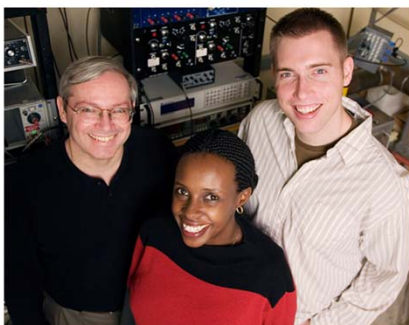


Applying for Graduate Research Fellowships



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Various Federal agencies support graduate research in physics*

National Science Foundation

DOE Office of Science

National Defense Science & Engineering

National Institutes of Health

DOE National Nuclear Security Admin

National Institute of Standards & Technology

DOE Computational Science

***Most federal programs support only US citizens, nationals,
or permanent residents**



URLs for various fellowship application instructions and information:

NSF: http://www.nsfgrfp.org/how_to_apply

DOE Office of Science: <http://scgf.orau.gov/overview.html>—**but no fellowship program has been announced for this year**

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

NIH Traineeships: <http://grants.nih.gov/training/nrsa.htm>

DOE National Nuclear Security Administration Stewardship Science Graduate Fellowship Program (high-energy density physics, nuclear science, or properties of materials under extreme conditions) <http://www.krellinst.org/ssgf/>

NIST: <http://www.nistfellows.umd.edu/announcements.html#grad> AND
<http://www.colorado.edu/nistfellows/>

DOE-CSGR: <https://www.krellinst.org/doecsgf/application/>

N.B. Almost all graduate research fellowships sponsored by the U.S. government require that applicants be U.S. citizens, nationals, or permanent residents. A “national” is someone who was born in one of the U.S. territories, e.g., Puerto Rico, the U.S. Virgin Islands, Guam, and American Samoa. A “permanent resident” is someone who has been issued a USCIS Form I-551, giving him or her the right to live and work in the United States on a permanent basis. If you hold an F-1 visa, you are not a “permanent resident,” even if you live in the U.S. year-round.

Many private foundations also support graduate research

American Association of University Women

National GEM Consortium/PhD Science Fellows

Woods Hole Oceanographic Institution

Hertz Foundation

Ford Foundation

National Physical Science Consortium

And some corporations

Intel

<https://www.grad.illinois.edu/fellowship/>

Xerox



AAUW: <https://www.grad.illinois.edu/fellowship/listing/2641> (for international women)

GEM: <http://www.gemfellowship.org/gem-fellowship> (for U.S. citizens PLUS underrepresented)

Woods Hole (geophysical fluid dynamics): <http://www.whoi.edu/page.do?pid=7941>

Hertz Foundation: <http://www.hertzfoundation.org/dx/fellowships/faqs.aspx>

Ford Foundation: http://sites.nationalacademies.org/PGA/FordFellowships/PGA_047958

National Physical Science Consortium:

<http://www.npsc.org/Applicants/Applicants/fellowshipinfo.html>

N.B. Intel fellowships are restricted to students within 18 months of graduation. Applicants must be nominated by their departments. See <https://www.grad.illinois.edu/fellowship/listing/3178>

N.B. Xerox fellowships are restricted to minority U.S. citizens or permanent residents. <http://www.xeroxstudentcareers.com/why-xerox/scholarship.aspx>

**Some graduate research fellowships *are*
available for international students**

**American Association of University Women
Howard Hughes Medical Institute**

...but these are the only ones I know of



AAUW: <https://www.grad.illinois.edu/fellowship/listing/2641> (for internationals)

HHMI: <https://www.grad.illinois.edu/fellowship/listing/3305> (Students **must be** nominated by the University; self-nominations are not accepted. Students in the physical and mathematical sciences, as well as the biomedical sciences, are eligible.)

First, determine if you're eligible

Citizenship

Pursuing graduate study in a supported field

Have **not completed more than the prescribed
limit of graduate study**

NSF—12 months



The rules are different for every major fellowship. Read the eligibility instructions carefully. Most programs have a FAQ that address specific eligibility questions. If you cannot find the answer to your questions in the online materials, *contact the organization—early.*

Applications are usually judged on two criteria

Demonstrated intellectual merit

- Strength of your academic record**
- Proposed plan of research**
- Description of previous research experience**
- References**
- GRE General and Subject test scores**
- Appropriateness of chosen institution relative to proposed research plan**

Your promise to fulfill societal goals

- Integrate research and education**
- Promote diversity and broaden opportunities to underrepresented groups**
- Enhance scientific and technical understanding**
- Contribute to economic development or national security**



For the NSF Graduate Research Fellowship, the “broader impacts” criterion is critical.

Funding decisions are made on the margins in highly competitive programs. Assume every agency will have two to three times more scientifically meritorious proposals than they can fund. If the science is equal, the decisions are made on the basis of other parts of the proposal—the parts you may think are not very important or worth spending time on. They are!

A fellowship application is not a scientific paper

Think “prospectus,” not “PRL”



Why should the funder invest in you?



Your objective in applying for a fellowship is to convince a funder that the ~\$150k they're going to invest in you will be money well spent.

You have the requisite skills, experience, and desire to succeed.

You are excited about research and understand that it is different from taking classes.

You are versatile and creative.

You have the discipline to persist when the going gets tough.

Most applications are submitted online

Applications consist of multiple parts that must be submitted electronically

The Elliott equation:

$$t = 3n + \epsilon, \quad [1]$$

where t is the time required, n is the number of hours you think it will take, and ϵ is not necessarily trivial

Do not wait until the last minute!



Some of the interfaces are not very user friendly and can become unstable under heavy loads (i.e., right before the deadline, when the other 1500 applicants are trying frantically to upload their applications, too).

Some require pre-registration before you can begin an application.

Some require you to complete everything in one session.

Get familiar with the submission portal well before the deadline.

Applications often require submission of multiple parts

- “Personal profile” (form)
- Education and work experience (form)
- Planned graduate program (form)
- Personal statement (2 pp.)
- Previous research experience (2 pp.)
- Proposed plan of research (2 pp.)
 - Description of research topics you plan to pursue
 - How you became interested in these topics
- Letters of reference (three)
- Transcripts or GRE scores



The parts shown here are required for the National Science Foundation Fellowships. Most other graduate fellowship applications have some subset of these requirements.

Be sure to ask for your letters of reference *early*, and give your recommenders the information they need to write a strong letter for you. Send them copies of your personal statement and proposed plan of research so they can make their letters explicit and on point. (Ask them for their feedback on how to improve the statements, too!) Tell them how and where to submit the letter and what the deadline is. Send them a gentle reminder the week before the letter is due.

Upcoming deadlines

- **Xerox Technical Minority—Sept 30**
- **Hertz Foundation—Oct 31**
- **National GEM Consortium—Nov 11**
- **HHMI, campus deadline—prob. Nov 14**
- **NSF Graduate Fellowship—prob. Nov 17, but check!**
- **National Physical Science Consortium—Nov 30**

Ask Celia—cmelliot@illinois.edu; Room 215 LLP



Some programs have not posted their 2011/12 calls for applications as of August 21, including NSF. Keep checking their websites for the announcements.