Why apply for external fellowships?

Your Ph.D. programs will fund you anyway, won't they?

Applying for external support is excellent <u>practice</u>
for your future as a researcher.

Grad schools/department want to see you pursuing your own support – that what researchers do!

Your mentors will think positively of you for applying, whether you are successful or not.

You get better at applying by applying.

National Science Foundation

NSF Graduate Research Fellowship Program
www.nsfgrfp.org

GRFP Supported Disciplines

- Chemistry
- Computer and Information Science and Engineering
- Engineering
- Geosciences
- Life Sciences
- Materials Research
- Mathematical Sciences
- Physics and Astronomy
- Psychology
- Social Sciences
- Science, Technology, Engineering and Mathematics Education (research-focused)

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Apply at: **www.fastlane.nsf.gov/grfp/**

GRFP Key Benefits

- 2000+ Awards made annually

- Three years of grad study support:
  - $34,000 Stipend per year
  - $12,000 Educational annual allowance to institution

- Benefits for those in grad school: Time and Freedom

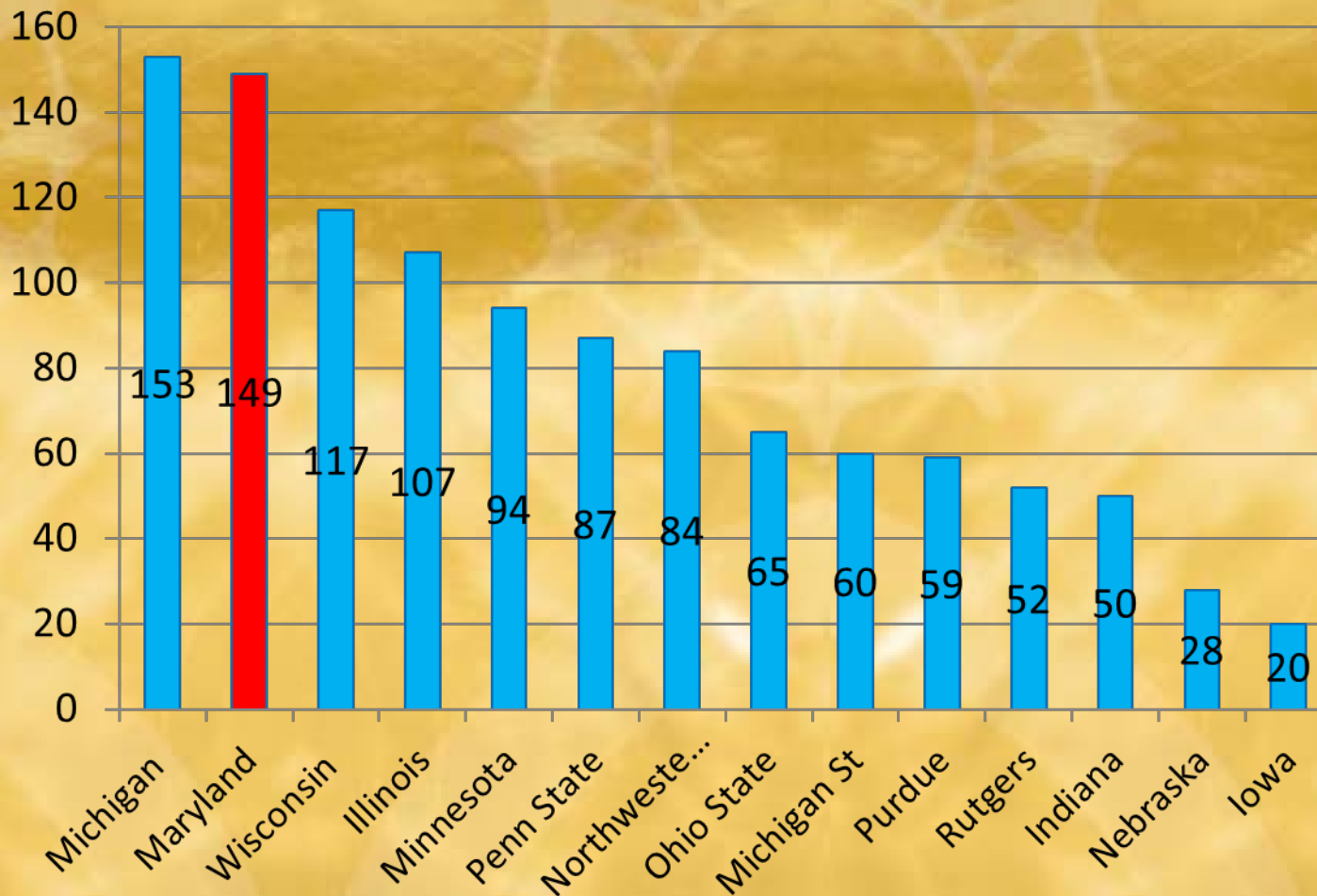- Benefits for grad school applicants: Portability and Time/Freedom

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Last Six Years' NSF Results:
UMD Seniors and Recent Alumni

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Basic GRFP Eligibility

- U.S. citizens, nationals, and permanent residents

- Pursuing research-based PhD (or MS) in NSF field

- Must be enrolled in accredited U.S. institution by Fall 2020

- Must NOT have earned a graduate degree within 2 years prior to the NSF deadline. (BS/MS Programs are exempt)

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Important 2020 Eligibility Info

- Seniors and recent alumni not yet in grad school may apply TWICE - once before, once after beginning grad studies

- You may only apply ONCE after entering graduate studies, either in your FIRST or SECOND year of grad study, not both

- Students entering grad studies in Fall 2020 MUST consult with advisors about when to apply.

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Even More Important Eligibility Info

- You won't win if you don't apply.

- There are multiple practical benefits to applying in addition to the possibility of success.

- Applying more than once greatly increased your chance of success.

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2020 NSF GRFP Deadlines

October 19, 2020 – Life Sciences, Geosciences

October 20, 2020 – Computer and Information Science and Engineering, Engineering, Materials Research

October 22, 2020 – Psychology, Social Sciences, STEM Education/Learning

October 23, 2020 – Chemistry, Mathematical Sciences, Physics/Astronomy

November 1, 2019 (Friday) – Reference Letter Deadline

All deadlines are at **8:00 p.m. Eastern Standard Time**.

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Complete Application

NSF FastLane

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

- Graduate Research Statement (2 pages)

- Transcripts, uploaded into FastLane

- **Three** letters of reference required

- Additional information required for some candidates See Solicitation for eligibility requirements (available on www.nsfgrp.org)

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Review Criteria

Two Review Criteria:

- **Intellectual Merit**: this criterion encompasses the potential to advance knowledge

- **Broader Impacts**: this criterion encompasses the potential to benefit society and contribute to the achievement of specific, desired societal outcomes

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Intellectual Merit

Panelists may consider the following with respect to the **Intellectual Merit** Criterion:

"The potential of the applicant to advance knowledge based on the totality of the content in the application, including the strength of the academic record, the proposed plan of research, the description of previous research experience or publication/presentations, and references."

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Broader Impacts

Panelists may consider the following with respect to the **Broader Impacts** Criterion:

"the potential for future broader impacts as indicated by [past and present] personal, professional, and educational experiences [including teaching, service, leadership, and outreach]."

1. Impact of your research

2. Your personal impact

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The Two Criteria Must be Addressed Explicitly

"**Therefore, 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.**"

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

Theme of the Statement:

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?

- **Show your enthusiasm and passion for your specific area(s) of research focus.**

- **Portray in detail key aspects – curricular and research – of your preparation for a successful graduate career**

- **Discuss concisely your aims for graduate study.**

- **Write clearly and engagingly to a scientific reader <u>in your discipline</u> but not specialized in your sub-field.**

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

- **MOTIVATION AND EDUCATIONAL TRAJECTORY:** Describe clearly, specifically, and concisely your personal, educational and/or professional experiences that motivate your decision to pursue advanced (graduate) study in your field. Describe clear and concrete goals for grad study/research.

- **PREVIOUS RESEARCH:** Include specific examples of any research and/or professional activities in which you have participated. Present a) a concise description of the activities, b) highlight the results and c) discuss how skills and knowledge you gained support your grad study plans. Specify your role in the activity and the extent to which you worked independently and/or as part of a team. Note presentations/publications for each experience.

- **PERSONAL AND SCIENTIFIC <u>BROADER IMPACTS</u>:** Describe your past educational/service experiences and specific future plans; discuss the potential broader impacts of your graduate and future research aims.

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Graduate Research Plan (2 pages)

Present a 'mini-proposal' for an original research project.

• Describe a) your research idea/hypothesis, b) your methodological approach, as well as c) any unique resources that may be needed for accomplishing the research goal (i.e., access to national facilities or collections, collaborations, overseas work, etc.) d) You should include relevant literature citations.

• Address the potential of this work to a) advance knowledge and understanding within science and b) the potential for broader societal impacts.

• Seniors: topic should build strongly on your most recent relevant research

• 1st year grad students: work with new advisors at your graduate institution

• 2nd year grad students: topic should be very close to probable Ph.D. work

Seniors/1st years should keep in mind they are not 'committed' to this project. The main aim is to show that you understand how to formulate a proposal.

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Recommenders

Reference Letters

- Choose at least **three** appropriate reference writers
  - Research mentors and advanced course instructors are best
  - **Rank** recommenders in order of strength
  - List up to 5 recommenders (only <u>top 3</u> will be read)

- Give them ample time to prepare their letters

- They should know you as a scientist and personally

- Share your application materials and the merit review criteria (good letters address Intellectual Merit <u>and</u> Broader Impacts)

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Evaluation of applications

- NSF Panelists receive access to applications for online review up to several weeks in advance.

- You must write persuasively with attention to detail – your essays MUST be:
  - Highly responsive to requirements
  - Excellently organized
  - Clearly written
  - Strongly focused on explicitly demonstrating in detail your intellectual merit and broader impacts

HAVE YOUR ESSAYS REVIEWED BY OUTSIDE READERS

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Early Steps for Juniors/Seniors

- Finalize the list of Grad Schools you'll apply to. Get input from your mentors/research supervisors.

- Work closely with undergraduate research advisor(s) on your Graduate Research Plan essay. The topic should build on and extend your most recent research experiences.

- Nail down 3+ appropriate recommenders NOW – TALK to them about your plans and request that they review and critique your application essays.

- Make a full inventory of your "Broader Impacts" and presentation activities NOW and enhance them if possible.

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Apply at: www.fastlane.nsf.gov/grfp/

Early Steps for Current 1st Year Grad Students

- Consult with your present AND prospective grad school advisor(s) about WHEN to apply, as well as about your Graduate Research Plan essay. Your essay topic can build on your most recent undergraduate work, and/or move in directions related to your new graduate program.

- Nail down 3+ appropriate recommenders SOON – Discuss with them your plans and request that they review and critique your application essays.

- Make a full inventory of your "Broader Impacts" and presentation activities NOW and enhance them if possible.

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Online Advice Sites and Appts.

1. www.nsfgrfp.org

2. GRFP Essay Insights by Robin Walker

- available on Internet Archive Wayback Machine here:
https://archive.org/web/ - search for "nsf grfp essay insights"

3. Contact me for individual appts.:

   nsfgrfp@umd.edu

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Apply at: **www.fastlane.nsf.gov/grfp/**

Additional Grad Study Awards

Plan to apply to ALL that are relevant to your plans:

National Defense Science and Engineering Graduate Fellowship (no Dept. of Defense work obligation): http://ndseg.asee.org/

Science, Mathematics, and Research for Transformation (employment obligation in a DoD lab): http://smart.asee.org/

NASA Space Technology Research Fellowship: https://www.nasa.gov/directorates/spacetech/strg/archives_nstrf.html

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Useful Databases and Links

Cornell University Graduate School – Fellowship Database:
http://www.gradschool.cornell.edu/fellowships

University of California, Berkeley – Scholarship Connection
http://scholarships.berkeley.edu/

University of California, Los Angeles Graduate & Postdoctoral Extramural Support (GRAPES) Database
https://grad.ucla.edu/funding/#

National Defense Science and Engineering Graduate Fellowship http://ndseg.asee.org/

National Science Foundation Graduate Research Fellowship
http://www.nsfgrfp.org/

Ford Pre-Doctoral Diversity Fellowship
http://sites.nationalacademies.org/pga/fordfellowships/

GEM Diversity Fellowship Programs
http://www.gemfellowship.org/students/gem-fellowship-program/

National Institutes of Health Fellowships
https://researchtraining.nih.gov/programs/fellowships

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