Portland State
Chemistry

College of Liberal Arts and Sciences
Spring 2021 Chemistry Seminar Series
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Course-level social belonging: Effects on student performance and persistence in General Chemistry

Abstract:
Studies are showing that social belonging affect student learning and retention. In general chemistry, we are studying course-level social belonging and a little studied factor "uncertainty in social belonging", quantitatively. We are looking at the effects of student social belonging (and uncertainty) on course performance and persistence in the course series, if these effects differ depending on identity and academic preparation, and if these effects differ in different institution types (research-intensive private institution and research-intensive public-state institution). Our findings suggest that course-level social belonging in general chemistry can have practical effects on student success and persistence of some underrepresented groups in STEM. We will discuss possible strategies for creating an inclusive environment to support all students.

Bio:
Gina Frey is the Ronald and Eileen Ragsdale Professor of Chemical Education and professor in chemistry at the University of Utah. Gina's fields of expertise are in STEM education research for higher education and faculty development. Her research focuses on promoting and creating an inclusive environment and sense-of-belonging in STEM courses for all students by developing, implementing, and evaluating social-psychological research findings in the classroom. She also studies collaborative-learning pedagogies, metacognition, and other evidence-based strategies from cognitive psychology that improve student learning and help students in STEM to transition to college-level learning. Synergistically, Gina's research focuses on educating and supporting faculty in these areas to implement evidence-based strategies through developing on-line and in-person educational material and implementing and evaluating faculty-development programs. The goal of her group is to help faculty create a classroom environment and curriculum where all students can succeed in and enjoy STEM.

Gina received her B.S. degree, summa cum laude, in chemistry and mathematics from Clarion State University in Pennsylvania and her Ph.D. in physical chemistry from the University of Utah. Leaving industry, she joined the Department of Chemistry at Washington University in 1994, was head of The Teaching Center from 2001-2017, and co-founded and co-directed CIRCLE (a STEM education research center) from 2011-2017. Gina joined University of Utah in 2019.