High Impact Technology Exchange Conference
Eduoating America's Technical Workforce
ST LOUIS • JULY 22–25
Hyatt Regency at the Arch
CONFERENCE PROGRAM
**Poster Sessions • 3:00–5:30 (continued)**

**BETA Skills: Skills for Biomedical Emerging Technology Applications**

The project (NSF ATE DUE 1180909) represents advanced technological education pertaining to "convergent technology platforms" supporting product research, development, and/or manufacturing at the interface between biomedical devices and tissue engineering. Objectives are to (1) define BETA core skills for national use by educators, researchers, and employers and (2) connect BETA competencies to the emergence of technician-specialists with a new, higher-level set of specialized core skills. The project is national in scope and involves multiple sites across the country. This session will present project data.

Russ Read, Forsyth Tech, Winston-Salem, NC

**Using Historical Sanborn Maps in GIS**

Discovering the history of cities and towns by using Sanborn Fire Insurance Maps will be visualized. This poster will show historical maps and describe features on the maps such as building materials and water sources and how they can be used in urban planning. The process of creating vector surfaces and shapes using open-source geographic software will be explored.

Vince Diheto, National Geospatial Technology Center of Excellence, Jefferson Community and Technical College, Louisville, KY

**Assessing Educational Pathways for Manufacturing in NW Florida: Study Progress to Date**

Building on prior research on career pathways in information technologies (IT), this NSF ATE targeted research project investigates the alignment of curriculum, employer needs, and now employee experience in advanced manufacturing (AM) and tests the usefulness of tools and processes developed to assess alignment with employer needs. In this session, the presenter will share research results to date, directions for future work, and implications.

Marcia A. Mardis, Florida State University, Tallahassee, FL; David Iouwin, Chipola College, Marianna, FL

**Pathways to "and through" a Vacuum Technician Curriculum**

Vacuum technicians fill the critical role of maintaining complex equipment used in the semiconductor, solar, and defense industries. No manufacturer provides one of the few vacuum technology education programs in the United States. Pathways to the program have broadened through partnerships with industry and academic institutions. A telesopmetry delivery model provides a pathway for students and incumbent workers around the country to take classes in their state while practicing hands-on with a Vacuum Equipment Trainer system. The Initial Foundation classes include a concept inventory that helps students chart a pathway through the vacuum technology curriculum for rapid entry into the workplace.

Nancy Loywaighe, Normandie Community College, Bloomington, IN

**Documenting the Prevalence of Antibiotic Resistance in the Environment**

Engaging Students through a Microbe to Mars and Camps to College and Advanced Technological Careers is an NSF-funded project designed to increase the STEM interest and skills attainment of underrepresented and socioeconomically disadvantaged high school students. The focus is on engaging middle and high school STEM teachers and their students using innovative activities to introduce students to careers as technicians. One of the innovative activities is the Prevalence of Antibiotic Resistance in the Environment (PARE) project, where community college students worked with regional high school students. The high school students collected soil samples, and the college students served as their laboratory technicians. They processed the samples and photographed the results. The data was analyzed by the high school students and then submitted to TAU University's national database.

Ashley Johnson, Amanda Gregg, Northwestern Connecticut Community College, Winsted, CT

**Results of the Biosciences Industry Fellowship Program – NSF ATE Grant #1300101**

The National Center for the Biotechnology Workforce (NCBW) of Forsyth Tech has to date had approximately 55 fellows – community college or HIS instructors and several veterans, representing multiple states – come to Winston-Salem, NC, to do a three-week or one-month program. Fellows participated in lab camps at three community colleges with hands-on lab experiences and shadowed workers in multiple departments at a dozen industrial/university/healthcare facilities with the aim and purpose of visiting many of our key NC bioscience assets and crystallizing the bioscience industry. This session reports on our data and conclusions over a six-year period.

Russ Read, Forsyth Tech, Winston-Salem, NC

**Creating Technical Scholars (CTS)**

Eastern Shore Community College's Creating Technical Scholars Project brings together local high school employers, school districts, and four-year institutions to create flexible career pathways beginning in high school and potentially culminating in a bachelor of applied science degree, with an emphasis on recruiting and retaining underrepresented populations.

Cherville Mason, Eastern Shore Community College, Melfa, VA
**Mission**: Define BETA core skills for national use by educators, researchers and employers and connect BETA competencies to the emergence of technician-specialists with a new, higher-level set of specialized core skills.
The BIFP is a unique three week intensive Bio Industry Fellowship Program. It has run for six years serving close to 60 faculty from multiple states. It is continuously highly rated by the 3rd party evaluator via of surveys of the Fellows.

**Objectives**
- Instigate Professional Development between participants and Industry Partners
- Import experiences to make curriculum more contextualized
- Familiarize with hand on labs that are relevant to industry
- Provide industry shadowing experiences
- Capture and disseminate the experience