



You are invited to join the other webinars in this series!

For undergraduates (especially rising seniors)

Webinar: Are You Ready for Grad School? Finding Fellowship Funding

(Common misconceptions about graduate school; how to apply to NSF's Graduate Research Fellowship Program—its benefits, eligibility, parts of the application, review process, and basic tips for putting together a competitive application)

For all SUNY students:

Webinar #1: Applying to NSF's Graduate Research Fellowship Program (All the basics, such as GRFP's benefits, eligibility, parts of the application, the review process, and basic tips for putting together a competitive application)

Webinar #2: Winning Strategies for GRFP (and How to Get Started) (NSF's review criteria, how to maximize your intellectual merit and broader impacts, and other winning strategies)

Webinar #3: Write! (As if Your Career Depends on it) (Write about your research in an interesting and lively way, tailored to your audience)

PART 1: Program Information

PART 2: Eligibility

PART 3: The GRFP Application

PART 4: Questions!



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National Science Foundation

- Independent federal agency created in 1950
- Mission
 - To promote the progress of science
 - To advance the national health, prosperity, and welfare



- To secure the national defense
- Funds ~20% of all federally supported basic research conducted by America's colleges and universities
- GRFP was NSF's first program, and has supported graduate students every year since 1952



GRFP Goals

- To select, recognize, and financially support individuals who have demonstrated the potential to be high achieving scientists and engineers, <u>early in their careers</u>.
- To broaden participation in science and engineering of underrepresented groups, including women, minorities, persons with disabilities and veterans.



- Scientists, entrepreneurs, public figure ;
- 4 (of 12) astronauts in NASA's class of L7
- Many go on to win awards-for science Ind Unitomative Information (Unitational Information Information)
 Ieadership; many Nobel Prize Without Information (Information Information)



Nobel Prize Field	# GRFP Awards	De ay between GRFP & Nobel			
Chemistry -	-	33 years			
Economics	9	40 years			
Physics -	17	31 years			
Physiology or Medicine	5	30 years			
Total	39	(41 were offered GRFPs)			

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GRFP Unique Features

- Fellowship: Awarded to individual
- Flexible: Choice of project, advisor & graduate program
- Unrestrictive: No service requirement afterward
- Portable: Can be used at any accredited U.S. institution
 - Master's, PhD, both degrees
- 2022 will see an increase in # of awards!!! (up to 2,750 awards!)

(In 2021 there were 2,167 awards)

- in 2010 2020: ~2,000 awards yearly
 - 2016: ~16,800 Applications ~12 % success rate
 - 2017: ~13,200 Applications ~15 % success rate
 - 2018: ~12,400 Applications ~16 % success rate (similar in 2019, 2020)



SUNY

The State University of New York

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GRFP Benefits

The stipend level has just gone up:

Five Year Award, worth \$147,000



- \$37,000 stipend per year
- \$12,000 educational allowance to institution
- Professional Development Opportunities: NSF INTERN
- Supercomputer access: XSEDE
- Career Life Balance (family leave)

See GRFP's brand new 2022 Solicitation (search for NSF 22-614)





GRFP Benefits

NSF-Wide Program: Non-Academic Research Internships for Graduate Students (NSF 17-091)

- Support for internships in industry, non-profits, agencies
- Supplements to existing NSF awards
 - To complement academic research training
 - To enhance preparation for multiple career pathways
 - To encourage underrepresented participants
- \$55,000 per student for six months (12-mo. max)
- Look online for deadlines



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GRFP Eligibility

- · U.S. citizens, nationals, and permanent residents
- · Early-career: undergrad and grad students
- Pursuing research-based master's or PhD
- Science and Engineering
- · Enrolled in accredited institution in US by Fall









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NOT SUPPORTED

- Joint science-professional degree programs

 e.g. MD/PhD, JD/PhD
- Business administration or management
- Counseling, Social work
- Education (except STEM education)
- History (except for history of science)
- Research with disease-related goals (unless Biomedical Engr)
- Clinical research
 - Patient-oriented research
 - Epidemiological/behavioral studies
 - Outcomes research
 - Health services research



NOT SUPPORTED

Individuals are not eligible to apply if they will conduct research for which the goals are directly health-related, such as etiology, diagnosis or treatment of physical or mental disease, abnormality, or malfunction.

Research activities using animal models of disease, for developing or testing of drugs or other procedures for treatment of disease or disorder are not eligible. Research focused on basic questions in plant pathology are eligible, however, applied studies focused on maximizing production in agricultural plants or impacts on food safety, are not eligible.

Certain areas of bioengineering research directed at medical use are eligible... bioengineering to aid persons with disabilities, or to diagnose or treat human disease or disorder, provided they apply engineering principles to problems in medicine while primarily advancing engineering knowledge. Applicants planning to study and conduct research in these areas of bioengineering should select biomedical engineering as the field of study. Certain areas of materials research directed at development of materials for use in biological or biomedical systems are eligible, provided they are focused on furthering fundamental materials research. *See GRFP Solicitation for more details*



PART 3:

The GRFP Application



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Before beginning your application, ask yourself

- What's special, unique, distinctive, and/or impressive about you and/or your life story?
- What details of your life might help the reviewers better understand you or set you apart from other applicants?
- What are your research achievements? How did you become interested in your field, and what have you learned about it (and yourself) that has convinced you that you're well suited to this field?
- How have you pursued your field so far—through classes, readings, seminars, work or other experiences, or conversations with people already in the field?
- What is your personal story so far what reasons can you give for the reviewers to be interested in you?





NSF Review Criteria

Two National Science Board-approved review criteria:

- Intellectual Merit

How important is the proposed activity to advancing knowledge within its own field or across different fields?

- Broader Impacts

How well does the proposed activity benefit society or advance desired societal outcomes?



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Intellectual Merit



Your potential to discover new knowledge

Your demonstrated intellectual ability (such as grades, curricula, awards, etc.)
 Other evidence of your potential for scholarly scientific study, such as your ability to:

- Plan and conduct research
- Work as a member of a team as well as independently
- Interpret and communicate research
- Take initiative, solve problems, persist

Review Process

The potential of <u>your approach to your field of study and your</u> <u>Research Plan</u> to lead to new knowledge

> Evidence of intellectual merit should be found in all parts of your application - Personal Statement, Research Plan, letters, experiences, awards, achievements, transcripts.

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Broader Impacts CRFP

- Potential impact of the individual (you!) on society
- Potential impact of your <u>research on society</u>; why it's important

Societal benefits may include, but are not limited to:

- Increasing participation of underrepresented groups, women, students with disabilities, veterans
- Outreach: Mentoring; improving STEM education in schools
- Increasing public scientific literacy; increased public engagement with science and technology
- Community outreach: science clubs, radio, TV, newspapers, blogs
- Potential to impact a diverse, globally competitive workforce
- Increasing collaboration between academia, industry, others

Likewise, evidence of <u>broader impacts</u> can be found in all parts of the application - Personal Statement, Research Plan, letters, experiences, awards, achievements.





- Your application is reviewed by a panel of disciplinary and interdisciplinary scientists and engineers.
- Applications are assigned to panels based on your chosen <u>Primary Field of Study</u>. Select the Primary Field of Study most closely aligned with your proposed graduate program of study. You may select more than one, but the first one you <u>select determines which panel will review your application</u>. See fields of study at www.nsfgrfp.org.
- Prepare your statements with your audience in mind!
- Holistic Review



Holistic Review

Holistic review is 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.

CRFP





Convey your potential

Essential: Address Intellectual Merit and Broader Impacts separately, in both your Personal Statement and your **Research Statement.**

Required: Using separate sections or headings for intellectual Merit and Broader Impacts. If you don't do this, your application will probably be returned without review.



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Make your contributions clear

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Reference Letters



- 3 reference letters are needed for a complete application
- You can list up to 5 reference letter writers (ranked). The top 3 will be used.
- Reference letter deadline is typically shortly after the application is due, but this may change - see the Solicitation for details.
- If one letter fails to arrive, your application can still be reviewed (or withdraw it if you will be eligible next year)
- Select your reference letter writers carefully (familiarity with you as a person is important).
 Share your statements with them if at all possible.



Reference Letters



GRFP letters differ from regular grad school letters.

- Make sure your reference writers know about GRFP and NSF's Intellectual Merit and Broader Impacts criteria.
- Ask them if they think they know you well enough to write a strong letter.
- Discuss with them why you think you're a good candidate for this fellowship (show them your statements before you apply).
- Advice to faculty letter-writers:
 - GREs are not part of the application. Don't mention them.
 - Strong letters say things that students can't say about themselves.
 - if you describe the student's research, do not overshadow them.

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Prepare a competitive application

- Start early!
- Read the current Solicitation, and read it again.
- Look at the NSF GRFP website (www.nsfgrfp.org)
- Describe your honors, experiences, presentations, any publications (etc.) clearly for the reviewers.
- Select and confirm your reference letter writers and monitor receipt of their letters on the GRFP website.
- Share your application materials and the merit review criteria with your reference letter writers.
- Pay attention to NSF's merit review criteria.
- Your statements should be interesting and clear. Ask several colleagues to read and comment on drafts.
- Write with your audience in mind!



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Another (great!) reason to apply for a fellowship

If NSF or a similar prestigious federal fellowship program) recognizes you with an award OR with Honorable Mention, and if you remain within the SUNY system for your graduate study, you may be eligible for \$5,000 in unrestricted funds from SUNY (for research, travel, professional development, or to augment your stipend!).

The SUNY GREAT Award

(Graduate Research Empowering and Accelerating Talent) https://www.suny.edu/sunygreat/

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Another (great!) reason to apply for a fellowship

Winning one of these prestigious federal fellowships (or an NSF Honorable Mention) may qualify you for SUNY GREAT:

	# awards	Stinond	Cost of Ed	Dortable?	Previous	Timing
	# awarus	Superiu	COSt OF EU.	Pullable	master s:	ming
NSF GRFP	2,000+	\$37,000	\$12K	YES	NO	early years
DoD NDSEG	< 200	\$38,400	full tuition	YES	allowed	early years
DoE CSGF	(few)	\$36,000	full tuition	YES	allowed	early years
NASA	(few)	\$30K-36K	\$8K+		NO	Y1 grad
NIH NRSA (F30, F31)	(many)	\$26,353		NO	allowed	final years
Canadian awards:						
NSERC, SSHRC, CIHR	(many)	(varies)				

Inaugural (2021) class of SUNY Great Awardees
 22 awardees from UB, SBU, Binghamton, Albany

 8 were SUNY undergrads
 Nearly half are women
 6 identify in other underrepresented categories
 Half were first-generation college students
 18 worked their way through college

- \$5K in funds can be used for research, travel, professional
- development, or to augment stipend
 See <u>https://www.suny.edu/sunygreat/awards/</u> for their bios, photos, and fields of study

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of New York



Second (2022) class of SUNY Great Awardees

- 28 awardees from UB, SBU, Binghamton, Albany, and ESF
 - 10 were SUNY undergrads
 - nearly 40% are women
 - 7 identify in other underrepresented categories
 - 25% were first-generation college students
 - 16 worked their way through college
- \$5K in funds can be used for research, travel, professional development, or to augment stipend
- See <u>https://www.suny.edu/sunygreat/awards/</u> for their bios, photos, and fields of study





