

Another Advancement In

STEM Education



Iowa State University informing decision-makers about research in Science–Technology–Engineering–Mathematics Education

Community college STEM preparation at the forefront of ISU, IMSEP goals

It's really just a simple equation: More STEM educators equal more STEM-minded students. But in reality, increasing the number of science, technology, engineering, and mathematics (STEM) instructors at all levels of the educational system is a problem facing Iowa schools and community colleges.

Larry Ebbers, a university professor of educational leadership and policy studies (ELPS) at Iowa State, has long led the way in creating innovative curriculum for education administrators. Through the Iowa Mathematics and Science Education Partnership (IMSEP), Ebbers is now working with an advisory board of state education experts to define – and refine – how community college instructors approach and prepare students for STEM education.

“What we’re seeing is that more and more students are getting their start at community colleges,” Ebbers said. “When we have [community college] instructors who are certified in STEM, who recognize the potential in students, and can create cognition within the classroom, we’re on the right path to putting more STEM [student] types in the pipeline.”

Ebbers and fellow ELPS faculty members will lead a variety of workshops in 2009 to increase the STEM teaching capabilities of community college educators statewide. Instructors will have opportunities to earn community college teaching certificates with special emphases in STEM fields and participate in a summer institute designed to develop a community of STEM instructors and scholars. A workshop will encourage new instructors to fold STEM education pedagogies into their curricula.

“Through these workshops and courses, we want to provide teaching techniques that will improve student learning and critical thinking and increase the awareness of STEM in the classroom,” Ebbers said.



ELPS students Christy Twait and Jane Bradley discuss research on STEM education within community colleges during a poster session.

Given his insight into these fields, it's no surprise that Ebbers sees STEM careers as vital to the future workforce. The Iowa Legislature's continued support of IMSEP amidst budget cuts suggests that he's not alone – and that the future of STEM-educated students is bright even in a stormy economic climate.

“Everything is moving toward more technology,” Ebbers said. “Careers in bioindustries, healthcare, ‘going green,’ – it's all related to STEM. Creating better instructors will help these students prepare for the global workforce they will encounter.”

From creating STEM teaching certificates to growing a larger pool of potential, STEM-minded workers, Iowa State University is stepping up efforts to prepare the state's future scientists, technologists, engineers, and mathematicians – from the ground up. The collaboration between all of Iowa's community colleges, as well as the state's three Regent universities, and the Board of Regents, State of Iowa, sends a strong message about the future of education in Iowa.

“When we work together, it strengthens the support we have for a specific issue, and it really stands out as a priority for our educators,” Ebbers said. “The strong participation and enthusiasm [for STEM] makes it a very exciting time to be in education.”

For more information:

Read more about the IMSEP initiative at www.iowamathscience.org. Check other STEM education success stories from the College of Human Sciences at www.hs.iastate.edu/news/stem.