Research and related professional work in chemical education represent a "growth industry" in the United States. This presentation will review the health and vigor (as well as some areas of concern) in that area of U.S. activity, focusing on university doctoral programs in chemical education. Particular attention will be focus to the 10-year-old Ph.D. program in Chemical Education at the University of Northern Colorado (UNC), which involves advanced studies in chemistry, chemical education, and work in supporting areas such as cognitive science, research design, statistics, science curricula, and pedagogical electives.

Candidates for that Ph.D. degree at UNC must demonstrate and defend their research competence in both chemistry and chemical education by completing both masters-level and doctoral-level research projects—one in chemistry, and the other in chemical education. In addition, they must demonstrate their instructional skills by co-teaching an undergraduate chemistry course with a supervising faculty member. Graduates of programs such as this prepare for careers in chemical education research and/or teaching at either secondary or tertiary levels, as well as for professional positions in science-education organizations, curriculum-development teams, and work in educational administration and policy.

The analysis of UNC's graduate-degree program in chemical education – which is coordinated and delivered within the Department of Chemistry and Biochemistry – will be mapped onto a review of current science-education reform issues and activity in the United States. Areas of needed research will be highlighted, and examples (some hypothetical) of both well-designed and less-effective research-based efforts will be considered.