

## Technology Showcase Reception/ View Poster Sessions

4:30–6:00 P.M. Pacific Concourse (*All attendees*)

Prize drawing 5:00

### Poster Sessions

#### **IT Apprenticeships: Making the Connections**

Lansing Community College has developed an apprenticeship program to help students get their feet in the door in a highly skilled IT workforce. The Capital Region Area Information Technology Apprenticeship program provides IT students with a registered apprenticeship opportunity that will give them practical experience and assist them in transitioning from school to work. It has become apparent in the mid-Michigan region that the available jobs are in the advanced IT area and that displaced and new workers need a quick and deliberate process for capitalizing on this opportunity immediately. This apprenticeship program, a renewed NSF project, is a strategic, aggressive attempt to shatter the obstacles faced by a variety of learners to provide them smoother, straighter pathways to the advanced technology jobs of the twenty-first century. This initiative, along with the Michigan Department of Information Technology, received an award in October 2009 from the National Association of State Chief Information Officers (NASCIO) for a cross-boundary IT internship/apprenticeship and economic growth partnership project for innovative approaches to solving problems.

Presenter: **Lois McIntosh**, Lansing Community College, Lansing, MI

#### **Geospatial Education Collaborative: Bridging Education and Workplace**

This poster session will highlight the progress of the Geospatial Education Collaborative (GEC) in providing a bridge between different educational institutions and the workplace. Based at Shasta College in Northern California, the GEC project is building curriculum to serve both career-technical and university-transfer students. The GEC grant supports a community well-being atlas project that allows students to gain workplace experience while helping to meet community needs. For transfer students, a new geospatial course has been created, in cooperation with California State University at Chico, to meet general education transfer requirements. Initiatives are also under way to expand geospatial education in area K-12 schools.

Presenter: **Daniel Scollon**, Geospatial Education Collaborative, Redding, CA

## Poster Sessions *(continued)*

### **Warlock Games**

Want a fun, new way to challenge students, employees, and conference attendees? Warlock Games provides just the right architecture with an online Jeopardy-style game board containing customizable content to fit your specific needs. Designed to run over the web, the database support on the backend takes care of question and answer storage, score keeping, and chat sessions, as well as enrollment, verification, and password changes. Want a preview? Take a look at [warl0ck.gam3-s3rv3r.com](http://warl0ck.gam3-s3rv3r.com) for rules, directions, and screenshots of previous challenges.

Presenter: **Rob Murphy**, ISI Professional Services, Washington, DC

### **The Next Generation of Electrical Utility Line Technicians Attaining an Associate of Applied Science Degree “Boot Camp Style”**

Pearl River Community College (PRCC) received an urgent request in the aftershock of Hurricane Katrina, which left thousands of miles of electrical cable on the ground. The electricity generation and transmission industries in the gulf south were facing a second storm—the imminent retirement of a “baby boomer” workforce. Katrina highlighted the need to develop a new generation of utility line technicians. PRCC and its utility partners solicited support from the NSF ATE program to create a different approach to technician education: intense scheduling, boot camp style, curriculum-wide. The positive results of that model, and how it can be adapted to other technician education programs, will be on display.

Presenter: **Scott Alsobrooks**, Electrical Distribution Technician Training System, Poplarville, MS

### **The Institute for Food Safety Biotechnology Program**

Meeting new food safety legislation is hampered by shortfalls in the availability of food testing technicians. Until now, food technicians studied for a B.S. degree, then added certificates in testing. Florida State College at Jacksonville developed the Institute for Food Safety using an existing biotechnology A.S. program for training a new class of testing professionals. The phase-one IFS opened in 2010 as a partnership between FSCJ and Eurofins, an international analytical company. Students train in shared spaces with industry personnel on the same or duplicate equipment. This concept puts students in an industrial setting as the service laboratory conducts testing for local industry.

Presenter: **Randall Pegg**, The Institute for Food Safety, Jacksonville, FL

### **Integrating Research and Teaching Activities in Manufacturing Engineering Education**

In this presentation, a novel approach to manufacturing engineering education is presented in which undergraduate students get involved in state-of-the-art research or real-world industrial projects in the form of course and senior design projects. Several successful results, including research results publications in top journals and conferences and industry projects implementation, are presented. Project quality measurement and adaptation of this approach to similar programs are also discussed.

Presenter: **Bahram Asiabanpour**, Rapid Produce and Process Development Research Center, San Marcos, TX

## Poster Sessions *(continued)*

### **Preparing a New Workforce for a Sustainable Economy**

Preparing a New Workforce for a Sustainable Economy is an ATE project designed to produce model certificate programs in renewable energy leading to a new two-year degree at Illinois Valley Community College. Two certificate programs for wind energy technicians are complete. Work is beginning on certificates for technicians in other renewable industries. Finally, an A.A.S. degree in industrial technology will be developed as a career pathway from renewable energy and related certificates to baccalaureate programs. This poster highlights the aggressive timeline for developing renewable energy certificates and an A.A.S. degree leading to a 2+2 bachelor's degree.

Presenters: **James Gibson, Sue Isermann, Jamie Gahm, Rose Marie Lynch**, Illinois Valley Community College, Oglesby, IL

### **Using High-Impact Practices Like Service-Learning and Engaged-Learning to Teach Biotechnology**

Queensborough Community College (QCC) is a minority institution. Most of our low-income, first-generation students come from educationally disadvantaged backgrounds. A biotechnology course was revised by incorporating pedagogies such as service-learning and engaged-learning. This updated biotechnology syllabus sparked an interest in students with narrow career goals. Biotechnology has become one of the capstone courses at QCC, thereby increasing STEM student retention. Student success can be seen in increased numbers of student presentations at conferences. For the service-learning project, biotechnology students invite students from a local homeless shelter for a DNA extraction workshop. The enormous impact of this workshop will be discussed.

Presenter: **Nidhi Gadura**, Queensborough Community College, Bayside, NY

### **Broadening Participation in the Laboratory Technician Workforce Through Inclusion of Deaf Students**

The Laboratory Science Technology (LST) program at the National Technical Institute for the Deaf at the Rochester Institute of Technology is broadening participation of persons with disabilities in laboratory technology fields by encouraging, educating, and promoting deaf and hard-of-hearing students. The program boasts an impressive graduation rate, a large proportion of female students, the satisfaction of co-op supervisors and employers, and a large percentage of students who continue their education past the associate degree level. The development and maintenance of the LST program will be presented along with strategies for curricular development, including the establishment of an advisory board with industry representatives.

Presenter: **Vince Daniele**, National Technical Institute for the Deaf, Rochester, NY

## Poster Sessions *(continued)*

### **Energizing STEM Education**

Delaware Technical and Community College (Delaware Tech) has been awarded a three-year National Science Foundation Advanced Technological Education grant to educate students at Delaware Tech and the local community in wind, solar, and biofuel renewable energy technologies. The goals of this project are to increase enrollment and retention in STEM technologies, add renewable energy topics to existing technology programs, increase renewable energy expertise of the faculty and staff through professional development, and enhance renewable energy knowledge and awareness in the college and local community. This poster will present newly developed curricular materials in the renewable energy (RE) topics that are being incorporated into the existing chemistry technology curriculum. Incorporation of RE topics into the program addresses the need for development of a workforce that is ready for new green industries.

Presenter: **Maurizio Bianchi**, Delaware Technical and Community College, Newark, NJ

### **A Model for Summer Robotics Camps**

For six years, FLATE, the Florida Advanced Technological Education Center of Excellence at Hillsborough Community College in Tampa, Florida, has been involved in summer robotics camps for secondary school students. The camps have grown to become a fine-tuned summer STEM experience for the students. They use Lego Mindstorm robots as the central tool, and students learn to program the robots, use sensors, and participate in competitions. They also are exposed to advanced manufacturing careers, use SolidWorks, and visit a manufacturing facility. This poster shares the mechanics and learning objectives of this best practice camp, along with follow-up tracking of campers' STEM interests.

Presenters: **Marilyn Barger, Marie Boyette, Richard Gilbert, Dave Gula**, FLATE, Tampa, FL

### **Summer Camps to Support Student Recruitment for a Technician Program**

The challenge faced by most technician education programs is to increase the enrollment of qualified students. In this paper, the summer camp model is described in detail for an established electro-optics (EO) technician program at the two-year campus of Indiana University of Pennsylvania (IUP). The summer camp has not only introduced participants to the exciting challenges in lasers and electro-optics technology, but it has also created a broad awareness of the educational and career opportunities in this emerging technical field. Summer camps have demonstrated their effectiveness in student recruitment to build the high school pipeline for the postsecondary technician program.

Presenter: **Feng Zhou**, Indiana University of Pennsylvania, Freeport, PA

### **Protein Is Cash: An Introductory Curriculum Developed Through NSF-ATE by NBC<sup>2</sup>**

The need to supply creative, hands-on curriculum to educate students in biomanufacturing is growing as new products are being brought to market and job openings increase. General understanding of biomanufacturing is limited and is often confused with research generally seen in biotechnology. Developing the Protein Is Cash curriculum was one of our NSF-ATE goals, to introduce grade 9–12 teachers to techniques in and fundamental approaches to biomanufacturing. In turn, they can introduce their students to new career tracks. The workshop/curriculum details will be included.

Presenters: **Mary Jane Kurtz, Sonia Wallman**, NBC<sup>2</sup>, Blue Bell, PA

## Poster Sessions *(continued)*

### **Manufacturing Integrated Learning Lab (MILL): A Hands-On Approach to Engineering and Technology Education**

There is a need for engineering and technology curricula which balance analytical and theoretical knowledge with integrated physical facilities that offer students relevant hands-on experiences. It has been established that fabricating a simple functional mechanism is an effective way to give students hands-on manufacturing experiences. A consortium of five departments in four institutions was formed, and a consortium-wide curriculum writing process was undertaken in which a core set of common course-level learning outcomes was developed. A statistical analysis was used to determine the outcomes with greatest contribution to meeting institutional educational objectives. This resulted in a common core of learning outcomes serving the needs of all participating institutions.

Presenter: **Mukasa Ssemakula**, Wayne State University, Detroit, MI

### **Utilization of Problem Case-Based Learning in the Life Support and Sustainable Living Program**

The Regional Center for Next Generation Manufacturing (RCNGM) and the Life Support and Sustainable Living (LSSL) Program are part of the Connecticut College of Technology (COT). The RCNGM addresses the need for skilled workers in the new manufacturing workplace. The LSSL Program focuses on industry-driven projects that integrate Problem Case-Based Learning (PCBL) with applications in aerospace, aeronautics, biomechanics, and engineering. PCBL is an instructional approach that challenges students to learn through collaborative real-world problem solving. During the program, students exercise their technical and engineering skills as well as learn essential professional skills including project management and how to function in self-managed teams.

Presenters: **Karen Wosczyzna-Birch**, RCNGM, Hartford, CT

**John Birch, Chuck Paulson**, Life Support and Sustainable Living Program, Hartford, CT

**Mehrdad Faezi**, Manchester Community College, Hartford, CT

Students: **James Centrella, Bharathi Gopalkrishnan, Courtney Collins**

### **Biotechnology Graduates Tracking Study (III) Long-term Follow-Up on Four Successful Graduates**

The focus of this project was to assess the commonality of characteristics among leading biotechnology graduates of Forsyth Technical Community College (Forsyth Tech). Forsyth Tech is a member of the North Carolina Community College System (NCCCS), which has invested heavily in workforce training for the assembly of a large pool of highly trained biotechnology workers. This study is a follow-up to the Tracking Biotechnology Graduates in the Piedmont Triad, North Carolina, report completed in June 2009 and Tracking Biotechnology Graduates of Forsyth Technical and Alamance Community Colleges completed in April 2010. Both reports can be accessed online at [www.biotechworkforce.org](http://www.biotechworkforce.org). This project explores the characteristics demonstrated by prominent graduates of Forsyth Tech's biotech program.

Presenters: **Russ Read, Mica Welsh**, National Center for the Biotechnology Workforce, Winston-Salem, NC

## Poster Sessions *(continued)*

### Follow-Up Study (2010) on a Successful National Teacher Fly-In Carried Out in 2007

This study consists of a follow-up with twenty-four teachers who flew into the Piedmont Triad region of North Carolina from around the country on October 17–19, 2007, to participate in a two-day workshop. Bio-Link and the National Center for the Biotechnology Workforce jointly sponsored this event funded by the U.S. Department of Labor High Growth Grant and NSF ATE. The goal was to introduce middle and high school teachers to science activities they could take back to their classrooms and share with their students. This study took place during September through December of 2010, about three and a half years after the original event, and was designed to evaluate the teachers' experiences since the fly-in.

Presenters: **Russ Read, Mica Welsh**, National Center for the Biotechnology Workforce, Winston-Salem, NC  
**William Woodruff**, Bio-Link, Burlington, NC

### Build a Program—Will They Come and Where Will They Go?

The “green” effort is prominent in everything we see today. To assist Florida colleges in “greening” up their programs, Brevard Community College and its partners Florida State College at Jacksonville and Tallahassee Community College were awarded an NSF ATE grant to ascertain the relevance of existing curriculum to Florida businesses. Through this process and approach, modular, industry-validated curriculum would be created or changed for statewide use potentially in any discipline area. This poster will layout the processes taken and what we found out in the process about the green movement and its impact on business.

Presenters: **Sheryl Awtonomow**, Brevard Community College, Cocoa, FL  
**Rick Frazier**, Tallahassee Community College, Tallahassee, FL  
**Ernie Friend**, Florida State College, Jacksonville, FL

