

A Rough Guide to Awards and External Funding Opportunities



**Stefano Profumo, Michael Dine and Jennifer Hild
UC Santa Cruz , Department of Physics
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1. WHY TO APPLY FOR AWARDS AND EXTERNAL FUNDING OPPORTUNITIES

- ✓ A great career opportunity for you (and your CV!)
- ✓ Fellowships can pay for your stipend, tuition, travel and research expenses
- ✓ Independence of research
- ✓ Free your time for research (instead of, e.g., TA'ing, summer jobs etc.)

2. TIPS ON HOW TO WIN A GRADUATE FELLOWSHIP

[see: <http://chronicle.com/jobs/news/2006/05/2006051101c/printable.html>]

- ✓ **Make time**
As with any writing project, applying for a fellowship demands a substantial, polished, well-thought-out product: cramming at the last minute will not produce your best work.
- ✓ **Do your homework**
Search for the best opportunities out there; ask to your advisor, other faculty members, the graduate student office. Once you've decided which fellowships to apply for, it's time to gather information: which topics are most often supported? and which rarely get the nod? Read all of

the material supplied by the grant agency. Tailoring your proposal to the interests of the agency or foundation is critical. Parse the call for proposals thoroughly, and make sure your proposal deals with all the criteria. Read as many successful proposals as you can find. Hit up previous winners in your department for their proposals, and ask for their advice.

✓ **Narrow your focus**

A few students enter graduate school knowing exactly what they want to study. If you are one of them, build on what you have already done. Many students don't have such focus, although most have some idea of the areas that interest them. Find out which are the hot topics in your areas of interest. Search the literature and ask the faculty, postdocs and senior grad students.

✓ **The Idea**

It can be of your own design (Finding a question that follows logically from an existing line of inquiry is a great way to go, e.g. reading the “Conclusions” of research papers). An equally valid approach is to look to your adviser or another professor for a topic, or merely for guidance on a topic you've identified.

You need to be able to boil down your research goal to a specific question you propose to ask, rather than discussing a general examination of a topic. Explicitly laying out your approach as a test of null and alternate hypotheses will force you to clarify your thinking about the research you plan to pursue, and it will help you explain it unambiguously.

✓ **The style**

Write clearly. Minimize your use of jargon. Format appropriately: underline your hypothesis, italicize key points, put big ideas in boldface type, use bullets – but don't overuse! Use figures and graphics where appropriate: a strong visual element can be well worth the words you trade for it.

✓ **It's about you!**

Don't forget that most graduate-student fellowships are intended to support a person, not an actual product. Your main task is to demonstrate that you can conceptualize and present a strong potential research path: agencies are usually fine if you later switch your research topic. Outline a “doable” research program, relevant to the grant agency's goals. Try to demonstrate a clear knowledge of the subject.

✓ **Drafts!**

Rewriting again and again your proposal will tighten your prose, clarify your ideas, and polish your proposal. It will also help you ferret out typos. Ideally, faculty/researchers in your field will carefully read and improve your drafts. Others who are not as expert (friends, family, and peers) can evaluate your writing and logic: if what you are trying to say is unclear to a fellow student, chances are it will be unclear to the evaluation committee!

✓ **Recommenders**

It's important to offer evidence that your work has the support of your department: Grant agencies want to know that faculty members are invested in your success. It doesn't hurt if your

recommenders are prominent in your field of interest. However, it is more important to have someone in your corner who writes well and wants to be your champion than to choose a big name who is not invested enough in your success to put the effort into writing a glowing appraisal. Give your recommenders copies of your draft proposal well before they write their letters. Better yet, give them a copy of it well before it is due, and solicit their feedback. The more they invest in you, particularly if you might work in their research group, the better off you are.

✓ **Apply!**

The odds may seem against you, but this *is* a worthwhile exercise. Accept that your chances might be slim (everybody's are!), and approach the process as an opportunity to explore an idea that you actually want to pursue, without attachment to the notion of a big payoff. However your fellowship application turns out, you will gain valuable experience and a much deeper understanding of a field of interest to you. You might also get a dissertation topic out of it, or, equally valuable, the knowledge that you don't want to explore that topic. You will also gain a template for future proposals. Some fellowships will even send you copies of reviewer's comments, which will help you recraft your proposal for resubmission.

And, maybe, you will be rewarded by a fellowship...

3. REFERENCES AND OTHER AWARDS AND FUNDING OPPORTUNITIES

General Websites/Useful resources:

- **UCSC-Physics Database of Extramural Funding Opportunities**

The database contains a list of several extramural funding opportunities, including (1) Name of the fellowship/funding opportunity, (2) Relevant research field, (3) Eligibility criteria, (4) Miscellaneous Information, (5) Deadline and (6) Website for more information and for application.

You can download the database at http://scipp.ucsc.edu/~profumo/service/grad_fund.htm

- GrantsNet [<http://sciencecareers.sciencemag.org/funding>]
- NSF GRFP [<http://www.nsfgradfellows.org/>]
- NASA [<http://university.gsfc.nasa.gov/programs/graduate.jsp>]
- Grants.gov [<http://www.grants.gov/>]
- The National Academies, Fellowships Off. [<http://www7.nationalacademies.org/fellowships/>]

Selected Funding Opportunities

(a) *The NSF Graduate Research Fellowship Program*

- **Description:** “The National Science Foundation aims to ensure the vitality of the human resource base of science, technology, engineering, and mathematics in the United States and to reinforce its diversity by offering approximately 1,100 graduate fellowships in this competition. The Graduate Research Fellowship provides three years of support for graduate study leading to research-based master’s or doctoral degrees and is intended for students who are in the early stages of their graduate study.”

The Graduate Research Fellowship stipend currently is \$30,000 for a 12-month tenure period; The cost of education allowance currently is \$10,500 per tenure year. Fellows are allowed an additional one-time \$1,000 International Research Travel Allowance.

All awards will be for a maximum of three years usable over a five-year period.

The anticipated award date is late March 2008.

- **Deadline:** For applicants (Physics & Astronomy): November 10, 2008
Reference Submission deadline: December 1, 2008
- **Who can apply:** restricted to citizens, nationals, or permanent resident aliens of the US; in addition: “Individuals are typically eligible to apply during the senior year of college, after graduating from college but prior to entering graduate school, during the first year of graduate school, or prior to completing the first term of the second year of graduate school.”
- **What you need to prepare:** The application is fully electronic, and can be accessed at <http://www.fastlane.nsf.gov/grfp/>. It includes three 2-pages essays on: Personal statement (personal, professional, and educational experiences; don’t forget the “broader impact” requirement!), Previous Research Experience and Proposed Plan of Research.
- **What if you don’t get it:** “The NSF accords Honorable Mention to meritorious applicants who do not receive fellowship awards. This is considered a significant academic achievement nationwide and provides access to cyber infrastructure resources through the TeraGrid for a period of one year following notification of the Honorable Mention.”
- **Useful Websites:**
<http://www.nsf.gov/pubs/2007/nsf07576/nsf07576.pdf>
https://www.fastlane.nsf.gov/grfp/html/GRFP_Applicant_User_Guide.pdf

(b) Department of Energy Computational Science Graduate Fellowship [Krell Fellowship]

Info: \$32,400 stipend, \$1,000/yr research allowance, \$2,500 for computer support

Requirements: US citizens, first and second year grad students

Website: <http://www.krellinst.org/csgf/index.shtml>

Deadline: January 09 (currently unspecified)

(b) Department of Energy Stewardship Science Graduate Fellowship [Krell Fellowship]

Info: \$32,400 stipend, \$1,000/yr research allowance, all tuition and fees; Fields: high energy density physics, low-energy nuclear science, properties of materials under extreme conditions, hydrodynamics

Requirements: US citizens, first and second year grad students

Website: <http://www2.krellinst.org/ssgf/index.shtml>

Deadline: January 09 (currently unspecified)

(c) Harriett G. Jenkins Predoctoral Fellowship Program [NASA]

Info: full-time underrepresented (women, minorities, and persons with disabilities) graduate students in science, technology and education with financial support for their education in NASA-related disciplines. Students are selected for a fellowships that include an annual 10-week, hands-on research experience at the Jet Propulsion Laboratory (JPL) or a NASA Center. Fellowship tenure is three years for doctorate-seeking candidates \$16,000 for the time spent at a NASA facility during the summer via a research mini-grant . There is additional support for tuition (up to \$8500) and travel expenses.

Requirements: for (US citizen) women, ethniv minorities, seniors, master's students

Website: <http://university.gsfc.nasa.gov/programs/jpfp.jsp>

Deadline: February 2, 2009

(d) NASA Graduate Student Researchers Program (GSRP)

Info: fellowship support on research projects of interest to the student and GSFC mentor; 1yr renewable up to 3 years.

Requirements: US citizens

Website: <http://university.gsfc.nasa.gov/programs/gsrp.jsp>

Deadline: Not specified, likely March 09

(e) National Defense Science and Engineering Graduate (NDSEG) Fellowship

Info: DoD annually supports 8,000 graduate students in fields important to defense needs.

Requirements: US citizens

Website: <https://www.asee.org/ndseg/>

Deadline: January 5, 2009

(f) Hertz Fellowships

Info: Option 1 - Five Year Hertz \$31,000/ 9-month personal stipend, Full tuition equivalent, Renewable for up to 5 years; Option 2 - Five-Year Coordinated Hertz Period - Two Years \$36,000/ 9-month personal stipend Full tuition equivalent

Requirements: restricted to US citizens

Website: <http://www.hertzfoundation.org/>

Deadline: 10/31/09

(g) Ford Foundation Diversity Fellowships

Info: Online application

Requirements: US citizens, outstanding academic record

Website: <http://www7.nationalacademies.org/fordfellowships/>

Deadline: 11/14/09

(Very partial list of) Local Recipients of Graduate Fellowships you can contact:

- ✓ Tesla Jeltema (Astronomy Postdoc, former NSF Fellow at MIT), tesla@ucolick.org
- ✓ Gregory Novak (Astronomy Grad Student, Krell Fellow), novak@ucolick.org

(Very partial list of) List of Other Fellowships/Award opportunities:

AAAS Science & Technology Policy Fellowships [Deadline: December 20]

Alexander von Humboldt Fellowships

American Association of University Women

Black Alliance for Educational Options Scholarships

Charlotte W. Newcombe Doctoral Dissertation Fellowships

Fulbright Fellowship programs

Department of Defense National Defense Science and Engineering Graduate Fellowship Program

Easley National Scholarship Program

Gates Millennium Scholars Program

GE and LuLac Scholarship Funds

GEM -- National Consortium in Engineering and Science For Graduate Degrees for Minorities

Heinz Dissertation Award

Hispanic College Fund

Hispanic Scholarship Fund

International Research and Exchanges Board

International Students Scholarships & Aid Help

Josephine de Kármán Fellowships

Madison and Lila Self Graduate Fellowship

Marshall Sherfield Scholarships

Murray Research Center at Radcliffe College

NASA Bioastronautics and Fundamental Space Biology Postdoctoral Research Program

Nature Jobs

National Physical Science Consortium Graduate Fellowships For Minorities and Women in Physics

NSF Integrative Graduate Education and Research Traineeships Program

NSF Other Graduate and Postdoctoral Support

NSF Minority Postdoctoral Research Fellowships

National Security Education Program

Northeast Consortium for Faculty Diversity (Visiting Dissertation Fellowships)

Oak Ridge Institute for Science and Education
Pew Charitable Trusts Education Division
Population Council Fellowships
Presidential Freedom Scholarships
President's Postdoctoral Fellowship Program
Project 1000
Public Policy and International Affairs Fellowship (at AED)
Rhodes Scholarships at Oxford
Santa Fe Institute
Sarnoff Endowment
Semiconductor Research Corporation
Social Science Research Council
Spencer Foundation
Student Inventors Scholarships
Student Video Scholarships
Thurgood Marshall Scholarship Fund
Truman Foundation
Union Sponsored Scholarships and Aid
U.S. Department of Energy High-Performance Computer Science Fellowship
U.S. Department of Energy National Nuclear Security Administration Stewardship Science Graduate Fellowship
U.S. Department of Homeland Security Undergraduate Scholarships and Graduate Fellowships <http://www.epa.gov/>
United States Gold Association Fellowship
University of Central Florida Nanoscience Technology Center Fellowships
Venture Scholars
Whitaker Foundation
Woodrow Wilson National Fellowship Foundation