IOWAMATH+SCIENCE EDUCATIONPARTNERSHIP

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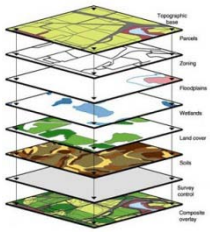
a collaboration of Iowa's public universities in affiliation with STEM education organizations across Iowa

ConFABS Help K.I.T.E. Expansion

At last April's ConFABS (*Conversation to Forge Alliances of Businesses and Schools*) co-hosted by IMSEP and Loess Hills AEA's Kim Wise in Council Bluffs, Harlan Elementary teachers Becky Chipman and Lindsey Vorm hoped to figure out ways to expand K.I.T.E. (*Kids Inspired Through Education*). K.I.T.E. provides after-school STEM enrichment to kids grades K through 5. What Becky and Lindsey discovered at the ConFABS were like-minded passionate peers from throughout the region, each with great ideas for connecting learning to the real world. They were able to build a robotics inventory with a mini-grant provided by IMSEP in support of school-business partnerships. The K.I.T.E. team is developing partnerships with additional businesses, expanding their reach across the Harlan district, and linking to the Girl Scouts for a possible shared LEGO® League team. Six ConFABS have been held at AEAs across Iowa to date. The business of education is a community-wide responsibility for which IMSEP is a privileged catalyst.

Externship Experience Translates into Fun Assignments



Following a successful stint as a *Real World* Extern this summer with the Department of Natural Resources (DNR), teacher Ryan Lensing became proficient with GIS, a technology that is widely used in many business settings. As a natural sciences teacher at Des Moines' Dowling High School, Ryan has incorporated this new skill into his teaching curriculum this semester. "I created new curriculum centered on GIS software. We have access to maps of the Dowling campus area (when it was a golf course) from 1938, which really shows how Dowling has changed over time," said Ryan. Pilar Mireles, a senior, loves Mr. Ryan's class. "I liked using the program to see how things have changed, like seeing the Saylorville Lake area go from fields to what it is today. It's good to know how to use the software in case I need to use it with my future career." Ryan's hope is that the next step for students is to look at a familiar landmark in a new way. "This is a skill all environmental scientists need. But it's used in marketing departments and other fields as well. This just adds another skill for kids as they decide what to do in the real world." For more information about the IMSEP *Real World Externships for Teachers of Mathematics & Science* program, contact Diane at diane.yoder@uni.edu or call 319.273.2757

Advice from I-Teach Mentor Julie Rokes

We caught up recently with 29-year teaching veteran Julie Rokes, a 7th and 9th grade physical science teacher at Dike-New Hartford, who, at 7:30 a.m. sharp, was helping a student make up a science test. Mrs. Rokes is one of several star teachers in the region who mentor new recruits drawn in through *I-Teach Math and Science*, giving them hands-on experience during their freshman year of college, which is earlier than a typical education student gets into a classroom setting for credit. "One of the things I encourage my *I-Teach* students to do is get several endorsement areas...simply biology is not enough...get the physical science with it…try for chemistry and/or physics," explained Rokes. Another piece of advice? Start a file of hands-on activities to use with junior high and high school students. "There are lots of technology activities out there, but do not underestimate the value of hands-on activities and lab work. Lab work reinforces the scientific method and problem solving, which is a life-long skill everyone needs to learn." Finally, always opt for classroom experience as early as possible in one's college career—take advantage of programs like IMSEP's *I-Teach* program. "Many students from bigger cities have no idea about today's classroom, particularly in a small-town community. Having 7th through 12th grades all under one roof may not be what they experienced when they were growing up. Without actually working in a real classroom, how else will they know how rewarding it is?" Thanks Mrs. Rokes and all of our valued partners who mentor the next generation of science and mathematics teachers.

Iowa Girls Taking the "Road Less Traveled' to Northwest Iowa

On November 3, 300 middle- and high-school girls from all corners of Northwest Iowa traveled to the Sioux City Convention Center to attend *Taking the Road Less Traveled to Northwest Iowa Career Conference*. The conference, offered by Iowa State University's Program for Women in Science and Engineering, is one of several conferences held in different parts of the state designed to expose girls to the variety of career opportunities in STEM fields. According to outreach program coordinator Carol Heaverlo, this event "focuses on 6th to 12th grade girls to increase awareness of opportunities and to provide strong female role models as

presenters who are working in STEM fields." Organizers found that while holding this kind of conference on Iowa State's campus offers a significant learning experience for the girls, taking the program on the road might allow more students the ability to attend. In keeping with IMSEP's goal to improve mathematics and science performance of Iowa's students and promote statewide collaboration and cooperation, IMSEP is pleased to partner with Iowa State in supporting women in STEM education. For more information, contact Carol Heaverlo at heaverlo@iastate.edu or go to http://www.pwse.iastate.edu/trlt.html.

Two New Members Join the IMSEP Executive Board

Join us in welcoming two new Executive Board members to the IMSEP team and in thanking those Board members who are handing off the torch. Barbara Dougherty, director of the Center for Excellence in Science, Mathematics & Engineering Education at Iowa State University, has joined the Board at the same time as Mary Hall Reno, professor and chair of the Department of Physics and Astronomy at the University of Iowa. Our new members join a distinguished cadre of experts in mathematics or science education currently serving on the Board. Veteran members include the University of Northern Iowa's Joel Haack, dean of the College of Natural Sciences, Latricia Hylton, mathematics center coordinator at UNI's Academic Learning Center and Jill Uhlenberg, assistant professor and interim department head, Department of Curriculum and Instruction; Iowa State University's Thomas Greenbowe, professor of chemistry, Department of Chemistry and Loren Zachary, professor of aerospace engineering and assistant dean for Engineering Education; the University of Iowa's Brian Hand, professor of science education for the Department of Teaching and Learning and Walter Seaman, associate professor, Department of Mathematics, and associate professor, Department of Teaching and Learning. We'd also like to welcome Ted Neal who will be helping the IMSEP cause as UI's campus coordinator. A heartfelt thanks to Corey Drake, assistant professor of mathematics education, Department of Curriculum and Instruction at Iowa State University, and Norbert Pienta, associate professor of chemistry and general chemistry coordinator, Department of Chemistry, and director of the Center for Teaching at the University of Iowa, for their critical role in shaping IMSEP from the start. Thank you all for continuing to make IMSEP a success.

IMSEP Awards Noyce Teaching Scholarships

Congratulations go out to three University of Northern Iowa (UNI) students, five Iowa State University (ISU) students and five University of Iowa (UI) students, who were each awarded a $10,000 scholarship for their commitment to mathematics or science teaching. For the next five years, each campus is able to support up to five mathematics or science students through IMSEP and the Noyce Scholarship program to earn certification to teach. Earlier this year, the National Science Foundation (NSF) awarded nearly $900,000 to IMSEP to support science, technology, engineering and mathematics (STEM) majors in their junior or senior year or post-bachelors degree holders who decide to become middle- and high-school mathematics and science teachers. Recipients must fulfill an obligation to teach in a high-need school after graduation. "The students honored by this scholarship are the cream of the crop—bright and passionate walking and talking solutions to Iowa's teacher shortage crisis," observes IMSEP Director Jeff Weld. These awards complement IMSEP's *I-Teach Math & Science*, a freshman-level teacher recruitment program established to tap talented incoming college students to become science and mathematics teachers for Iowa schools.

Quick Facts

- Mark your calendars for Wednesday, March 24, 2010, for IMSEP Day at the Capitol. We'll have numerous displays around the Rotunda area from 7:00 a.m. to 3:00 p.m. Watch for more details.

- *Go!* is becoming bilingual. Starting this month, *Go! (¡Vamos!)*, a free online magazine for teens created by ISU's Institute for Transportation and co-sponsored by IMSEP to make connections with mathematics and science concepts while exploring transportation careers, will begin translating each issue into Spanish. To subscribe, go to http://www.go-explore-trans.org/subscribe/add_spanish.cfm. Questions? Contact Rebekah Bovenmyer, *Go!* Editor, at rboven@iastate.edu or editor@go-explore-trans.com .

- By the Numbers….Four hundred and forty-one (441) Iowa high school students earned Regent university credit for *Project Lead the Way* over the last year. Over 2,000 students, 500 pre-service teachers and 500 teachers of mathematics and science participated in outreach programming through IMSEP grants to faculty at the three Regent universities. And in one year, 47 more mathematics and science majors have been drawn into teaching at Iowa State University and the University of Northern Iowa. For these and other findings, check out the FY2009 Annual Report at http://www.iowamathscience.org/reports/IMSEP_FY2009_Annual_Report.pdf .