



**NATIONAL SCIENCE FOUNDATION
4201 WILSON BOULEVARD
ARLINGTON, VIRGINIA 22230**

NSF 15-055

Dear Colleague Letter: Graduate Education in Chemistry

March 18, 2015

Dear Colleagues:

A strategic goal of the National Science Foundation (NSF) is to “stimulate innovation and address societal needs through research and education”.¹ Included in this goal is work to foster a “well-prepared knowledge workforce... steeped in the expanding knowledge base and the advanced technology being generated by fundamental research activities”.¹ NSF addresses these workforce needs “by seamlessly integrating the education of future scientists, engineers, and educators into the broad portfolio of research that we support”.¹ In this context, the NSF Chemistry Division facilitates the research training of graduate students in Masters and Doctoral programs as a part of its fundamental research activities, primarily in the form of graduate research assistantships attached to individual investigator awards or to Centers for Chemical Innovation. Support for graduate education also comes through NSF traineeships NRT (NSF Research Traineeship Program)² and fellowships to individual students GRFP (Graduate Research Fellowships Program).³ The NSF also actively fosters efforts to broaden participation in graduate research in the STEM disciplines through its AGEP (Alliances for Graduate Education and the Professoriate) program.

Private foundation and professional society reports have discussed effective modalities, structure, and content of graduate education in science and engineering. One example is a report by the American Chemical Society titled “Report on Advancing Graduate Education in the Chemical Sciences”⁴ that recommends significant changes in content and modes of support in the US. Other reports (Council of Graduate Schools “The Path Forward: The Future of Graduate Education in the United States”⁵, Carnegie Foundation “The Formation of Scholars: Rethinking Doctoral Education for the Twenty-first Century”⁶ assess the situation more broadly and provide recommendations as well. The NSF has recently established a Graduate Education Strategic Plan Task Group charged with preparing a five-year planning document around these issues across all of the science and engineering domains supported by the Foundation.

The Chemistry Division invites the community to help work on these issues by submitting proposals for conferences⁷ that assess the current status and develop plans for alternative approaches to research and graduate education in Chemistry. The programs fostered by these conferences could bring together educators and the research community to address the issues raised in the various reports, such as the content of the graduate curriculum, the appropriate mix of support modalities, and the possibilities of supporting graduate education in entirely new ways. Recommendations for possible changes to graduate education content or support in Chemistry might result from these conferences as could pilot projects for changes in graduate program content or graduate program support.

Proposers should first contact the cognizant Program Officers in Chemistry, Michelle Bushey or David

Rockcliffe, for guidance and further details.

Guidance on preparing and submitting conference proposals is found in Chapter II.D.9 the NSF Grant Proposal Guide: http://www.nsf.gov/pubs/policydocs/pappguide/nsf15001/gpg_2.jsp#IID9.⁷

For optimal consideration, proposals should be submitted by June 1, 2015.

POINTS OF CONTACT

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References

¹ NSF Strategic Plan for 2014-2018, "Investing in Science, Engineering and Education for the Nation's Future".

² National Science Foundation Research Traineeship (NRT) Program (NSF 15-548)
http://www.nsf.gov/publications/pub_summ.jsp?ods_key=nsf15548.

³ NSF Graduate Research Fellowship Program (GRFP, NSF 14-590)
http://www.nsf.gov/publications/pub_summ.jsp?ods_key=nsf14590.

⁴ "Advancing Graduate Education in the Chemical Sciences" *Full Report of an ACS Presidential Commission Submitted to ACS President Bassam Z. Shakhashiri on December 6, 2012*.
<http://www.acs.org/content/dam/acsorg/about/governance/acs-presidential-graduate-education-commission-full-report.pdf>.

⁵ Council of Graduate Schools and Educational Testing Service. (2010). *The Path Forward: The Future of Graduate Education in the United States. Report from the Commission on the Future of Graduate Education in the United States*. Princeton, NJ: Educational Testing Service.

⁶ G. E. Walker, et al., *The Formation of Scholars: Rethinking Doctoral Education for the Twenty-first Century*, The Carnegie Foundation for the Advancement of Teaching, Jossey-Bass, 2008.

⁷ Note: the National Science Foundation Grant Proposal Guide (GPG, NSF 15-001, http://www.nsf.gov/pubs/policydocs/pappguide/nsf15001/gpg_index.jsp) indicates that Proposals for Conferences also applies to workshops and symposia.