Graduate Fellowship Opportunities

posted on the physics website under Graduate -> Graduate Resources -> <u>Graduate Research Fellowships</u>(NFS, NASA, DOE, etc.), <u>Writing Successful Graduate Fellowship Proposal</u>

Fellowship List

Fellowship	Link	Due Date	Length	Restrictions
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NASA Earth and Space Science Fellowship (NESSF)	https://science.nasa.gov/researchers/sara/fellowship-programs#gradops	~Feb 2019	3 yr	none, but US citizens given preference
NASA Space Technology Research Fellowship (NSTRF)	https://nspires.nasaprs.com/external/solicitations/summary!init.do?solId={23291728-FC29-E544-8D34-45811A70418A}&path=open	November 1, 2018	1-4 years	US Citizens and permanent residents. Admitted to or enrolled in a graduate program
GEM Fellowship	http://www.gemfellowship.org	November 13, 2018	Partial support	Underrepresented minority (see website) and US Citizen or permanent resident
NASA's Minority University Research and Education Project	https://nspires.nasaprs.com/external/solicitations/summary.do?method=init&solId={1C02074F-EDF4-7E23-2C21-165ECC9008FB}&path=closedPast	Not currently open :(	Up to 3 years	US Citizen, be enrolled in graduate program. Have completed < 24 credits (see table for details)
DOE Computational Science Graduate Fellowship (CSGF)	https://www.krellinst.org/csgf/about-doe-csgf/eligibility-program-requirements	Jan 9, 2019	4 yr	US citizen / perm resident, 1st year students
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Hertz Graduate Fellowship	http://hertzfoundation.org/fellowships/fellowshipaward	October 24, 2018	Up to 5 years	US citizen or permanent resident. Almost entirely for senior undergrad and first year grad student.
Connecticut Space Grant Consortium - small fellowships for undergrad and grad	http://ctspacegrant.org/funding-programs/student-opportunities/december-2017	October 3, 2018	Short / flexible	None, only one per year, up to $8000 for graduate students

NSF Graduate Research Fellowship Program (NSF - GRFP)

The purpose of the NSF Graduate Research Fellowship Program (GRFP) is to help ensure the vitality and diversity of the scientific and engineering workforce of the United States. The program recognizes and supports outstanding graduate students who are pursuing research-based master's and doctoral degrees in science, technology, engineering, and mathematics (STEM) or in STEM education. The GRFP provides three years of support for the graduate education of individuals who have demonstrated their potential for significant research achievements in STEM or STEM education. NSF especially encourages women, members of underrepresented minority groups, persons with disabilities, veterans, and undergraduate seniors to apply.

- Due: Oct. 26, 2018, reference letters due Nov. 2
- https://www.nsfgrfp.org
- 3 years over a 5-year fellowship period
- 2,000 awards expected, $34,000 per year, money for tuition to University
- US Citizens / permanent residents, 1st and 2nd year graduate students

NSF Graduate Research Fellowship Program (NSF - GRFP)

- Submit on FastLane
  - Personal Information;
  - Education, Work and Other Experience;
  - electronic transcripts;
  - Proposed Field(s) of Study;
  - Proposed Graduate Study and Graduate School Information;
  - the names and email addresses of at least three reference letter writers;
  - *Personal, Relevant Background and Future Goals Statement (max 3 pages)*
  - *Graduate Research Plan Statement (max 2 pages)*
  - ***Both statements must address NSF's review criteria of Intellectual Merit and Broader Impacts (described in detail in Section VI).***

NSF Graduate Research Fellowship Program (NSF - GRFP)

- Advice:

  - Resources for advice:

    ◦ Mallory Ladd (www.malloryladd.com/nsf-grfp-advice.html) - If you can follow her schedule, you should be more than prepared
    ◦ Claire Bowen (www.clairemckaybowen.com/fellowships.html) - Lots of advice interleaved with excerpts from successful essays
    ◦ Philip Guo (www.pgbovine.net/fellowship-tips.htm) - Applied under old system, but still great advice.
    ◦ DJ Strouse (djstrouse.com/guide-to-applying-to-us-science-phd-programs-and-fellowships) - Applied under old system, but still great advice.
    ◦ Blengineers (https://www.youtube.com/playlist?list=PL0eM_0CI4GB-vDcwBfewjU9PlaMry4wo3) - Fun video series of application tips
    Alex Hunter Lang (http://www.alexhunterlang.com/nsf-fellowship) - advice, example essays, this list of resources…

NSF Graduate Research Fellowship Program (NSF - GRFP)

- General Advice
  - **GRFP funds people not projects** (autonomous, self-motivated, significant potential to advance scientific knowledge and benefit society)
  - Both essays should explicitly address **Intellectual Merit and Broader Impacts** (and denote with sub-headers)
  - Write for a **general science audience**. Assume reviewers are in your primary field (physics) but not subfield (e.g. condensed matter)
  - Get a **diverse set of letter writers** and make it *easy* for them to write you a good letter (meet with them early and update them on your progress, goals, etc. send them information on what an NSF letter should contain, and send them your CV and essays early).
  - **Ask for help** (University resources, peers, advisors, …)
  - Ask a lot of different people to read your essays.

  - What is the open question? What will you do to fix it? Why are the right person to do it?

NSF Graduate Research Fellowship Program (NSF - GRFP)

- **Personal, Relevant Background and Future Goals Statement (3 pages max)**
  - One suggestion:
    - 1.5 pages: Previous research experience (relevant background),
    - 1.0 page: Intellectual merit and broader impacts (personal statement),
    - 0.5 page: Current research and future goals
  - Another suggestion:
    - **Personal Statement** (~1.25 pages). This is where you tell your unique story of either how you became interested in science, what makes you special, and/or any unique perspective you bring to science. Great place to mention if you had to overcome any hardships or would be adding to the diversity of the STEM field. Definitely use this section to highlight Broader Impacts.
    - **Relevant Background** (~1.25 pages). Hopefully you already have research experience, so explain how that has prepared you for success in graduate school and beyond. Mainly use this section for Intellectual Merit, but also highly the Broader Impacts of your research experience.
    - **Future Goals** (~0.5 pages). This is where you tie your personal background and scientific background into one cohesive vision for the future. I'm undecided if you really need separate headers for Intellectual Merit and Broader Impacts in this section.

- Your chance to help the reviewers remember you! Make a case for why you will **succeed** in graduate school and your **capacity to be a leader**.
- Talk about specific experiences. If research is a strength talk about it a lot! If something else, talk about that more.
- Be straightforward about any shortcomings in your transcript, etc., address them head on and explain why you are an awesome candidate.

NSF Graduate Research Fellowship Program (NSF - GRFP)

- **Graduate Research Plan Statement (max 2 pages)**
  - One suggestion:Introduction
    - Research Objectives
    - Hypotheses
    - Preliminary Results (if you have any from previous research)
    - Study Site (if proposed research has a field work component)
    - Experimental Approach
    - Intellectual Merit
    - Broader Impacts
    - References
  - Another suggestion:
    - Intellectual Merit - Introduction: Introduce the scientific problem and its impact on science (Review Criteria 1)
    - Broader Impacts - Introduction: Demonstrate the problem's impact on society (Review Criteria 1)
    - Intellectual Merit - Research Plan
      - Show the major steps that need to be accomplished
      - What is the creative part of your approach?
      - Have you thought of alternatives for hard or crucial steps?
      - What skills do you have to make this plan successful?
    - Broader Impacts - Research Plan: Paragraph to address how this research impacts Review Criteria 2-5.
    - Conclusion: end with several sentences summarizing your project.

- Address **intellectual merit and broader impacts**
- **Clear, concrete plan** understandable by someone not in your sub-field
- **Context and importance** emphasized

NSF Graduate Research Fellowship Program (NSF - GRFP)

- **Reference Letter Writes**
  - Ask early!
  - Diverse! Best if they can speak to your potential intellectual merit *and* broader impacts
  - NSF says: "**Be comprehensive in your selection of reference writers.** You should not simply select three people who will say the same thing. Instead, you are encouraged to select references who can comment on different aspects of your qualifications for the fellowship. For example, you might seek reference letters from your undergraduate advisor, a summer lab coordinator, your graduate advisor or mentor, a supervisor from a K-12 outreach program, or an employer who can address your professional skills."

  - A reference letter-writer should:
    - indicate department and institution, how long they have known you, and in what capacity
    - comment on your potential to:
      - succeed in graduate school
      - conduct original research
      - communicate effectively
      - work cooperatively with peers and supervisors
      - make unique contributions to your chosen discipline and to society in general
    - comment on your leadership potential both in your chosen field, and as a member of the scientific community
    - discuss a specific positive experience or interaction they have had with you
    - Note: if you referee is your research supervisor, they should comment on the originality of your proposal, and communicate what role she or he played in assisting you with your proposal.

NSF Graduate Research Fellowship Program (NSF - GRFP)

- ## Suggested (super ambitious) timeline

June: Find out as much information as you can about the program. After you're done here, check the [NSF GRFP website](#), [thegradcafe](#) forum, and some of the resources I have listed below.

July: Start reading the literature and combing through the discussion/conclusions sections for potential 'knowledge gaps' you could propose to 'fill in' with your Graduate Research Plan Statement. Reach out to potential advisers (if you're an undergraduate student), or meet with your current research adviser (if you're a graduate student) to discuss potential topics for your proposal.

August: Outline & draft Graduate Research Plan Statement, contact recommendation letter writers and set up a brief meeting with each

September: Outline & draft Personal, Relevant Background, & Future Goals Statement, send to reference letter writers for review/editing

October: Revise/edit statements to fit within page limits, check in with reference letter writers

End of October: Submit a day early!

NSF Graduate Research Fellowship Program (NSF - GRFP)

- **Suggested timeline for *this* year**

Sept. 28 Today: Brainstorm with colleagues a topic and outline
Sept. 28 Today: Secure reference letter writers as soon as possible. If it's been awhile, offer to chat/Skype to catch up.

Oct. 3 Early Next week: Complete a detailed outline of a research plan.
Oct. 5 Late Next week: Discuss / get feedback on detailed outline with advisor

Oct. 5-11: Work hard on complete first draft of research statement

Oct. 11: Send complete first draft of research statement to advisor, letter writers, and peers for editing, give them two weeks for feedback

Oct. 11-Oct. 18:
1) Work on personal / future goals statement.
2) Make edits to research plan.
3) Fill out all paperwork on FastLane (it can be a *pain!*).

Oct. 18: Send CV, personal / future goals statement, and updated research plan to advisor, letter writers, and peers for their reference / feedback. Remind them to send you any feedback by Oct. 24.

Oct. 24: Receive any final comments/feedback. Make edits as needed.

Oct. 25: Submit! (recommended)
Oct. 26: Submit (if you're feeling more risky).

On this short timeline, peer feedback will be *really really* important.

NSF Graduate Research Fellowship Program (NSF - GRFP)

- Look at examples! Lots available online or ask us for some
- http://www.alexhunterlang.com/nsf-fellowship

NSF GRFP Examples :

Name	Year	Area	Age of Applicant	Success	Proposal	Personal	Previous	Ratings	Examples Host	Additional Advice?
Elissa M. Redmiles	2017	Interdisciplinary: CS and sociology	Second Year Grad	Winner! and l	Yes	Yes	NA	No	Elissa M. Redmiles	
Brittany Jack	2017	Cell Biology	Senior Undergrad	Winner!	Yes	Yes	NA	Yes	Alex Lang	
Sarah Blunt	2017	Astrophysics	Senior Undergrad	Winner!	Yes	Yes	NA	No	Alex Lang	
Anonymous	2017	Sustainable Chemistry	Senior Undergrad	Winner!	Yes	Yes	NA	No	Alex Lang	
Krystal Vasquez	2017	Geoscience - Atmospheric Chemistry	Second Year Grad	Winner!	Yes	Yes	NA	Yes	Krystal Vasquez	Yes
Luis Nieves	2017	Chemical Engineering	Senior Undergrad	Winner!	Yes	Yes	NA	No	Alex Lang	
Alex Matlock	2017	Electrical Engineering	First Year Grad	Winner!	Yes	Yes	NA	No	Alex Lang	
Gualberto Guzman	2017	Computer Science	Senior Undergrad	Winner!	Yes	Yes	NA	Yes	Alex Lang	
Steven Sartor	2017	Chemistry - Chemical Structure, Dynamics, and Mechanism	Second Year Grad	Winner!	Yes	Yes	NA	Yes	Alex Lang	
Carlos Sandoval	2017	STEM Education and Learning	First Year Grad	Winner!	Yes	Yes	NA	Yes	Alex Lang	
Anonymous	2017	Chemistry - Environmental/Atmospheric Sciences	Senior Undergrad	Winner!	Yes	Yes	NA	Yes	Alex Lang	
Anonymous	2017	Life Sciences - Biochemistry	Senior Undergrad	Winner!	Yes	Yes	NA	Yes	Alex Lang	
Lillian Horin	2017	Life Sciences - Physiology	Senior Undergrad	Winner!	Yes	Yes	NA	No	Lillian Horin	
Jonathan Gerhard	2017	Mathematical Sciences - Algebra, Number Theory, and Combinatorics	Senior Undergrad	Winner!	Yes	Yes	NA	Yes	Alex Lang	
Julian Wolf	2017	Physics - Atomic, Molecular, and Optical Physics	Senior Undergrad	HM	Yes	Yes	NA	No	Alex Lang	
Stephanie Cardenas	2016	Psychology		Winner!	Yes	Yes	NA	Yes	Alex Lang	Yes
Tommy Schuster	2016	Physics & Astronomy - Condensed Matter Physics	Senior Undergrad	Winner!	Yes	Yes	NA	No	Alex Lang	
Alexandra Brumberg	2016	Chemistry - Chemical Structure, Dynamics, and Mechanism	Senior Undergrad	Winner!	Yes	Yes	NA	No	Alexandra Brumberg	
Carl Fields	2016	Astrophysics	Senior Undergrad	Winner!	Yes	Yes	NA	Yes	Carl Fields	Yes
Christian Cazares	2016	Life Sciences - Neuroscience	Senior Undergrad	Winner!	Yes	Yes	NA	Yes	Christian Cazares	
Olivia Harper Wilkins	2016	Chemistry - Astrochemistry		Winner!	Yes	Yes	NA	Yes	Alex Lang	Yes
Kristen Garcia	2016	Electrical Engineering	First Year Grad	Winner!	Yes	Yes	NA	Yes	Alex Lang	Yes
Aditya Dhumuntarao	2016	Theoretical Physics	Senior Undergrad	Winner!	Yes	Yes	NA	No	Alex Lang	Yes
Katharine Greco	2016	Engineering- Chemical	Senior Undergrad	Winner!	Yes	Yes	NA	No	Alex Lang	
Jeremy Tran	2016	Chemistry - Chemical Synthesis	First Year Grad	Winner!	Yes	Yes	NA	No	Alex Lang	

NASA Earth and Space Science Fellowship (NESSF)

NASA Earth and Space Science Fellowship (NESSF) program: A program that supports graduate students in basic and applied research in Earth science and space science. Awards of $45,000 per year are made for up to three years. More information and application instructions can be found at http://solicitation.nasaprs.com/open by searching for NESSF. This opportunity is typically posted in early November and proposals are due in early February.

- Due: Feb. 2019
- https://science.nasa.gov/researchers/sara/fellowship-programs#gradops
- also: https://nspires.nasaprs.com/external/solicitations/summary.do?method=init&solId=%7B1A7F0A8C-1126-EA39-6584-10DBD500C8AC%7D&path=closedPast
- 3 years, max of $45k per year, $ for tuition to university
- Can apply during any year of graduate work or as a senior undergraduate
- No restrictions on citizenship, but US Citizens / permanent residents preferred
- *Proposal call not out yet, details limited*
- Proposal budget, proposed research statement (max 6 pages), CV for advisor and student, letter of recommendation from proposed advisor, transcripts
- Eligible fields:
  - Earth Science
  - Heliophysics
  - Planetary Science
  - Astrophysics

NASA Space Technology Research Fellowships (NSTRF)

This call for graduate student fellowship applications, entitled NASA Space Technology Research Fellowships (NSTRF) – Fall 2018 (NSTRF18), solicits applications from individuals pursuing or planning to pursue master's (e.g., M.S.) or doctoral (e.g., Ph.D.) degrees in relevant space technology disciplines at accredited U.S. universities. NASA Space Technology Fellows will perform innovative space technology research and will improve America's technological competitiveness by providing the Nation with a pipeline of innovative space technologies.

- US Citizens / permanent residents. Admitted or enrolled in a graduate program
- Research at selected campuses and NASA centers
- Due: November 1, 2018
- https://nspires.nasaprs.com/external/solicitations/summary!init.do?solId={CF8E9FD7-BD49-FEB7-F5C7-BB7ECBB559CC}&path=open
- Also linked from:
    - https://science.nasa.gov/researchers/sara/fellowship-programs#gradops

NASA Fellowships to support underrepresented minorities

- Linked from: https://science.nasa.gov/researchers/sara/fellowship-programs#gradops
- The National Consortium for Graduate Degrees for Minorities in Engineering and Science, Inc. Fellowship: GEM assists underrepresented minority students in obtaining M.S. degrees in engineering and Ph.D. degrees in engineering and the natural and physical sciences.
  - http://www.gemfellowship.org
  - *"GEM is a network of leading corporations, government laboratories, top universities, and top research institutions that enables qualified students from underrepresented communities to pursue graduate education in applied science and engineering."*
  - Must be US Citizen of permanent resident and admitted into a GEM Member University (UConn is one)
  - Ph.D. Engineering/Science Fellows receive*:
    - $16,000 stipend in the first academic year of the GEM Fellowship
    - GEM Member University provides a living stipend up to the 5th year of PhD program, equivalent to other funded doctorate students in the department
    - a minimum of one paid summer internship with a GEM Employer Member
    - full tuition and fees at a GEM University Member
- NASA's Minority University Research and Education Project and other competitive programs announce when applications open for fellowships and scholarships for graduate and undergraduate students from the United States for study in the US at: https://intern.nasa.gov/. **Not currently open**, check here for updates: https://nspires.nasaprs.com/external/solicitations/summary.do?method=init&solId={1C02074F-EDF4-7E23-2C21-165ECC9008FB}&path=closedPast.

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Connecticut Space Grant Consortium

- Lots of opportunities for small $ for undergraduates and graduate students
- Read more here:
  - http://ctspacegrant.org/funding-programs/student-opportunities/fall-2018-student-call

Student Programs

The following is a summary of grant and scholarship awards that will be issued during our Fall 2018 award cycle. For more information about these funding opportunities please visit our Student Programs Request for Proposals (Updated May 2018). To complete an application please visit our Forms page.

NASA CTSGC Fall 2018 Call for Proposals

Award	Audience	Anticipated Number of Awards	Award Amount	Application Due Date*	Awards Announced
Undergraduate Scholarship	Student (undergraduate at a 4-year institution)	8	$5,000	10/3/18	11/2/18
Community College Scholarship	Student (community college)	8	$1,500	10/3/18	11/2/18
Community College Transfer Scholarship	Student (undergraduate at a 4-year institution who began at a community college)	2	$5,000	10/3/18	11/2/18
Graduate Research Fellowship	Student (graduate)	3	up to $8,000	10/3/18	11/2/18
Undergraduate Research Fellowship	Student (undergraduate)	7	up to $5,000	10/3/18	11/2/18
Project Grant	Student	5	up to $1,000	10/3/18	11/2/18
Student Travel	Student	5	up to $1,000	10/3/18	11/2/18
Community College Quadcopter Challenge	Faculty and student (community college)	5	up to $8,000 ($2,000 for faculty advisor, $1,000 for each student [up to 5], $1,000 in supplies)	10/29/18	11/5/18

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