The Board on Higher Education and Workforce
Committee on Revitalizing Graduate STEM Education for the 21st Century
Statement of Task

An ad hoc committee, under the auspices of the Board on Higher Education and Workforce (BHEW) and the Committee on Science, Engineering, and Public Policy (COSEPUP), and liaising with the Government-University-Industry Research Roundtable (GUIRR) and Teacher Advisory Council (TAC), will lead a study of STEM graduate-level education in the U.S., revisiting and updating a similar COSEPUP study completed 20 years ago, Reshaping the Graduate Education of Scientists and Engineers. Specific tasks will include:

- Conduct a systems analysis of graduate education, with the aim of identifying policies, programs and practices that could better meet the diverse education and career needs of graduate students in coming years (at both the master’s and Ph.D. levels—understanding the commonalities and distinctions between the two levels), and also aimed at identifying deficiencies and gaps in the system that could improve graduate education programs.
- Identify strategies to improve the alignment of graduate education courses, curricula, labs and fellowship/traineeship experiences for students with the needs of prospective employers—and the reality of the workforce landscape—which include not only colleges and universities but also industry, government at all levels, non-profit organizations, and others. A key task will be to learn from employers how graduate education can continue to evolve to anticipate future workforce needs.
- Identify possible changes to federal and state programs and funding priorities and structures that would better reflect the research and training needs of graduate students.
- Identify policies and effective practices that provide students and faculty with information about career paths for graduates holding master's and Ph.D. degrees and provide ongoing and high quality counseling and mentoring for graduate students.
- Identify the implications of the increasingly international nature of graduate education and career pathways, reflecting both the numbers of foreign students who enroll in U.S. graduate schools and the increasing global migration of U.S. STEM graduates.
- Investigate the many new initiatives and models that are influencing graduate education, including MOOCs, other digital learning programs, increasing numbers of alternative providers of master's and Ph.D. degrees, and opportunities to secure credentials through multiple sources.
- Create a set of national goals for graduate STEM education that can be used by research universities, Congress, federal agencies, state governments and the private sector to guide graduate level programs, policies and investments over the next decade, and ensure that this “blueprint” for graduate education reform is revisited and updated on a periodic basis to reflect changing realities.

The products of this study will be an interim report and a final report that is widely disseminated for analysis and adoption of new programs, policies, and practices that enhance STEM graduate education. This may include dissemination activities on campuses, at professional society meetings and in other venues to share the report’s findings and recommendations and to engage stakeholders in discussions around implementing new strategies, programs and models.

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Committee on Revitalizing Graduate STEM Education for the 21st Century

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