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Contact: Seth Bush
805-756-2746, sbush@calpoly.edu

Cal Poly Professor Takes Part in Research on Reforming Science Education

SAN LUIS OBISPO – A Cal Poly professor has co-authored an article in the December 19 edition of *Science* magazine that seeks to characterize an emergent education reform effort: the seeding of science departments with science faculty with education specialties (SFES).

Seth Bush, assistant professor of chemistry and biochemistry at Cal Poly, worked with several colleagues from other CSU campuses and Purdue university. The research team studied the roles of SFES, science faculty that take specialized roles in their disciplines, to reform undergraduate science education, improve K-12 teacher preparation and conduct science education research.

“Our research shows the SFES model is promising and spreading in the CSU, but it also suggests that individual SFES face professional isolation,” said Bush.

In a comprehensive survey of the CSU campuses, 59 science faculty were identified as serving in the SFES role. Of those, 47 percent transitioned into an SFES role from a more traditional science-faculty position. The remaining 53 percent were hired specifically for the SFES position. While both groups had extensive formal training in basic science, those specifically hired as SFES tended to have more formal training in science education.

Roughly 40 percent of both types of SFES surveyed noted serious consideration toward leaving the specialized science-education position due to a perceived lack of institutional understanding of the field and to job burnout.

This indication of job burnout comes on top of an earlier study, indicating when college students abandon science as a major, 90 percent of them do so because of what they perceive as poor teaching. For those who remain in the sciences, 74 percent lament the poor quality of teaching.

According to the research team, future success of SFES positions can be measured by increased numbers and quality of K-12 science teachers and of science majors graduating from colleges and universities.

The authors will next expand the CSU study to a national sample.

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San Luis Obispo, CA 93407
805.756.7266
polynews@calpoly.edu