

Thriving in the College of Chemistry: Assessing and Improving Academic Instruction and Climate

Wednesday, April 10, 2024 // 12:00 PM

In Person at Pearson Chemistry Building

62 Talbot Ave – Room P-106

OR

On Zoom at Meeting ID: 970 7650 6589 Passcode: 202400



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The Department of Chemistry at UC Berkeley has undertaken a multiyear effort to create an inclusive academic research culture. In an initiative led by graduate students a department-tailored academic climate survey has been developed, which provides quantitative evidence that forms the foundation of annual community discussions. In response to these discussions, graduate students have created two types of short courses to support the transition of students to graduate school: first, a course for first year graduate students to promote discussions of the complexity of the impact of the discipline of chemistry on diverse communities and the responsibility scientists have in the discipline, and second, short courses in mathematics and organic chemistry to support students academically in first year graduate courses. These courses have had a positive impact on feelings of inclusion in the community. The short courses connect to our investigations of the continuum of approaches used by novice to expert students in solving authentic problems in classroom instruction and research. At the undergraduate level, we have focused on organic chemistry courses. For organic chemistry instructors a small set of fundamental problems, including predicting reactivity, proposing mechanisms, and designing syntheses are encountered frequently by both students and practitioners, who need to utilize vast amounts of content knowledge to generate reasonable solutions. We have investigated student approaches to complex predict-the-product problems. Based on these investigations, we have developed a general workflow model that serves as both a potential instructional tool and a model for student thinking.