"Bringing authentic research experiences from the laboratory to the classroom"

The American Association for the Advancement of Science (AAAS) Vision and Change document has spurred several initiatives designed to improve the way in which undergraduates learn science. Often, these initiatives have been disseminated as one-time workshops that generate awareness of and interest in developing authentic research experiences for undergraduate STEM classrooms. Conversely, whole "standardized" curricula have been developed and made available for adoption. However, successfully generating the sustainable change necessary to bring real reform to undergraduate science education should benefit both students and faculty scholarship. To create sustainable change, long-term faculty development initiatives focused on mentorship are needed so that instructors can develop and implement sustainable curricula with local relevance. Experienced instructors seasoned in developing and implementing course-based undergraduate research experiences (CUREs) based on their own scholarship and local resources can convey their experiences to mentees interested in using these pedagogical techniques as the centerpiece of their own teaching. The Council on Undergraduate Research (CUR) Biology Division has created the Mentorship for Integrating Research Into the Classroom (MIRIC) program to provide a means for members with an interest in developing improved and sustainable active learning techniques to gain experience in this style of teaching through close, long-term interaction with a veteran teaching mentor. Developed from the former ASCB Mentorship in Active Learning and Teaching (MALT) program, MIRIC focuses on the development of instructors who wish to develop a dynamic CURE. Current and future life science instructors pair themselves up with seasoned veterans of CURE development and work with them and their students over the course of a semester or longer to develop a CURE that will allow the mentee to bring authentic research into his or her classes. In our pilot studies, we collected qualitative and quantitative data based on participant interviews and coding videos of student and instructor actions during classroom activity (Smith et al., 2013), respectively, that suggest that MIRIC mentorships have made positive gains in promoting sustainable active learning techniques among participants. Since then, we have surveyed the first cohort on both the success of their CURE development process as well as the benefits of the mentoring relationship on both the mentors and mentees using validated questions derived from Mathur (2012) and Pamuk and Thompson (2009).