



# Challenges in Chemistry Graduate Education: A Workshop Summary

*Committee on Challenges in Chemistry Graduate Education, Board on Chemical Sciences, Board on Chemical Sciences and Technology, Division on Earth and Life Studies, National Research Council*

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Chemistry graduate education is under considerable pressure. Pharmaceutical companies, long a major employer of synthetic organic chemists, are drastically paring back their research divisions to reduce costs. Chemical companies are opening new research and development facilities in Asia rather than in the United States to take advantage of growing markets and trained workforces there. Universities, especially public universities, are under significant fiscal constraints that threaten their ability to hire new faculty members. Future federal funding of chemical research may be limited as the federal budget tightens. All of these trends have major consequences for the education of chemistry graduate students in U.S. universities.

To explore and respond to these intensifying pressures, the Board on Chemical Sciences and Technology held a workshop in Washington, DC, on January 23-24 2012, titled "Graduate Education in Chemistry in the Context of a Changing Environment." The workshop brought together representatives from across the chemical enterprise, representing leaders and future leaders of academia, industry, and government. The goal of the workshop was not to come to conclusions, but to have an open and frank discussion about critical issues affecting chemistry graduate education, such as the attraction and retainment of the most able students to graduate education, financial stressors on the current support model and their implications for the future model, competencies needed in the changing job market for Ph.D. chemists, and competencies needed to address societal problems such as energy and sustainability.

*Challenges in Chemistry Graduate Education: A Workshop Summary* is organized into six chapters and summarizes the workshop on "Graduate Education in Chemistry in the Context of a Changing Environment."

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