

Applying for Federal Fellowships

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September 23, 2010

Slides will be available on the Department's web page for graduate fellowships

Federal Fellowships

- ▶ Very prestigious
- ▶ Extremely competitive
- ▶ Provide independence to awardee
- ▶ Make awardee highly competitive in post-PhD job market
- ▶ Lots of \$\$,\$\$\$!
- ▶ Most applications due between November and January.

Available Fellowships

- ▶ NSF Graduate Research Fellowship Program (GRFP):
http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=6201,
<http://www.nsfgrfp.org>
- ▶ National Defense Science and Engineering Graduate Fellowship (NDSEG): <http://ndseg.asee.org/>
- ▶ DOE Computational Science Graduate Fellowship (CSGF):
<http://www.krellinst.org/csgf/index.shtml>
- ▶ DOE Office of Science Graduate Fellowship (SCGF):
<http://scgf.orau.gov>
- ▶ American Society for Engineering Education SMART Scholarship:
<http://smart.asee.org>
- ▶ National Academies Research Associateship Programs (RAP):
<http://sites.nationalacademies.org/pga/rap>

Eligibility

- ▶ NSF GRFP: U.S. citizens or nationals, or permanent resident aliens by the application deadline.
- ▶ NDSEG: U.S. citizens or nationals
- ▶ DOE SCGF: U.S. citizens.
- ▶ DOE CSGF: U.S. citizens or permanent resident aliens.
- ▶ SMART: U.S. citizens

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- ▶ SMART: U.S. citizens
- ▶ Other conditions:
 - ▶ Full time students.
 - ▶ Some require applicant be a senior undergraduate or in the first two years of graduate studies.
 - ▶ SMART fellowship awardees must be able to participate in summer internships at DoD laboratories and be willing to accept post-graduate employment with the DoD.
- ▶ **Read the application materials very carefully!**

Application Materials

- ▶ Each application has own set of formats, rules and requirements, online application page.
- ▶ Usually require three letters of recommendation.
- ▶ CV
- ▶ Description of proposed research
- ▶ May require personal statement, research experience.
- ▶ Lengths vary dramatically (2 pages for NSF, 300 words for DOE).

Planning Your Applications

- ▶ Plan ahead, give yourself enough time to complete each application (≥ 1 month).
- ▶ Give letter writers enough time to write their letters. They will be besieged with letter requests in late Fall and early Spring.
- ▶ High GPA is important, but not necessarily a pre-requisite.
- ▶ Have a compelling research plan. Work closely with your advisor.
- ▶ Revise, revise, revise.
- ▶ Essays must appear to be written by you, not your advisor! (Don't take Project Summary from advisor's NSF application.)
- ▶ You can reuse content across applications, but it is best to write each application from scratch because of enormously different length constraints.

Departmental Resources: Many Awardees

- ▶ NSF GFRP
 - ▶ Meg Dickey-Kurdziolek (2006, Deborah Tatar)
 - ▶ Anamary Leal (2010, Doug Bowman)
 - ▶ Chris Poirel (2010, T. M. Murali)
 - ▶ Ricardo Quintana-Castillo (2008, Manuel Prez-Quiones)
 - ▶ Ashley Robinson (2007, Francis Quek)
 - ▶ Greg Wilson (2010, Scott McCrickard)
- ▶ NDSEG
 - ▶ John Linford (2007, Adrian Sandu)
 - ▶ Thomas Scogland (2009, Wu Feng)
- ▶ ASEE SMART: Patrick Butler (2010, Naren Ramakrishnan).

Departmental Resources: Reviews

- ▶ In 2009, at least two faculty reviewed each NSF GFRP application.
- ▶ We will continue the practice this year.
- ▶ We will request at least one previous winner to review each application.
- ▶ We will extend reviews to other applications depending on demand.

Timeline

- ▶ NSF GFRP: November 15, 2010 (Interdisciplinary Fields of Study), November 18, 2010 (CS)
- ▶ DOE SCGF: late November 2010 (was November 30, 2009 for the last cycle)
- ▶ SMART: December 1, 2010
- ▶ NDSEG: December 17, 2010
- ▶ DOE CSGF: January 11, 2011

Timeline

- ▶ Submit draft NSF GFRP applications: Friday, October 15, 2010.
- ▶ Reviews for NSF GFRP applications returned: Monday, October 25, 2010.
- ▶ NSF GFRP: November 15, 2010 (Interdisciplinary Fields of Study), November 18, 2010 (CS)
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- ▶ NDSEG: December 17, 2010
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Information Session for the NSF GRFP and Other Federal Fellowships

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September 23, 2010

Overview

- DOE Computational Science Graduate Fellowship
- DOE Office of Science Graduate Fellowship
- DOD National Defense Science and Engineering Graduate Fellowship
- **NSF Graduate Research Fellowship Program**

DOE Computational Science Graduate Fellowship (CSGF)

- <http://www.krellinst.org/csgf>
- Extremely competitive: $\sim 4\%$ of 531 applicants in 2010
- Requirements:
 - ▶ GRE Scores (preferred)
 - ▶ Transcripts
 - ▶ 3 Reference Letters
 - ▶ Lists of: Research Experience, Publications, Employment, Awards, Extracurricular
 - ▶ Plan of Study
 - ▶ 3 Essays (300 words):
 - ★ Field of Interest: "How will computational science spur advances in your field?"
 - ★ Program of Study: "How will your proposed coursework help you?"
 - ★ HPC and Research: "How will HPC improve your research?"

DOE Office of Science Graduate Fellowship (SCGF)

- <http://scgf.ornl.gov>
- Extremely competitive: 150 of 3,200+ applicants in 2010
- Requirements:
 - ▶ Transcripts
 - ▶ 3 Reference Letters
 - ▶ Top 10 Awards
 - ▶ 2 Essays:
 - ★ Personal Statement (1000 words): Describe academic career and relevant experiences.
 - ★ Proposed Plan of Research (1200 words): Specific structure, laying out your research goals and plans.

DOD National Defense Science and Engineering Graduate Fellowship (NDSEG)

- <http://ndseg.asee.org>
- Requirements:
 - ▶ GRE Scores
 - ▶ Transcripts
 - ▶ 3 Reference Letters
 - ▶ Lists of: Research Experience, Publications, Employment, Awards, Extracurricular
 - ▶ Summary of Goals (3,000 **chars**): Describe research interests, long term goals and how you plan to accomplish them.

NSF Graduate Research Fellowship Program

- <http://www.nsfgrfp.org> – “unofficial” information resource
 - ▶ <http://www.nsf.gov/grfp> – official announcement
 - ▶ <https://www.fastlane.nsf.gov/grfp> – where you actually submit
- Requirements:
 - ▶ **NO GRE Scores in 2010**
 - ▶ Transcripts
 - ▶ 3 Reference Letters (advisor, research mentor, employer)
 - ▶ 3 Essays (2 page each):
 - ★ Personal Statement
 - ★ Research Experience
 - ★ Plan of Research

NSF GRFP Essays

Intellectual Merit:

Broader Impacts:

NSF GRFP Essays

Intellectual Merit:

- “How important is the proposed activity to advancing knowledge and understanding within its own field or across different fields?”
- “How well qualified is the proposer to conduct the project?”
- “How well conceived and organized is the proposed activity?”
- “Is there sufficient access to resources?”

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Broader Impacts:

- <http://www.nsf.gov/pubs/2002/nsf022/bicexamples.pdf>
- How well does the activity advance discovery and understanding while promoting teaching, training and learning? [Poster Presentations](#)
- How well does the proposed activity broaden the participation of underrepresented groups? [AWC volunteer](#)
- What may be the benefits of the proposed activity to society?
- **Try to stress BI as much as possible, IM will show.**

NSF GRFP Essays

Personal Statement:

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Personal experience?

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- Discuss your most important research or work experiences (2 or 3).
- Preferably use the last experience to detail current research.

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Plan of Research

- Formal: Title, Keywords, Sections, Literature Citations.
- Sec.: Intro, Hypothesis, **Research Plan**, Anticipated Results, IM, BI
 - ▶ Explain how your chosen coursework enhances your research plan.
- Clearly label and address each required section.

NSF GRFP Essays

Words of Wisdom:

- Start early, don't procrastinate. It will be worth it.
- Draft, Draft, Draft . . .
- Use version control or store revisions of each draft.
- Make every word count – these essays are short.
- Reinforce **don't reiterate**.
- For NSF
 - ▶ Stress the broader impacts. The intellectual merit is bound to show.
 - ▶ Discuss your coursework to enhance research plan, especially if you are conducting interdisciplinary research.
- **Use the CS reviews being organized by Murali.**

Thanks

Good Luck

<https://bioinformatics.cs.vt.edu/~poirel/presentations>

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