



National Science Foundation  
4201 Wilson Boulevard  
Arlington, Virginia 22230

Dear Colleague:

On behalf of the Division of Graduate Education (DGE) and the Division of Research, Evaluation, and Communication (REC) of the Directorate for Education and Human Resources (EHR) we call your attention to an opportunity within the Research on Learning and Education (ROLE) program <http://www.nsf.gov/pubs/2003/nsf03542/nsf03542.htm> to request support for research projects on graduate education.

We encourage proposals for research that can serve as a basis for strengthening graduate education in science, technology, engineering, and mathematics (STEM) disciplines as well as graduate education in STEM education. Successful proposals will demonstrate expertise in education research and/or social science research methods as well as knowledge about STEM graduate education.

While proposals on graduate education have always been welcome in ROLE, there have been few proposals submitted on this topic. The objective of this activity is to build a research community that can more effectively address current trends in STEM graduate education such as:

- emerging STEM research fields, particularly cross-disciplinary ones;
- changing expectations for STEM professionals;
- the need to broaden the sectors of the nation's population that aspire to and participate in STEM graduate education;
- opportunities offered by emerging international cooperation; and
- opportunities offered by emerging technologies.

We anticipate proposals that will address these topics, as well as the examples below, but recognize the field may have additional excellent topics for research:

- mechanisms to redesign graduate education in response to changes in traditional disciplines, efforts to enhance curricula and learning, and the development of new approaches within STEM research fields;
- broad outcomes from the graduate experience including interdisciplinary education; partnerships with industry, K-12 schools, and informal education settings; and the communication of the societal benefits of STEM research;
- identification of successful graduate education models in various STEM fields, definitions of what constitute successful outcomes, and the factors associated with these outcomes;
- factors contributing to enhanced retention of students, completion of their degrees, and successful placement in STEM careers, particularly for students from groups underrepresented in STEM fields.

We encourage small projects (e.g., workshops, exploratory research, planning and design projects) for one year generally not to exceed \$100,000 and large projects for 3 years not to exceed \$1.8 million in total award size. Small projects will permit investigators to develop rigorous research designs, techniques, and methods and to forge partnerships with researchers representing appropriate disciplines and areas of expertise. We anticipate offering this activity for a minimum of two years. Proposers should review the ROLE program solicitation to ensure that eligibility requirements are met.

Investigators are encouraged to contact DGE program officers to discuss graduate topics of interest and ROLE program officers to discuss research approaches and requirements of the ROLE program.

DGE Program Officers:

- Eugene Brown: (703) 292-5302, [efbrown@nsf.gov](mailto:efbrown@nsf.gov)
- Terry Woodin: (703) 292-8697, [twoodin@nsf.gov](mailto:twoodin@nsf.gov)

REC/ROLE Program Officers:

- James Dietz: (703) 292-5156, [jdietz@nsf.gov](mailto:jdietz@nsf.gov)
- Janice Earle, (703) 292-5097, [jearle@nsf.gov](mailto:jearle@nsf.gov)
- Walter Ermler: (703) 292-5161, [wermmler@nsf.gov](mailto:wermmler@nsf.gov)
- Finbarr Sloane: (703) 292-5146, [fsloane@nsf.gov](mailto:fsloane@nsf.gov)
- Gregg Solomon: (703) 292-8333, [gesolomo@nsf.gov](mailto:gesolomo@nsf.gov)
- Larry E. Suter: (703) 292-5144, [lsuter@nsf.gov](mailto:lsuter@nsf.gov)
- Elizabeth VanderPutten: (703) 292-5147, [evanderp@nsf.gov](mailto:evanderp@nsf.gov)

We look forward to reviewing innovative and competitive proposals.

Sincerely,

Bianca L. Bernstein  
Director, Division of Graduate Education

Barbara M. Olds  
Director, Division of Research, Evaluation, and Communication

#### Useful References:

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Commission on Professionals in Science and Technology (CTSP) <http://www.cpst.org/hrdata/pages/default2.cfm>

In Pursuit of a Diverse Science, Technology, Engineering, and Mathematics Workforce: Recommended Research Priorities to Enhance Participation by Underrepresented Minorities. [http://ehrweb.aaas.org/mge/Reports/Report1/AGEP/AGEP\\_report.pdf](http://ehrweb.aaas.org/mge/Reports/Report1/AGEP/AGEP_report.pdf)

National Research Council, National Academy Press. (1998). *Trends in the Early Careers of Life Scientists, Office of Scientific and Engineering Personnel*. Summary available online at: <http://books.nap.edu/catalog/6244.html>

NSF Workshop on the Future of Graduate Education, March 19-20, 2003  
<http://www.ehr.nsf.gov/dge/Innovmtg.htm>

Nyquist, J. N. (2002) *The Ph.D.: A tapestry of change for the 21st century* Change 34(6), 12-20.

Re-envisioning the Ph. D. <http://www.grad.washington.edu/envision/>

#### ABOUT THE NATIONAL SCIENCE FOUNDATION

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The National Science Foundation (NSF) funds research and education in most fields of science and engineering. Awardees are wholly responsible for conducting their project activities and preparing the results for publication. Thus, the Foundation

does not assume responsibility for such findings or their interpretation.

NSF welcomes proposals from all qualified scientists, engineers and educators. The Foundation strongly encourages women, minorities and persons with disabilities to compete fully in its programs. In accordance with Federal statutes, regulations and NSF policies, no person on grounds of race, color, age, sex, national origin or disability shall be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving financial assistance from NSF, although some programs may have special requirements that limit eligibility.

*Facilitation Awards for Scientists and Engineers with Disabilities (FASSED)* provide funding for special assistance or equipment to enable persons with disabilities (investigators and other staff, including student research assistants) to work on NSF-supported projects. See the GPG Chapter II, Section D.2 for instructions regarding preparation of these types of proposals.

The National Science Foundation promotes and advances scientific progress in the United States by competitively awarding grants and cooperative agreements for research and education in the sciences, mathematics, and engineering.

To get the latest information about program deadlines, to download copies of NSF publications, and to access abstracts of awards, visit the NSF Website at <http://www.nsf.gov>

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or telephone: (703) 292-7827
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