic and research experts in general field, not necessarily for your research topic

Panelists complete rating sheet
- Evaluated by at least 2 panelists (higher ranked applicants reviewed a third time)
- NSF requests panelists to provide constructive comments (applicants may view)

Panels recommend to NSF awardees and honorable mentions
Insight From An Experienced Panelist

Common Reasons Applicants Not Successful:

- Poor Broader Impacts
- Choice of prestigious school over research-matched school
- Inappropriate or uninformative references
- Weak personal statement
Apply to Win

Applying always produces a winning result!

Besides feedback on your ideas from experts, it is great preparation for:

- Other award applications
- Graduate school applications
- Job applications
- Writing publications
- Professional connections

...and you just might win the fellowship too!
**Application:** Available online mid-August

**Deadlines:** Early November (varies by field)

**Awards:** Announced late March to early April

**Best Time to Start Preparing:** Now
Program Solicitation and Deadlines
http://www.nsf.gov/grfp

Online Application, User Guides and Official Announcements
http://www.fastlane.nsf.gov/grfp/

Operations Center, Outreach, and Helpdesk
http://www.nsfgrfp.org

Questions about Application Process
Telephone: 866-NSF-GRFP (673-4737)
Email: info@nsfgrfp.org

A copy of this presentation can be found at
http://www.nsfgrfp.org