High Impact Technology Exchange Conference

Educating America’s Technical Workforce

Omni Orlando Resort
ChampionsGate, Florida
July 26–29, 2010

CONFERENCE PROGRAM

HI-TEC is sponsored by a consortium of National Science Foundation Advanced Technological Education centers and projects and supported by grants from NSF and contributions from corporate and industry partners.
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www.highimpact-tec.org

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Welcome to HI-TEC 2010

Orlando is an exciting destination to escape from your everyday world for a few days. HI-TEC is proud to bring together the place and time, as well as the presentations and exhibits, that will allow you to refresh your skills and renew your commitment to improving the technological skills of students and the workforce.

The pages of this conference program reveal wonderful opportunities for your professional development and networking. Look at the Schedule at a Glance on page 4. If you registered for one or more preconference events on Monday and Tuesday, you are taking maximum advantage of your days in Florida. The main conference on Wednesday and Thursday allows you to choose seven breakout sessions, hear three keynote speakers, and visit the Technology Showcase exhibits several times over two days. The list of exhibitors is on page 51. Drawings for great prizes will be held at four announced times in the Technology Showcase area.

Have a great conference and we know you will want to join us for HI-TEC 2011 in San Francisco!

David Bond, Ed.D.
Conference Director

Sponsorship, Committees, and Key Personnel

HI-TEC 2010 Conference Steering Committee
Marilyn Barger (Chair), FLATE; Ann Beheler (Program, CTC); Mel Cossette (Marketing), MatEd; James Jones (Business), MPICT; Elaine Johnson (Keynotes), Bio-Link; Al Koller and Maria Peterson (Tours/Keynotes), SpaceTEC; Michael Lesiecki (Sponsorship), MATEC; Deb Newberry (Awards), Nano-Link; Gordon Snyder (Dissemination), ICT Center

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Dissemination Committee
Gordon Snyder, ICT Center; Rick Parker, AgrowKnowledge

Sponsorship Committee
Michael Lesiecki, MATEC; Gordon Snyder, ICT Center

Awards Committee
Deb Newberry, Nano-Link; Matthias Pleil, SCME; Jean Kristi, Nano-Link; Paul Pennington, Nano-Link

Conference Director: David Bond, CORD
Conference Manager: Sheila Wilson, CORD
Exhibit Coordinator: Teemus Warner, CORD
Website Coordinator: Christine Dossey, CORD
Marketing Coordinator: Lara Smith, MATEC
Marketing Coordinator: Julie Foreman, OP-TEC
Registrar: Linda Locke, CORD
Editor: Mark Whitney, CORD

Any opinions, findings, conclusions or recommendations expressed do not necessarily reflect the views of the National Science Foundation.
Acknowledgments

The High Impact Technology Education Conference (HI-TEC) is in its second year. Attendees tell us networking and collaboration are the hallmarks of this unique conference. Those two words also characterize the producers of this conference, the collaborative of 25 Advanced Technological Education centers supported by their host community colleges, universities and organizations. The conference is produced by the Center for Occupational Research and Development (CORD). Those dedicated professionals have shown a superb commitment to excellence and responsiveness in the creation of HI-TEC.

Financial support is critical to a conference’s success, and we gratefully acknowledge the support of the National Science Foundation (NSF). The Advanced Technological Education (ATE) program at the NSF, now in its 16th year, has led the effort at our nation’s community colleges to advance education and training for the New American Workforce. The NSF had the vision to catalyze efforts and encourage innovation – HI-TEC is just one result of their dedicated work.

Our warm thanks to our local hosts, Hillsborough Community College and the Florida Advanced Technological Education Center (FLATE), and Brevard Community College and SpaceTEC for all the support of our efforts. Special thanks to Valencia Community College for the laptops in the E-Center and to Seminole State College of Florida for providing the computer equipment in the computer labs as well as technical support.

We appreciate our exhibitors in the Technology Showcase who are partners as well. They bring a synergy of knowledge, products, and services that help educators help students achieve genuine success in their learning. The group of ATE centers and projects who acted together to produce this conference also committed financial resources to its success. Finally, our thanks go out to our attendees who made the commitment to attend and participate in HI-TEC. We want to grow this unique event together.
Hotel Information
Omni Orlando Resort at ChampionsGate
1500 Masters Boulevard
ChampionsGate, FL 33896
407-390-6664

Registration Hours
National Ballroom Foyer
Monday 7:00 A.M.–5:00 P.M.
Tuesday 7:00 A.M.–5:00 P.M.
Wednesday 7:00 A.M.–5:00 P.M.
Thursday 8:00 A.M.–1:30 P.M.

E-Center Hours
Legends Boardroom
Monday 7:00 A.M.–5:00 P.M.
Tuesday 7:00 A.M.–5:00 P.M.
Wednesday 7:00 A.M.–5:00 P.M.
Thursday 8:00 A.M.–4:00 P.M.

Technologies Showcase Hours
National Ballroom CD
Wednesday 10:00 A.M.–6:00 P.M.
Reception 4:30–6:00 P.M.
Prize Drawing 10:30 A.M. 2:45 P.M. 5:00 P.M.
Thursday 10:00 A.M.–Noon

Computer Labs
Computer equipment is provided by Seminole State College of Florida with technical support provided by SSSF students.

Color guard for the Wednesday opening session is provided by the University of South Florida ROTC under the direction of Captain Jennifer Simpson.

Computers provided by Valencia Community College
Keynote Speakers

Story Musgrave

*My 35 Years with That Machine: The Hubble Space Telescope*

Former NASA astronaut who performed the first shuttle spacewalk on Challenger’s first flight, was a pilot on an astronomy mission, conducted two classified DOD missions, and was the lead spacewalker on the Hubble Telescope repair mission

Wednesday, 8:30–10:00 A.M.

Anthony M. Johnson

*The 50th Anniversary of the Laser and Its Significant Impact on Our Technological Society*

Director, Center for Advanced Studies in Photonics Research (CASPR); Professor of Physics and Computer Science and Electrical Engineering, University of Maryland Baltimore County (UMBC); Deputy Director and Materials Research Thrust Leader, NSF Engineering Research Center MIRTHE (Mid-Infrared Technologies for Health and the Environment)

Thursday, 8:30–10:00 A.M.

Duane De Freese

*Ocean Science and High-Impact Technology—21st Century Challenges Present Opportunities to Change the World*

Vice President of Science and New Business Development, AquaFiber Technologies Corporation

Thursday, 12:30–1:30 P.M.
The National Science Foundation’s grant support for two-year colleges in the Division of Undergraduate Education (DUE) and the Division of Research on Learning in formal and informal settings (DRL)

**ATE:** Advanced Technological Education Centers and Projects – new materials, exemplary methods, and professional development

**STEP:** Science, Technology, Engineering, and Mathematics Talent Expansion Program – seeks to increase the number of students in STEM fields

**S-STEM:** Scholarships in Science, Technology, Engineering, and Mathematics – for academically talented, financially needy STEM students

**TUES:** Transforming Undergraduate Education in Science, Technology, Engineering and Mathematics – for new materials, teaching strategies, and widespread adoption projects

**ITEST:** Information Technology Experiences for Students and Teachers – increasing the STEM capacity in the STEM professional sector of the U.S. workforce by targeting K-12 students and teachers

**MSP:** Math and Science Partnerships – seeks to improve student outcomes in math and science for all students at the K-12 level

Visit www.nsf.gov
MATEC supports FACULTY and CURRICULUM development to meet the ever-advancing WORKFORCE demands of the semiconductor, automated manufacturing, electronics, and energy related INDUSTRIES.

mtec.org

NetWorks offers a digital resource library, web seminar series, national conference, and a virtual technology education community.
matecnetworks.org

eSyst revises Electronics curriculum, shifting the focus from the component level to a holistic systems approach.
esyst.org

Work Ready Electronics develops instructional modules to synchronize Electronics curriculum to the rapidly changing workplace.
work-readyelectronics.org

High Tech U provides students with an intensive industry-led introduction to the high tech industry, potential career paths, and educational requirements.
semi.org/foundation

The Maricopa Advanced Technology Education Center (MATEC) is a member of the Division of Academic and Student Affairs at Maricopa Community Colleges. MATEC was originally founded as a National Center of Excellence under the National Science Foundation’s Advanced Technological Education Program.
The talent, skills, and spirit of our aerospace technicians provide the workforce for emerging technologies from biotech to alternative energy.

SpaceTEC’s Certified Aerospace Technician program recognizes and validates these contributions by offering industry-endorsed, nationally recognized performance-based certifications.

www.spacetec.org
Bio-Link is a National Advanced Technology Education Center of Excellence focused on Biotechnology

Bio-Link connects Students and Job-seekers to
- Find a biotech program
- Get relevant information about biotech careers
- Get hands-on skills for biotech jobs

Bio-Link connects Instructors and Community Colleges to
- Find professional development opportunities
- Find information for starting and continually improving biotech programs
- Learn from each other

Bio-Link connects Biotech Employers and Industry Representatives to
- Connect to biotech programs
- Find courses for professionals
- Find skilled biotechnicians

www.bio-link.org
Monday Schedule at a Glance

Must be registered to attend Monday preconference events

Tours
8:00 A.M. – 5:00 P.M. (Bus loads 7:30 at Omni entrance)
Historic Cape Canaveral Air Force Station (includes lunch)
1:00 – 5:00 P.M. (Bus loads 12:30 at Omni entrance)
Institute for Simulation and Training, University of Central Florida

1:00 – 4:30 P.M. Workshops
Biotechnology in the Field – Oakmont
Bridging the Gap Between Educators and Employers – Colonial
Computer Forensics in an Afternoon – Congressional
A Systems View of Electronics – Augusta
The Toothpick Factory: A Simulation Game for Soft Skills – ChampionsGate

See the Omni floor plan on pages 62 and 63.
Monday Tours

**Historic Cape Canaveral Air Force Station**

8:00 A.M.–5:00 P.M. *(includes lunch)*

The Cape Canaveral Air Force Station (“The Cape”) has been at the heart of the American space program since its inception. Tour participants will see the launch sites that are forever linked with the exploits of Mercury Seven astronauts Shepard, Glenn, Grissom, Schirra, Slayton, Carpenter, and Cooper. Participants will visit the Cape Canaveral Air Force Space and Missile Museum at historic Launch Complex 26, site of our nation’s first satellite launch, and explore Launch Complex 34, site of the first manned Apollo launch, including the mobile service tower and the original Mission Control Center. The tour will include a catered lunch and lecture at the restored historic blockhouse at Launch Complex 14, location of the four manned launches of the Mercury program, including John Glenn’s first orbital flight. The tour will wrap up with a visit to the SpaceTEC facilities, home of the National Aerospace Technical Education Center and NSF National Resource Center.

**Institute for Simulation and Training, University of Central Florida**

1:00–5:00 P.M.

IST is an internationally recognized research institute that focuses on advancing modeling and simulation technology, and increasing the understanding of simulation’s role in training and education. Founded in 1982 as a research unit of the University of Central Florida, the institute provides a wide range of research and information services for the modeling, simulation and training community. IST’s primary focus is on human-in-the-loop simulation and modeling of human activity. Your “demonstration/hands-on” tour will include visits to the Mixed Emerging Technology Integration Lab; Segway Robots, the Team Performance Lab; and the TeachMe Virtual Reality Lab offering the Virtual Puppeteering to Support Performance under Stress and the Interactive Realities Laboratory.
Monday 1:00–4:30 P.M. Workshops

**Oakmont**

**Biotechnology in the Field: Molecular Tools, Microarrays, and Modern Agriculture**

While many factors that affect agricultural outcomes cannot be controlled—such as temperature, rainfall, and soil types—molecular diagnostics enables biologists to identify crops that are resistant to pathogens and perform best in diverse climates and soil conditions. Biotechnology tools such as microarrays and next generation DNA sequencing techniques support high-throughput data collection, while bioinformatics tools help biologists interpret the results. This workshop will focus on the application of these new technologies in agriculture and viticulture. Participants will work through examples in which microarray data are used to gain new insights into crop production.

Presenter: **Sandra Porter**, Digital World Biology, Bio-Link, San Francisco, CA

**Colonial**

**Bridging the Gap Between Educators and Employers: Developing a Skill Standards Based Curriculum**

Employers need workers who possess the knowledge and skills required by their industries. This workshop will provide how-to information on the development of skill standards for high-tech industries and the use of those standards in generating curricula that meet employer requirements. Participants will learn about processes for forming employer groups, leading employer groups in defining the skills and knowledge required in their industries, and using knowledge and skill requirements as a base for developing curriculum. The workshop will emphasize hands-on activities that enable participants to apply these processes and determine how they can integrate them into campus curriculum initiatives. Technicians will learn how to use skill standards to assess their work readiness and select educational pathways for enhancing their skills.

Presenters: **John Souders**, OP-TEC, Waco, TX  
**Fred Seeber**, Camden County College, Blackwood, NJ  
**Darrell Hull**, University of North Texas, Denton, TX

**Congressional**

**Computer Forensics in an Afternoon**

Participants in this workshop will use their own laptop computers in trying their hands at memory acquisition, finding hidden passwords, and carving data to determine their computers’ usage and history. Participants will also take a journey through case examples highlighting “smoking gun” evidence and the tools used to find it.

Presenters: **Paula Velluto**, Bunker Hill Community College, Charlestown, MA  
**Mark Spencer**, Arsenal Consulting, Boston, MA  
**Christopher Kelly**, Office of the Attorney General Commonwealth of Massachusetts, Boston, MA
A Systems View of Electronics

If you are a technician who is looking to improve your understanding of electronics systems or a technology faculty member who is looking for ways to revitalize your electronics program, you will want to attend this workshop. Participants will hear from and conduct hands-on learning activities with a panel of electronics systems subject matter experts from the NSF-funded project eSyst: A Systems View of Electronics.

Presenters:  
Tom McGlew, eSyst, Phoenix, AZ  
Louis Frenzel, Penton Publishing, Austin, TX  
James Hyder, Intel Corporation, Rio Rancho, NM  
Wayne Phillips, Chabot College, Hayward, CA  
John Robertson, ASU-Polytechnic, Phoenix, AZ  
Keith Sanders, Columbus State Community College, Columbus, OH

The Toothpick Factory: A Simulation Game for Soft Skills

Looking for a new job? The Toothpick Factory is hiring! Manufacturers everywhere need qualified employees. As difficult as it is to find and hire new employees, retaining them is an even greater challenge, not only because they lack technical skills or aptitudes but because of inadequate soft skills. FLATE, Center for Advanced Technology Education, has developed a game—The Toothpick Factory®—that is designed to help close the soft skills competency gap.

The Toothpick Factory® is a hands-on simulation in which players become aware of, exercise, and reflect on soft skills that affect teamwork. In this workshop, teams of participants will be challenged to apply their teamwork, communication, and flexibility skills. The presenters will share ideas that participants can incorporate into their classrooms.

Presenters:  
Marilyn Barger, FLATE, Tampa, FL  
Marie Boyette, FLATE, Tampa, FL  
Jodi Sutton, FLATE, Tampa, FL
Join the CTC for these HI-TEC sessions ...

**Tuesday July 27 (Preconference)**
Turnkey Labs to Implement Green IT and Other ICT Concepts.
Complete four or five “turnkey” labs

**Wednesday July 28 11am – Noon**
Ensuring Success for a New Technical Program - It’s More Than Just Technology

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By 2012, 60% of the 435 million networked devices in the US will be mobile, giving rise to profound growth in mobile network traffic and applications and escalating demand for workers able to build and support mobile converged networks.

~Portia Isaacson Bass, Ph.D., Mobile Market Analyst

[www.greenITcenter.org](http://www.greenITcenter.org)

Mentored College Program • Professional Development • Curriculum

This material is based upon work supported by the National Science Foundation under Grants No. 0402356 and No. 0903239. Any opinions, findings and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.
The ICT Center is preparing students and technicians for the Information and Communications Technologies (ICT) industry where rapidly changing ICT applications are presenting technology opportunities that did not exist a decade ago.

www.ICTCenter.org
BATEC IS CONNECTING...

... Industry, Educators, Students and the Community in open dialog about the future of IT education in the Boston Area.

BATEC IS INSPIRING...

... Students to discover the opportunities that exist for them in IT-related fields.

BATEC IS CHANGING...

... IT education by encouraging Educators & Industry to support each other.

BATEC IS LEADING THE WAY...

... by sharing the knowledge and success of our partners with others.
CyberWatch offers:

— Information Assurance curriculum materials
— Professional development
— Student competitions, internships and mentoring
— K-12 programs
— Membership and partnership opportunities

Visit us at www.cyberwatchcenter.org for more information!

Developing Tomorrow’s ICT Technical Educators Today!

In the information and knowledge economies of the 21st century, individuals and organizations of all kinds increasingly depend on information and communications technologies (ICT).

The Mid-Pacific ICT (MPICT) Center is funded by the NSF ATE program to coordinate, improve and promote increasingly strategic ICT education, with an emphasis on Hawaii and the Pacific Territories.

* Championing ICT
* Developing ICT Faculty
* Building ICT Industry Bridges
* Sharing ICT Best Practices
* Expanding Diversity in ICT
* Building ICT Community
* Harmonizing ICT Curriculum
* Improving ICT Articulation & Transfer
* Sharing ICT Educator Resources
* Improving the ICT Workforce
Tuesday Schedule at a Glance

Must be registered to attend Tuesday preconference events

<table>
<thead>
<tr>
<th>Time</th>
<th>Events</th>
</tr>
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<tbody>
<tr>
<td>8:00–8:30 a.m.</td>
<td>Continental Breakfast – National Ballroom D (Preconference attendees only)</td>
</tr>
<tr>
<td>8:30 a.m.–Noon</td>
<td>Workshops</td>
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<tr>
<td></td>
<td>GIS on a Virtual Desktop Across the Internet in a Secure Environment – Congressional</td>
</tr>
<tr>
<td></td>
<td>Improving Technician Education With E-Materials – Colonial</td>
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<tr>
<td></td>
<td>Teaching Interactive Control Design, Mechatronics, and Robotics Concepts – Augusta</td>
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<tr>
<td></td>
<td>Turnkey Labs to Implement Green IT and Other ICT Concepts – Olympic</td>
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<td></td>
<td>The World of Microsystems Fabrication – ChampionsGate</td>
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<tr>
<td>Noon–1:00 p.m.</td>
<td>Preconference Lunch – National Ballroom A (Preconference attendees only)</td>
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<tr>
<td>1:00–4:30 p.m.</td>
<td>Workshops</td>
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<tr>
<td></td>
<td>Emerging Technology Content: Not Just for College Anymore – ChampionsGate</td>
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<td></td>
<td>Life Support and Sustainable Living Project – Oakmont</td>
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<td>Sensor Networks: The Enabling Technologies of the Smart Grid – Congressional</td>
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<td></td>
<td>Teaching Circuit Design, Sensors, and Instrumentation – Augusta</td>
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<tr>
<td></td>
<td>The Science and Technologies of Energy Efficient Building – Colonial</td>
</tr>
<tr>
<td>4:45–6:00 p.m.</td>
<td>(All attendees)</td>
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<tr>
<td></td>
<td>FLATE and Florida’s High-Tech Industries Welcome Session / Displays / Reception – National Ballroom A</td>
</tr>
</tbody>
</table>

See the Omni floor plan on pages 62 and 63.
Tuesday Preconference
Continental Breakfast
8:00–8:30 a.m., National Ballroom D (Preconference attendees only)

Tuesday 8:30 a.m.–Noon Workshops

**Congressional**

**GIS on a Virtual Desktop Across the Internet in a Secure Environment**

This workshop will discuss and demonstrate remote desktop application servers and issues involved in GIS applications and distance learning. Virtual desktops can be used in both on- and off-campus environments. Connecting with a server in Louisville, KY, participants will use ArcInfo to create basic maps that can be used within their institutions along with base map services delivered from virtual servers running ArcGIS Server. Participants will learn how to geocode institutional data, how to query student attributes such as major, and how an institution can use data to make informed decisions. Participants will also learn how to count the number of students living within a boundary, so that student population can be compared with census demographics such as income, ethnic background, and rural/urban settings. Additional material will be placed online and usernames given so that participants can continue learning more about this evolving field.

Presenter: **Vince DiNoto**, GeoTech, Louisville, KY

**Colonial**

**Improving Technician Education With E-Materials and Innovative, On-Line Teaching Strategies**

The cost of textbooks limits many students' access to postsecondary technical education. One way to reduce the cost of textbooks is to offer them in e-book formats which eliminate the expense of production, inventory, and shipping. E-books also provide an opportunity to include digital enhancements to improve student learning. E-books are the first step towards e-learning delivery systems, which may include remote labs and interactive teaching practices. This workshop will explore the rationale, tools, formats, enhancements and equipment for e-books and e-learning systems that are especially appropriate for technician education. Participants will learn about technical education e-books, e-learning, and operation of remote labs via the Internet.

Presenters: **Daniel Hull**, OP-TEC, Waco, TX  
**Robert Ehrmann**, NACK Center, University Park, PA  
**Gordon Snyder**, ICT Center, Springfield, MA  
**Robert Tinker**, Concord Consortium, Concord, MA
Teaching Interactive Control Design, Mechatronics, and Robotics Concepts With NI LabVIEW and NI ELVIS

Robotics and mechatronics are becoming increasingly popular applications in industry. This trend presents an opportunity for engineering technology programs to teach controls, mechatronics, and robotics concepts. In this workshop, participants will explore multiple control plants from Quanser that can be used to demonstrate and teach control and robotics concepts. The plants will be based on the NI ELVIS design and prototyping platform and NI LabVIEW, which provide state-of-the-art instrumentation tools and programming capabilities that are essential in teaching controls, mechatronics, and robotics concepts to budding technicians.

Presenter: Shekhar Sharad, National Instruments, Austin, TX

Turnkey Labs to Implement Green IT and Other ICT Concepts

During this session, participants will complete four or five “turnkey” labs that are ready to use in information and communication technology programs. Emphasis will be on virtualization (desktop, server, and storage), voice over IP, and DHTI.

Presenters: Peter Brierley, CTC, Collin College, Frisco, TX
Bill Saichek, Orange Coast College, Costa Mesa, CA
Timur Mirzoev, Georgia Southern University, Statesboro, GA
Ernest Friend, Florida State College, Jacksonville, FL
Ann Beheler, CTC, Porterville College, Porterville, CA

The World of Microsystems Fabrication: How Microelectromechanical Devices Are Made

Microsystems technologies rely on a plethora of microfabrication processes used to create small electromechanical devices. These devices are used in products such as game controllers, crash and navigation systems, smart phones, biomedical and microchemical sensors and actuators, cell phones, printers, and projectors, to name a few. Technicians who work in these and related fields must not only have a basic knowledge of electronics, packaging, and systems integration technologies but must understand what it takes to manufacture these cutting-edge components.

This workshop will cover fabrication methods including surface, bulk, and LIGA micromachining. Because these technologies are multidisciplinary, they give students a reason to apply themselves in all STEM disciplines.

Presenters: Matthias Pleil, SCME, Albuquerque, NM
Fabian Lopez, SCME, Albuquerque, NM
Tuesday Preconference Lunch

Noon–1:00 p.m. – National Ballroom A (Preconference attendees only)

Partnering with businesses, schools and colleges to help prepare students for an exciting career in manufacturing and engineering.

PARTNERS:

- Community College of Baltimore County
- Chesapeake College
- The College of Southern Maryland
- Harford Community College
- Wor-Wic Community College
- The Regional Manufacturing Institute

For more information, visit www.time-center.org or call 443-840-5301.
Tuesday 1:00–4:30 P.M. Workshops

**ChampionsGate**

**Emerging Technology Content: Not Just for College Anymore—A Case Study of High School Implementation**

The development of educational material (including slides, text, experiments and demos) is a portion of almost every ATE funded project. In most cases, this material is initially created for the two-year college student. The translation or integration of the created content to high school students is often an intended goal for the project, but one that can often be difficult to meet. This workshop will follow the path of one learning object from semiconductor ATE project to nanotechnology ATE project to modification and high school implementation. The methodologies, approaches, decision points and lessons learned will be discussed in this workshop.

**Presenters:** Deb Newberry, Nano-Link, Rosemount, MN
Kristi Jean, Nano-Link, Fargo, ND
Matthias Pliel, SCME, Albuquerque, NM

**Oakmont**

**Life Support and Sustainable Living Project: Professional Skills, Industry, and Higher Ed**

Participants in this workshop will learn how to integrate professional skills such as interpersonal and teambuilding skills into technology projects. The workshop will include the DISC Behavioral Model which has been used successfully in helping college students gather a better understanding of themselves and others and applying that knowledge to participate in highly effective teams. Team exercises will be used to help facilitate the learning process. The workshop will include best practices developed for a Summer Teachers Workshop at the United States Coast Guard Academy (USCGA) that has successfully integrated the program being presented.

**Presenters:** Karen Wosczyna-Birch, Life Support and Sustainable Living Project / RCNGM, Hartford, CT
John Birch, Life Support and Sustainable Living Project / RCNGM, Hartford, CT
Mehrdad Faezi, Life Support and Sustainable Living Project, Manchester, CT

**Congressional**

**Computer equipment is provided by Seminole State College of Florida with technical support provided by SSCF students.**

**Sensor Networks: The Enabling Technologies of the Smart Grid**

This hands-on workshop will present an overview of the basic architecture and functionality of the Department of Energy’s Smart Grid initiative (funded in part by the American Recovery and Reinvestment Act of 2009) and discuss the underlying enabling technology—sensor networks. After a brief introduction to the Smart Grid and its relationship to alternative energy sources, basic sensor network technology concepts will be presented. Participants will construct simple hardwired (LAN) and wireless sensor networks and sensor network systems like those envisioned for the Smart Grid using both LAN connectivity and ZigBee wireless technology. The workshop will wrap up with a quick look into the future of intelligent infrastructure. Emphasis will be given to building automation and transportation applications (VANET).

**Presenter:** Gary Mullett, Springfield Technical Community College, Springfield, MA
Teaching Circuit Design, Sensors, and Instrumentation with LabVIEW, Multisim, and NI ELVIS

Sensor measurements, instrumentation, and circuit design and analysis form a key area in today’s engineering technology programs. In this workshop, participants will explore the leading integrated platform for teaching and using sensors measurements, instrumentation, and circuit design in a hands-on environment—NI LabVIEW, NI Multisim, and NI ELVIS. Participants will build and simulate commonly taught circuits with NI Multisim, a SPICE simulation and schematic capture tool. They will then implement the circuits using real-world components on the NI ELVIS, a design and prototyping platform with integrated instruments, and test the system with NI LabVIEW. Participants will come away from the workshop with the ability to use these industry standard tools in providing relevant laboratory experiences to budding technicians.

Presenter: Sandra Tso, National Instruments, Austin, TX

The Science and Technologies of Energy Efficient Building

The design and construction of buildings that limit their impact on the environment (“green buildings”) must address factors such as heat transfer, moisture movement, and air and vapor pressures. Impacts on the quality of the indoor environment must also be considered. Topics covered in this workshop will include basic building science principles, building systems and functions, diagnostic testing of building envelopes and air distribution (duct) systems, resource-efficient approaches to energy and water, and factors that impact indoor environmental quality. The workshop will also include a review of current green building standards and certifications. The Green Advantage certification program and training curriculum offered through the National Center for Construction Education and Research (NCCER) will be included.

Presenter: Craig Miller, FLATE, Gainesville, FL
FLATE and Florida’s High-Tech Industries
Welcome Session / Displays / Reception

Tuesday, 4:45–6:00 p.m. – National Ballroom A

Panel
High-Tech Hotspots—Industry and Education in the Sunshine State
Join FLATE (Florida Advanced Technological Education Center)—a National Science Foundation regional center of excellence focused on high-technology education in Florida for a dynamic industry panel discussion focused on exploring the current and future state of Florida’s high-tech industry. Industry panelists representing biomedical devices, clean energy, aerospace, advanced manufacturing and information technology will explore the relationship of GDG to productivity; STEM education imperatives; and the economic impact of new product development.

In addition to the panel discussion, enjoy a networking reception and displays of Florida’s State and Community Colleges showcase programs that support these cutting edge industries. (Displays will be available for viewing throughout the conference.)

Moderator
MICHAEL D. WHITT is chair of the Department of Engineering at Miami Dade College, where he has been responsible for development of the first baccalaureate degree in engineering technology.

Panelists
TIM ANDERSON is a distinguished professor in the Department of Chemical Engineering, University of Florida, which he joined after receiving his PhD at the University of California-Berkeley in 1980. He is editor of the Chemical Engineering Education journal.

JAIME BORRAS has founded two technology start-ups and is currently COO of GenerationOne, a wireless, mobile health monitoring solutions company. While at Motorola, he served as senior fellow, corporate vice president, and chief technology officer of iDEN Mobile Devices.

GEARY A. HAVRAN is chairman of the board, co-founder, and president of NDH Medical, Inc., a medical device contract manufacturer located in St. Petersburg, Florida. Mr. Havran is the current chairman of the Florida Medical Manufacturers’ Consortium.

ELI TORRES is technical support manager for the commercial systems group at Rockwell Collins, where his main focus is lab engineering support to aid in development projects from satellite navigation to airborne communications. Prior to Rockwell, Mr. Torres worked on the design of large-scale data routers at Lucent Technologies.

Reception sponsored by:
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Partner: University of Minnesota
Contact: Deb Newberry, deb.newberry@dctc.edu

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### Wednesday Schedule at a Glance

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
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<tbody>
<tr>
<td>8:00–8:30 a.m.</td>
<td>Continental Breakfast</td>
<td>National Ballroom AB</td>
</tr>
<tr>
<td>8:30–10:00 a.m.</td>
<td>Keynote: Story Musgrave</td>
<td>National Ballroom AB</td>
</tr>
<tr>
<td>10:00–11:00 a.m.</td>
<td>Refreshment Break/View Exhibits/Prize Drawing</td>
<td>National Ballroom CD</td>
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</tbody>
</table>
| 11:00 a.m.—Noon Sessions | A Modular Approach to Curriculum Creation and Dissemination – Augusta A  
1 B: Ensuring Success for a New Technical Program – Augusta B  
1 C: Put the Federal Government to Work for Energy – Oakmont  
1 D: The Next Generation of Manufacturing – Congressional  
1 E: Educating Employed Technicians – Colonial  
1 F: Cyber Security Remote Lab Environments – Olympic  
1 G: Certification for Geospatial Technologies – ChampionsGate |
| Noon–1:30 p.m.| Awards Luncheon                                                      | National Ballroom AB  |
| 1:30–2:30 p.m.| Sessions                                                             | National Ballroom AB  |
| 2:30–3:00 p.m.| Refreshment Break/View Exhibits/Prize Drawing                        | National Ballroom CD  |
| 3:00–4:30 p.m.| Sessions                                                             | National Ballroom AB  |
| 4:30–6:00 p.m.| Reception in the Technology Showcase/Prize Drawing                   | National Ballroom CD  |
| 6:00–7:00 p.m.| Sessions                                                             | National Ballroom AB  |

See the Omni floor plan on pages 62 and 63.
Wednesday Continental Breakfast
8:00–8:30 A.M. – National Ballroom AB (All attendees)

Wednesday Morning Keynote:
Story Musgrave
8:30–10:00 A.M. – National Ballroom AB
Keynote speaker provided by SpaceTEC; color guard provided by University of South Florida ROTC under the direction of Captain Jennifer Simpson

My 35 Years with That Machine: The Hubble Space Telescope

Story Musgrave was born in 1935 on a dairy farm in Stockbridge, MA. He was in the forests alone at three and by five floated his homebuilt rafts on the rivers. He rode combines at five, drove trucks and tractors at ten and when alone in remote fields, repaired them by 13. Story never finished school and ran off to Korea with the U.S. Marines where he was an aircraft electrician and an engine mechanic. He started flying with the Marines and over the next 55 years accumulated 18,000 hours in over 160 aircraft.

He is a parachutist with over 800 freefalls. He has seven graduate degrees in math, computers, chemistry, medicine, physiology, literature, and psychology. He has been awarded twenty honorary doctorates. He was a part-time trauma surgeon during his 30-year astronaut career.

Story was a NASA astronaut for over 30 years and flew on six spaceflights. He performed the first shuttle spacewalk on Challenger’s first flight, was a pilot on an astronomy mission, conducted two classified DOD missions, was the lead spacewalker on the Hubble Telescope repair mission and on his last flight, he operated an electronic chip manufacturing satellite on Columbia.

Today he operates a palm farm in Orlando, FL, a production company in Sydney, and a sculpture company in Burbank, CA. He is also a landscape architect, a concept artist with Walt Disney Imagineering, an innovator with Applied Minds Inc. and a professor of design at Art Center College of Design in Pasadena, CA. Story also performs multimedia presentations on topics such as vision, leadership, motivation, safety, quality, innovation, creativity, design, simplicity, beauty, and ecology. He has seven beautiful children: Lorelei, Scott, Holly, Todd, Jeff, Lane, and Story, ranging from age 48 to two years; three beautiful grandchildren, and a beautiful wife Amanda.

Refreshment Break/View Exhibits
10:00–11:00 A.M. – National Ballroom CD (All attendees)
Prize drawing at 10:30 A.M.
Wednesday 11:00 A.M.–Noon Sessions

**SESSION 1A**
Augusta A

**A Modular Approach to Curriculum Creation and Dissemination: Addressing Educator and Industry Needs**

Curriculum content is usually created on a course-by-course basis, resulting in entire 16-to-18-week courses. This is true of traditional as well as emerging technology disciplines. However, the exponential growth of technology and the multifaceted aspects of industry-niche-specific knowledge, skills, and abilities require a more agile approach to content creation, “packaging,” and dissemination. Educators must be able to efficiently pull together content that is applicable to student learning levels and industry needs. The Nano-Link Center is packaging and disseminating nanotechnology educational materials in stand-alone modules with integrated teacher guidelines, slides, activities, and questions. A network of over 80 modules has been created for nanotechnology encompassing electronics, materials, and biotechnology. This session will discuss the approaches and processes used by Nano-Link in creating modular content as well as challenges, successes, and lessons learned.

Presenters: **Deb Newberry**, Nano-Link, Rosemount, MN  
**Kristi Jean**, Nano-Link, Rosemount, MN

**SESSION 1B**
Augusta B

**Ensuring Success for a New Technical Program—It’s More Than Just Technology**

This session will be a panel discussion of elements required for successful implementation of a new technical program, including establishing the need for the program, recruiting and engaging an active business advisory council, identifying the skills that graduates will need to be immediately employable, mapping skills to identify gaps in existing curricula, creating curriculum to address gaps, identifying sources for financial support, obtaining administrator support within the sponsoring college(s), and recruiting and retaining students. Printed materials outlining successful practices will be distributed and questions will be answered.

Presenters: **Ann Beheler**, CTC, Porterville College, Porterville, CA  
**David Keathley**, University of North Texas, Denton, TX  
**Eliazar Martinez**, El Centro College, Dallas, TX  
**Ann Blackman**, CTC, Frisco, TX

**SESSION 1C**
Oakmont

**Put the Federal Government to Work for Energy: Programs and Partnerships**

Workforce development, training and certification, and regional economic development are keys to the greening of the American energy-related workforce. This panel discussion will describe how federal agencies are partnering with each other, and with industry and educational institutions in the energy sector.

Presenters: **Michael Lesiecki**, MATEC, Phoenix, AZ  
**Danielle Sass Byrnett**, U.S. Environmental Protection Agency, Washington, D.C.  
**Nicole Reed**, White House Council on Environmental Quality, Washington, D.C.
The Next Generation of Manufacturing

The Regional Center for Next Generation Manufacturing (RCNGM) addresses the need for highly skilled workers in the new manufacturing workplace by building programs that provide resources for educators and students interested in learning new technologies in manufacturing. Today's manufacturers use state-of-the-art technology, requiring higher skill levels and cross-training. Jobs are no longer repetitive and offer opportunities for advancement. Manufacturing generates the strongest growth of any economic sector in the U.S., and 84 percent of manufacturers expect up to one-fourth of their workers to retire within the next five years. RCNGM offers a technology curriculum designed to help community college students meet the changing needs of the manufacturing industry.

Presenter:  Karen Woszyna-Birch, RCNGM, Hartford, CT

Educating Employed Technicians

Rapidly changing technical fields require technicians to have new or different knowledge and skills—especially in an enabling technology such as photonics. Because some employers do not have photonics technicians and cannot recruit them, they are transferring technicians from other fields or hiring technicians with related backgrounds. There is currently a need for photonics education and training for 600–1000 employed technicians in the U.S. Other technologies are experiencing similar needs. This presentation will address the education and training issues that are common to employed technicians and will examine two critical factors: (1) What should be taught—special applications or fundamentals? (2) How can course delivery meet the needs of employed workers?

Presenter:  Greg Kepner, Indian Hills Community College, Ottumwa, IA

Cyber Security Remote Laboratory Environments

This presentation will demonstrate the results of an ongoing partnership between the technical staff of the Center for System Security and Information Assurance (CSSIA) and the Network Development Group (NDG) in developing a solution with a well-developed front-end management system for teaching cyber security concepts. The presenters will demonstrate scalability for classroom use and integrate flexibility that will enable this type of solution to be used to create virtual competition environments.

Presenters:  Erich Spengler, CSSIA, Palos Hills, IL  
 John Sands, CSSIA, Palos Hills, IL  
 Rich Weeks, Network Development Group, Morrisville, NC

Certification for Geospatial Technologies: The GIS Certification Institute (GISCI) and Its Value Within the Geospatial Community

The GISCI certification program was created to establish GIS as a profession and provide a means to attain recognition for professional competence in the field. The program also helps working professionals maintain currency in GIS technology and methods, ensure ethical behavior within the profession, and provide a basis for judging the validity of allegations against GIS practitioners. It will help prospective employers assess and hire GIS professionals, ensure that those who produce geographic information have a core knowledge, and assist aspiring GIS professionals in choosing educational opportunities. This presentation will explain the process of becoming a GIS professional.

Presenter:  Rodney Jackson, GeoTech Center, Charlotte, NC
Wednesday Awards Luncheon

Noon–1:30 P.M. – National Ballroom AB (All attendees)

Educator of the Year Award

Recipient: **Mike Mann**, Co-PI, Consortium for Alabama Regional Center for Automotive Manufacturing (CARCAM)

Mike Mann is Technical Division Chair and an Industry Training Specialist at Central Alabama Community College (CACC). Mann has over 20 years of industrial experience as an engineering manager and more than 17 years of workforce-related experience. He has extensive knowledge of robotics, PLCs, occupational health and safety, hydraulics, and pneumatics. Mann conducts the annual CARCAM-sponsored STEM camps for local high school students at CACC and is the regional industry contact for educational advisement.

Mann has a diverse range of scientific, industrial, management, and education experience. He has progressive responsibility in technical management and education specializing in machine design and maintenance, production reliability, automation, research and development, and applications of technology in manufacturing environments.

Mann is heavily involved in workforce and economic development. He regularly promotes technology awareness in high schools and actively recruits industry partners within the region. His involvement includes First Robotics STEM Camps, Two-Year Colleges in the Twenty-First Century (TYC21), and the National Science Foundation’s initiative to increase enrollment in technical classes. Mann was named a member of the Alabama representative group Engineering Education Partnership of Alabama (EEPA). He maintains working relationships with multiple universities and technology centers including the Oakridge National Laboratories.

Industry Recognition Award

Recipient: **Caren L. Caton**, Assistant General Manager, Toyota Motor Engineering and Manufacturing North America

Caren Caton has led Toyota’s North American production and training efforts for the last five years. During that time she has championed the standardization of technical training, promoted industry/college partnerships, facilitated the donation of equipment and resources with the local college partner, and been instrumental in the startup of the Automotive Manufacturing Technical Education Collaborative (AMTEC). As AMTEC was forming, Caton invited other automotive manufacturers, suppliers, and colleges from across the nation to Toyota’s North American Production Training Center to help foster the spirit of collaboration.
that is needed to move forward nationally. This collaborative environment has brought industry and education closer in creating meaningful and sustainable education programs that will help keep American manufacturing globally competitive.

AMTEC would not have been funded without Caton’s passion for increasing the skill level and effectiveness of employees industrywide. Because of her skill in working with organizations throughout the industry, she has been instrumental in scaling AMTEC’s activities to a national level.

Caton was instrumental in developing a college/industry partnership model that creates a framework for collaboration that can raise the quality, productivity, and innovation of the entire industry while addressing challenges such as environmental impacts, transportation in developing countries, increasing economic pressures, and socio-political issues.

**Innovative Program Award**

Recipient: **Marilyn Barger**, Executive Director, Florida Advanced Technological Education (FLATE) Center of Excellence

FLATE is a national leader in reforming technical education to meet the needs of advanced manufacturers in Florida. FLATE has been on the cutting edge of building partnerships with industry, education, and the public workforce investment system to develop advanced manufacturing and engineering technology career pathways. These pathways integrate the National Association of Manufacturers (NAM)-Endorsed Manufacturing Skills Certification System (SCS) with an academic program of study to ensure that students graduate with nationally portable, third-party-validated credentials with real value in the workplace.

Dr. Barger, Bradley Jenkins of St. Petersburg College, and Dr. Richard Gilbert of the College of Engineering at the University of South Florida (FLATE’s leadership team), working together with state and community colleges and the Florida Department of Education, developed a model Engineering Technology Associate of Science Degree program that is sensitive to both workforce and academic student needs. From a workforce perspective, a common core curriculum prepares students for a national industry credential. From an academic perspective, it provides a unified statewide, articulated engineering technology degree. The flexible degree offers eight different specializations for the second-year curriculum, allowing colleges to focus on the technologies important to their local stakeholders. FLATE crafted the first of its kind statewide articulation of college credit for a nationally recognized industry certification, allowing incumbent workers to earn 15 credit hours when they hold a current credential. The Engineering Technology A.S./A.A.S. Degree in Florida has been adopted and implemented by 10 colleges since its approval in December 2007. To support the ET Degree, FLATE created and is deploying a unified marketing campaign that provides a single message for high-technology industry employers as well as potential students throughout Florida.
Using Blended Learning for Teaching Biomanufacturing Students: Virtual and Hybrid Chromatography Lab

Participants will be introduced to a simulation-based virtual laboratory designed to study affinity chromatography using the BioLogic LP Chromatography, as well as innovative assessment tools. The virtual lab enables students to perform authentic practice tasks online and provides associated simulations, biomolecular visualization, and other instructional resources. It also facilitates “just-in-time learning” of underlying fundamental and applied processes as they occur. The presenters will demonstrate and discuss instructional strategies recommended for the use of blended activities in biomanufacturing education. Participants will also learn how to integrate the virtual chromatography lab with traditional hands-on experiments and technology curricula. Each participant will receive a complimentary CD containing a trial version of the lab and associated online resources.

Presenters: Sonia Wallman, NBC2, Portsmouth, NH
Yakov Cherner, ATeL, LLC, Swampscott, MA

Broadening the Impact to Industry and Education: Utilizing the Synergy Project to Lean SCME Workshops and Instruction

The Southwest Center for Microsystems Education (SCME) has engaged industry in the design of its instructional materials and workshops. Utilizing lessons learned from the Synergy Project for Research, Practice, and Transformation and “lean” manufacturing methodologies, SCME has created high-impact educational offerings that are duplicable by other projects and centers. Specifically, utilizing the concepts of Training Within Industry’s Job Instruction, students and incumbent technicians alike not only receive an educational overview from workshops, but utilize training they receive to demonstrably bring these skills back to industry (thus attracting additional industry support). Additionally, SCME has directly benefited from these “leaning” efforts. The presentation will provide an overview of the transformation of select SCME workshops, brief case studies demonstrating the methodologies used to transform them, and a hands-on activity demonstrating how other projects and centers can duplicate and benefit from these results.

Presenters: James Hyder, SCME, Albuquerque, NM
Matthias Pleil, SCME, Albuquerque, NM

Technicians Speak About Technical Education

Back by popular demand, this session will feature technical professionals from different fields who will provide insights into their technical education. The audience will listen for the first half of the session and actively participate in the second half. The technical professionals will speak candidly about their skill preparation. The audience will hear about technical careers and learn what is important for educating the technical workforce.

Presenters: Elaine Johnson, Bio-Link, San Francisco, CA
Terryll Bailey, The Allison Group, Seattle, WA


Session 2D  
Congressional  

Automotive Manufacturing Technology: CARCAM Builds Effective Alliances with Scarce Resources Using the Curriculum Process As the Glue  
This presentation will discuss how the CARCAM Regional Center designs, develops, and implements an automotive manufacturing technology (AUT) degree program through its nine member colleges. Presenters will describe the methodology of the core curriculum process and illustrate how the member colleges maintain their autonomy by designing modular curriculum elements that meet local manufacturing industry requirements.  
Presenters:  
Ted Davis, CARCAM, Gadsden, AL  
Don Greer, CARCAM, Gadsden, AL  
Mike Mann, CARCAM, Gadsden, AL

Session 2E  
Colonial  

Designing and Building Electric Guitars Gives High School Students a Taste of Engineering  
High school students get a taste of engineering technologies by designing and building their own electric guitars in a course offered by Illinois Valley Community College. Supported by an NSF grant, the Taste of Engineering Careers (TEC) course, which is offered for college credit, utilizes a high-interest project to engage students in a variety of technical areas. Presenters will demonstrate how this project-based course serves as a valuable tool in recruiting and educating America’s technical workforce by creating and maintaining interest in engineering technology and by building students’ technical confidence. Session attendees will learn how to plan, organize, publicize, offer, and assess similar projects and courses.  
Presenters:  
Dorene Perez, Illinois Valley Community College, Oglesby, IL  
Jim Gibson, Illinois Valley Community College, Oglesby, IL  
Rose Marie Lynch, Illinois Valley Community College, Oglesby, IL  
Sue Caley Opsal, Illinois Valley Community College, Oglesby, IL

Session 2F  
Olympic  

Utilizing High-Tech Software via the Internet  
This presentation will demonstrate and discuss the use of Microsoft Terminal Services to deliver high-end software to students via the Internet while maintaining the legal copy limits. Uses of this type of software delivery in two-year technician education will be discussed for traditional, hybrid, and online courses. Any student who uses this application for software delivery resides inside the college firewall and thus has access to on-campus services. In addition, only one copy of the software is running. Thus the updating and patching of the software requires working with only a single copy. Virtualization and sizing of servers will be discussed.  
Presenters:  
Vincent DiNotto, GeoTech Center, Louisville, KY  
Phillip Davis, GeoTech Center, Corpus Christi, TX

Session 2G  
ChampionsGate  

A Forum on Technology Education (Sponsored by the National Science Foundation)  
This forum will address the following questions: What do technicians need to know, and need to be able to do, and how do we know? What is industry’s view of technology education for technical professionals? What struggles must deans and presidents face in deciding to create and sustain technology programs?  
Presenter:  
Mike Lesiecki, MATEC, Phoenix, AZ
Wednesday Afternoon Refreshment Break/View Exhibits

2:30–3:00 p.m. – National Ballroom CD (All attendees)
Prize drawing at 2:45 p.m.

Wednesday 3:00–4:30 P.M. Sessions

**Session 3A**
**Augusta A**

The Engineering Challenge with U.S. Coast Guard Collaboration
The United States Coast Guard Academy, in collaboration with the Regional Center for Next Generation Manufacturing (RCNGM), offered a weeklong Engineering Challenge, a residential program designed to help teachers help their students develop the skills necessary to become qualified and productive engineers and technicians in the 21st century. The Engineering Challenge educated teachers on how to teach the following: problem-based learning projects centered on U.S. Coast Guard missions and robotics, development of effective teams, professional skills (including technical writing), interpersonal skills (including understanding behavior diversity using DISC profiling), and personal accountability. In addition to the traditional classroom setting, teams were led by U.S. Coast Guard faculty, RCNGM college faculty, and project management professionals.

Presenter: Karen Wosczyna-Birch, RCNGM, Hartford, CT

**Session 3B**
**Augusta B**

A Multifaceted Approach to Increasing Student Retention
Two important factors that lead to high graduation rates in college technical programs are recruitment and retention. Recruitment fills the student pipeline with prospective graduates and retention keeps the pipeline full through graduation. This presentation will focus on retention and explore strategies that can enhance college administrator and faculty efforts in this area. These strategies will include curriculum design ideas that give students early opportunities in their programs to delve into exciting and interesting aspects of their chosen technical areas, techniques for overcoming the math barrier, insights on faculty mentoring, and a peer tutoring system that encourages student bonding. The presentation will be interactive, will encourage educators to discuss their retention strategies, and will solicit technician input on what assisted them in becoming graduates.

Presenters: Chrysanthos Panayiotou, Indian River State College, Ft. Pierce, FL
Gary Beasley, Central Carolina Community College, Dunn, NC
**Enzymes and Biofuels: Go from Grass to Gas!**

Need energy? This session will reveal the power of enzyme kinetics by illustrating the theory through a real-world application to biofuels. Participants will learn about a new laboratory activity for exploring biofuels using one of the key enzymes in biofuel production—cellobiase. The enzyme-substrate model system tests the ability of an enzyme to increase the rate of conversion of a clear substrate to a colored product. Various conditions that impact enzyme reaction rates can also be tested (temperature, pH, and concentrations of the substrate and enzyme). An independent inquiry activity using mushroom extracts will also be discussed. Enzymes play a critical role in many biomanufacturing processes. This session will explore the use of enzymes in manufacturing and biofuel production.

Presenter: **Sherri Andrews**, Bio-Rad Laboratories, Hercules, CA

**Robotics Manufacturing Technology: The National Robotics Training Center Advances Technician Training**

NRTC is exploring the crosswalk between manufacturing and the latest advances in military unmanned, mobile robots. The presenters will share an update on the unmanned systems industry, the approach used to develop a curriculum and certification program, and research on robotics manufacturing technician employment trends. The need for a national approach to robotics technician education will also be explored.

Presenters: **Charles Muse**, National Robotics Training Center, Florence, SC  
**Bill Bennett**, National Robotics Training Center, Florence, SC  

**Engineering Technology Policy: Florida Forum for Engineering Technology—A Vehicle for Change**

This session will provide an overview of the structure and operating characteristics of the Florida Engineering Technology Forum as a model for organizations in other disciplines and career clusters in Florida and other states. The ET Forum impacts Florida Department of Education policies and processes and effects statewide change. The session will transition into a sample meeting in which attendees will be invited to join a discussion of topics of interest to the group as a whole. The discussion will be led by representatives of technology programs in Florida. The session will close with a question and answer period.

Presenter: **Brad Jenkins**, FLATE, Clearwater, FL
How to Steal Web Passwords and How to Protect Yourself—Hands-On Training

Many websites mix secure and unsecure content on the same page (e.g., Facebook). This makes it possible to steal data easily using Moxie Marlinspike’s new SSLstrip tool. This tool acts as a proxy server and converts secure page elements into unsecure ones. The presenter will explain and demonstrate how the “attack” works. Attendees will be invited to connect to the network wirelessly and see how easily their passwords can be stolen. The presenter will show attendees how the Safe Firefox plug-in can protect users from attack and guide attendees through the process of installing and using it. Time permitting, the session will also cover ways to defeat secure connections, such as wildcard certificates. Step-by-step instructions will be given so that attendees can set up the attack in their classes.

Presenter: Sam Bowne, MPeC, San Francisco, CA

A Forum on Technology Education (Sponsored by the National Science Foundation)

This forum will address the following questions: What do technicians need to know, and need to be able to do, and how do we know? What is industry’s view of technology education for technical professionals? What struggles must deans and presidents face in deciding to create and sustain technology programs?

Presenter: Mike Lesiecki, MATEC, Phoenix, AZ

Technology Showcase Reception/
View Poster Sessions

Wednesday 4:30–6:00 P.M. – National Ballroom CD (All attendees)

Don’t miss networking opportunities with exhibitors and colleagues—and good food. Prize drawing at 5:00 P.M.

For a list of exhibitors, see pages 56–59.
Planning an NSF ATE Resource Center for Deaf and Hard-of-Hearing Students
The National Technical Institute for the Deaf, a college of the Rochester Institute of Technology, was awarded an ATE planning grant for developing a national resource center. The goal of the center is to increase the number of deaf and hard-of-hearing technicians entering the high-technology fields that drive our nation's economy. The center will serve as a resource for high schools and community colleges that enroll deaf and hard-of-hearing students in STEM-related technical programs and for employers that hire deaf and hard-of-hearing individuals. During this poster session, we will share our plans for the center and solicit feedback from conference attendees on how we could improve those plans. We will also explore linkages with conference attendees who would be interested in partnering with our center.

Presenters: Donna Lange, Center for Advancing Technological Education for the Deaf, Rochester, NY
Myra Pelz, Center for Advancing Technological Education for the Deaf, Rochester, NY
Gary Long, Center for Advancing Technological Education for the Deaf, Rochester, NY
Ron Till, Center for Advancing Technological Education for the Deaf, Rochester, NY

Using Virtual Reality Technology to Educate Aircraft Maintenance Technicians
In the past, technology has been used to close the gap between aviation education and workforce preparedness in the hangar environment. These efforts have focused on providing technology-based solutions using multimedia or low-fidelity simulators to support curriculum applications. These solutions do not always provide a holistic view of the complex maintenance environment. To address these limitations, technology incorporating interactive three-dimensional (3D) objects was proposed. Our study has explored the use of virtual reality (VR) as an educational tool for preparing NexGen aircraft maintenance technicians. The poster outlines collaborative efforts of Greenville Technical College and Clemson University to create an immersive, holistic, and virtual educational environment. Furthermore, it reports on a study that has evaluated the transfer effects of VR in meeting learning outcomes.

Presenters: Carl Washburn, SC ATE, Greenville, SC
Anand Gramopadhye, Clemson University, Clemson, SC
Kapil Chalil Madathil, Clemson University, Clemson, SC
Melissa Zelaya, Clemson University, Clemson, SC

Understanding Microarrays: An Important Part of the Biotechnology Tool Kit
Biotechnologists are making increasing use of molecular diagnostic tools for interrogating biological systems. Microarrays illustrate the types of analyses that can be carried out when several pieces of genetic information become available. This poster will present four steps in analyzing microarray data from a gene expression assay and discuss the underlying bioinformatics tools and information needed to perform these types of analyses. The story presented in the example shows how we can use microarray analyses to gain insights into the way plants respond to drought. Studies such as this will be helpful in identifying and creating more drought-tolerant plants.

Presenter: Sandra Porter, Bio-Link, Seattle, WA
sTEm at Work: A Campaign to Put a Little T&E Into S&M

Most applications of STEM in K-12 education do have a bit of technology and engineering but still just highlight science and math independently. To be sure, students entering A.S. programs do not have math and science backgrounds that facilitate their technical degree studies or enough fundamental knowledge to act as informed citizens relative to modern technology. Thus, any additional exposure to math and science would be a big bonus. However, the current interest in STEM will quickly follow existing math and science implementation models with the technology and engineering at best becoming step-cousins with no slippers let alone ball to attend. This poster illustrates a set of “sTEm-at-Work” challenges and puzzles that focus on the integration of science and math with technology and engineering.

Presenters: Richard Gilbert, FLATE, Tampa, FL
Marilyn Barger, FLATE, Tampa, FL
Andrew Hoff, FLATE, Tampa, FL
Jose Rey, FLATE, Tampa, FL

Composite Workshops for Technician Training and STEM Applications

Brevard Community College engineering technology program partnered with the Center for Advanced Materials (CEAM) at Florida State University to develop the workforce component of that center. The Center of Excellence was funded by the State of Florida program to support applied research at state universities that could evolve into economic development activities in high-technology industry sectors. Since 2007, Brevard CC has offered 17 workshops to high school students, secondary and postsecondary educators, and displaced and incumbent workers. They have also offered on-site training to businesses within their service district. This poster will report the scope of the workshops for various audiences, the teaching protocol and pedagogy, and the outcome measures that characterize its success.

Presenters: Meer Almeer, Brevard Community College, Melbourne, FL
Sheryl Awtonomow, Brevard Community College, Melbourne, FL
Marilyn Barger, FLATE, Tampa, FL

Changing Girls’ Perceptions of Careers in Technology

This session will explore how an NSF ITEST strategies grant is changing perceptions of high school girls concerning careers in technology. Strategies to build girls’ interest, confidence, and skills in IT and STEM college programs and careers are shared. Results, implementation challenges, and lessons learned in the NSF ITEST Tri-IT project are discussed in the context of the research on girls and their engagement in STEM and afterschool programs.

Presenters: Ernie Friend, Florida State College, Jacksonville, FL
Linda Austin, Florida State College, Jacksonville, FL
Vacuum Technology Training at Multiple Levels
Vacuum technology represents a core skill set that is vital for advanced manufacturing as represented in micro-, nano-, and biotechnologies. Specific courses in vacuum technology are not typically part of high school and/or A.S. degree programs. However, this skill set can be incorporated in the STEM aspects of these curricula. This poster will highlight the important engineering science and hands-on training aspects of vacuum technology. Information about professional development programs for science teachers will be provided as well as key elements in workforce development activities.

Presenters: Andrew Hoff, FLATE, Tampa, FL
Robert Tufts, FLATE, Tampa, FL
Richard Gilbert, FLATE, Tampa, FL
Robert Ehrmann, NACK Center, University Park, PA

Developing a Bioscience Industry Sector in the Greater Tampa Bay Region
The Florida Center of Excellence for Biomolecular Identification for Targeted Therapeutics (FCoE-BITT) is housed at the University of South Florida. BITT is commissioned to build and support the biomedical and biotechnology sectors within the Greater Tampa Bay Region. To accomplish this goal, BITT must focus on supporting bio-business growth and developing its workforce infrastructure. This infrastructure involves meeting both short- and long-term employer needs at multiple technical levels. This poster will outline how BITT with its NSF partner, FLATE (Florida Center for Advanced Technological Education), is implementing its comprehensive workforce strategy.

Presenters: Richard Gilbert, FLATE, Tampa, FL
Marilyn Barger, FLATE, Tampa, FL
Tammy Spain, Biomolecular Identification and Targeted Therapeutics, Tampa, FL

Student Programs for Life Support and Sustainable Living
The Life Support and Sustainable Living (LSSL) Pilot Program has been successfully implemented, helping to prepare engineers and technologists with both technology and professional skills that are required to meet today’s workforce demands. LSSL also addresses the recruitment and retention of underrepresented populations by targeting females and minorities at 50% of enrollment in the program. The advantage of the LSSL program is that it prepares students not only to learn critical thinking and relevant technical skills but to enter the workforce with professional skills including teamwork, leadership, project planning, and social networking experiences. This poster will describe the program and key issues related to implementation on community college campuses.

Presenter: Karen Wosczyna-Birch, RCNGM, Hartford, CT
Marketing Advanced Manufacturing Careers Today
Several NSF ATE centers are tackling the issue of changing the public’s perception of manufacturing and jobs in that industry. In addition to using advanced engineering technologies and producing cool, high-tech products, manufacturing employees are kept on the front edge of new and emerging technologies and techniques. Regional efforts include the “Made in Florida” outreach campaign in Florida, the “Next Generation Manufacturing” campaign in Connecticut, and the “New and Improved” campaign just kicking off in Maryland. What is important to the new generation of workers? Are these campaigns reaching them? This poster session shares the strategies of these campaigns and data defining their individual and collected successes as well as successes of several national efforts in this area.
Presenters: Marilyn Barger, FLATE, Tampa, FL
Karen Wosczyna-Birch, RCNGM, Hartford, CT
Dennis Faber, TIME, Baltimore, MD

Broadening the Impact to Industry/Education: Utilizing the Synergy Project to Lean SCME Workshops and Instruction
SCME has actively engaged Industry in the design of their instructional materials and workshops. Utilizing lessons from the Synergy Project for Research, Practice, and Transformation and “Lean” manufacturing methodologies, SCME has experienced broader impact from its educational offerings that are duplicable by other projects and centers (scale). Specifically, utilizing the concepts of training within industry’s job instruction and job methods, students and incumbent technicians alike not only receive an educational overview from workshops but utilize training they receive to demonstrably bring these skills back to industry (thus attracting additional industry support). Additionally, SCME has directly benefited from these “leaning” efforts. SCME’s industry liaison will host the poster session, which will illustrate the methodologies used to transform select SCME workshops and a hands-on activity demonstrating how your project or center can duplicate and benefit from these results.
Presenters: James Hyder, SCME, Albuquerque, NM
Matthias Pleil, SCME, Albuquerque, NM

Linking the ICT Community College and University Project
This presentation will cover projects completed while working at Collin College as well as projects completed after transferring to the University of North Texas.
Presenter: Brent McCormick, CTC, Frisco, TX
Wednesday 6:00–7:00 P.M. Sessions

**SESSION 1S**

**Colonial**

**Community-Based WiFi Development: An Essential Tool**

Presenter will show video of an actual community wifi deployment infrastructure covering 2-3 kilometers ‘hotspot’ Internet coverage. Presenter will introduce to technicians essential wireless equipments that we are currently using in 94 underprivileged communities across the nation. This low cost deployment has dissolved the barriers to affordable and accessible information.

The presenter will also discuss how the network is used towards social and educational advancement to underprivileged citizens and cash strapped communities in the Philippines.

Presenter:  **Jay Vincent Plaza**, HotCity Wireless, Edison, NJ

**SESSION 2S**

**Olympic**

**The Entrepreneurship Technician: Business Skills in STEM Education**

Community and technical colleges need to begin developing the Entrepreneurship Technician, one with broad business skill-sets that support their ability to put their well-developed technical skills to innovative use in managing projects and innovating products. The STEM Virtual Enterprise (VE) simulation program has been successfully tested with IT and BioTechnology programs, adding soft- and entrepreneurial-skills to the students’ skill-sets. This talk will discuss the Virtual Enterprise pedagogy and opportunities for collaborative grant development in expanding this program across all STEM disciplines. The session will culminate with a model for sustainable workforce development throughout the NSF ATE network.

Presenters:  **Edgar Troudt**, CUNY Kingsborough Community College, Brooklyn, NY  
**Stuart Schulman**, CUNY Kingsborough Community College, Brooklyn, NY  
**Christoph Winkler**, CUNY Kingsborough Community College, Brooklyn, NY
The National Center for Optics and Photonics Education

**Information**
Photons Technology
Technician Careers

**Technical Assistance**
Program Feasibility and Planning
Curriculum Design and Development
Laboratory Design

**Professional Development and Training**
Program Planning Workshops
Online Faculty Development Courses

**Resources**
*National Photonics Skill Standards for Technicians, 3rd Ed.*
Program Planning Guides, *for infusing photonics into...*
Manufacturing Technology • Biomedical Applications
Homeland Security • Optoelectronics
Telecommunications

**Curriculum Materials**
Mathematics for Photonics Technicians
Laser Electro-Optics Technology Series—**UPDATED!**
Laser, Optics and Photonics Series
Modules in Photonics-Enabled Technologies
Manufacturing • Environmental Monitoring
Biomedicine • Forensic Science and Homeland Security • Optoelectronics
Nanotechnology

**OP-TEC Partner Colleges**
California Regional Consortium for Advances in Technological Education

Is Going Green

Wind & Solar & Energy Management

- 2+2+2 Pathways
- Curriculum Development
- Faculty Development
- Assessment

Principal Investigator – Kathleen Alfano, Ph.D.
For Additional Information contact the
CREATE Office at College of the Canyons, Santa Clarita, CA – 661-362-5364

CREATE Partner Colleges and Counties Served

NSF
Award #1002653
## Thursday Schedule at a Glance

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>8:00–8:30 a.m.</td>
<td>Continental Breakfast – National Ballroom AB</td>
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<tr>
<td>8:30–10:00 a.m.</td>
<td>Keynote: Anthony Johnson – National Ballroom AB</td>
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<tr>
<td>10:00–11:00 a.m.</td>
<td>Refreshment Break/View Exhibits/Prize Drawing – National Ballroom CD</td>
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<tr>
<td>11:00 a.m.–Noon</td>
<td><strong>Sessions</strong></td>
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<tr>
<td>4A:</td>
<td>Intro to Microelectromechanical Systems – Augusta A</td>
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<td>4B:</td>
<td>Online ATE Resources – Augusta B</td>
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<tr>
<td>4C:</td>
<td>Energy Utilization Technologies/Future Trends – Oakmont</td>
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<tr>
<td>4D:</td>
<td>Customized Online Education: Lean and Green – Congressional</td>
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<tr>
<td>4E:</td>
<td>Remote Access: Using the Tools of Nanoscience – Colonial</td>
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<tr>
<td>4F:</td>
<td>Emerging U.S. Broadband Strategies – Olympic</td>
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<td>4G:</td>
<td>Resources for Engineering Technology Education – ChampionsGate</td>
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<tr>
<td>Noon–1:30 p.m.</td>
<td>Keynote Luncheon: Duane De Freese – National Ballroom AB</td>
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<tr>
<td>1:30–2:30 p.m.</td>
<td><strong>Sessions</strong></td>
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<tr>
<td>5A:</td>
<td>Implementing Nanotechnology Curriculum – Augusta A</td>
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<td>5B:</td>
<td>Blended Distance Learning – Augusta B</td>
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<td>5C:</td>
<td>Assessing the “T” and “E” in STEM – Oakmont</td>
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<td>5D:</td>
<td>Remote Automation Management Project – Congressional</td>
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<td>5E:</td>
<td>Virtual E-Schools (CA2VES) – Colonial</td>
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<td>Storage Technology Education – Olympic</td>
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<td>5G:</td>
<td>Computational Thinking – ChampionsGate</td>
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<tr>
<td>2:30–3:00 p.m.</td>
<td>Refreshment Break – Lobby Level</td>
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<tr>
<td>3:00–4:00 p.m.</td>
<td><strong>Sessions</strong></td>
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<tr>
<td>6A:</td>
<td>Welding Is NOT What You Think – Augusta A</td>
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See the Omni floor plan on pages 62 and 63.
Thursday Continental Breakfast
8:00–8:30 a.m. – National Ballroom AB (All attendees)

Thursday Morning Keynote:
Anthony Johnson

8:30–10:00 a.m. – National Ballroom AB
Keynote speaker provided by OP-TEC. A display of laser developments, applications, and educational materials sponsored by OP-TEC will be available for viewing in the foyer after the session.

The 50th Anniversary of the Laser and Its Significant Impact on Our Technological Society

Anthony M. Johnson is Director of the Center for Advanced Studies in Photonics Research (CASPR) and Professor of Physics and Professor of Computer Science and Electrical Engineering at the University of Maryland Baltimore County (UMBC). He is also Deputy Director and Materials Research Thrust Leader for the NSF Engineering Research Center MIRTHE (Mid-Infrared Technologies for Health and the Environment) established in 2006.

Johnson’s general area of research is in ultrafast optical and optoelectronic phenomena. He has nearly seventy refereed publications, two book chapters, and four US patents. His current research interests include the ultrafast photophysics and nonlinear optical properties of bulk, nanostructured, and quantum well semiconductor structures; ultrashort pulse propagation in fibers; and high-speed lightwave systems.

Johnson has served on the boards and advisory committees of the American Physical Society (APS), the IEEE Lasers and Electro-Optics Society, and the Optical Society of America (OSA) and in 2002 became OSA’s first African-American President. He is a Fellow of the American Association for the Advancement of Science, OSA, APS, IEEE, and the National Society of Black Physicists. Johnson received the 1988 AT&T Bell Labs Distinguished Staff Award, the 1994 Black Engineer of the Year Special Recognition Award, the 1996 Edward A. Bouchet Award of the APS, and a 2005 Science Spectrum Magazine Trailblazer Top Minority in Science Award.

Refreshment Break/View Exhibits
10:00–11:00 a.m. – National Ballroom CD (All attendees)
Prize drawing 10:30 a.m.
Thursday 11:00 A.M.–Noon Sessions

**SESSION 4A**

**Augusta A**

**Intro to Microelectromechanical Systems**

Microsystems, also known as MEMS, are tiny electromechanical systems that enable high-tech gadgets to interact with us and our environment. This session will provide a short overview of what MEMS are, where they are used, and how they are made. MEMS topics can be used in the classroom to engage students, giving them a reason to study and acquire knowledge in science, technology, engineering, and mathematics (STEM).

Presenter: **Matthias Pleil**, SCME, Albuquerque, NM

**SESSION 4B**

**Augusta B**

**Online ATE Resources: TeachingTechnicians.org, ATECentral.net, and ATETV.org**

This session will demonstrate “what” to do, “where” to go, and “how” to find resources designed to improve technician education. TeachingTechnicians.org promotes faculty development among technician educators. Grant-subsidized events are posted for searching at any time, and teachers can register and be alerted when items of interest are posted. Faculty development activities range from effective teaching methodologies to recent advances in science and technology. ATECentral.net is an online portal and collection of the materials and services funded by the NSF to help educators, students, and the general public discover and learn about the depth and breadth of the ATE program. ATETV.org is an online video series that connects students with education and employment opportunities. Weekly video episodes showcase ATE programs and network with Facebook and Twitter.

Presenters: **Patressa Gardner**, SC ATE, Florence, SC  
**Elaine Craft**, SC ATE, Florence, SC  
**Chanda Halderman**, ATE Central, Madison, WI  
**Anthony Manupelli**, ATETV, Clayton, MO

**SESSION 4C**

**Oakmont**

**Energy Utilization Technologies and Future Trends**

As technology advances, the distribution and utilization of energy and electricity will become an increasingly important focus of our science, technology, engineering, and mathematics (STEM) workforce. This presentation will discuss the path taken by Cincinnati State to create the State of Ohio’s first Renewable Energy and Energy Efficiency Major to its first Smart Grid Major, and one pathway to them for high school juniors and seniors through an on campus STEM Summer Academy.

Presenter: **Larry Feist**, Cincinnati State Technical and Community College, Cincinnati, OH

**SESSION 4D**

**Congressional**

**Customized Online Education: Lean and Green**

Oxygen Education’s award-winning online curriculum for advanced manufacturing is used to prepare thousands of people for the 21st-century workforce. Attendees to this session will be invited to join a discussion of the creation and deployment of new offerings in areas such as lean manufacturing and green technology.

Presenter: **Joe Reid**, Oxygen Education, Jeffersonville, IN
SESSION 4E
Colonial

Remote Access: Using the Tools of Nanoscience for Diverse Purposes and in a Myriad of Venues

The microscopes used to study the world at the nanoscale are often complicated to operate and expensive yet the images obtained by these tools provide scientific insight and create enthusiasm and interest among students. The fact that these tools can be complicated results in the need for extensive training and in staged phases. The expense of the equipment restricts the availability of these tools to many students and in more remote areas.

Remote access to the various tools offers a pathway to provide significant insight, use, applications and training to students without requiring physical ownership of the equipment. This session will discuss the various approaches and implementation methodologies for remote access that are being used in multiple institutions for technician level training. We will discuss how remote access has been applied in various classroom environments and how it supplements both traditional and hands-on segments of a curriculum.

Presenter: Deb Newberry, Nano-Link, Rosemount, MN

SESSION 4F
Olympic

Emerging U.S. Broadband Strategies and Technologies

This session will focus on the impact of the latest consumer, academic, and business and industry trends in ICT and ICT-enabled disciplines. Broad trends and impacts discussed will include bandwidth offerings and voice, video and data Internet Protocol (IP) strategies from wired (cable and telcos) and wireless providers, new and emerging devices, operating systems, and applications. Special emphasis will be placed on the emergence of mobile bandwidth and devices, including a brief review of mobile service offerings over the past ten years. Second generation (2G) and third generation (3G) cellular telecommunication networks and services will be covered and compared to two emerging fourth generation (4G) services—WiMAX and LTE.

Presenter: Gordon Snyder, ICT Center, Springfield, MA

SESSION 4G
ChampionsGate

Resources for Engineering Technology Education: Don’t Reinvent the Wheel—METEC Meets Many Needs for New Engineering Technology Educators

For more than a decade, the National Center for Manufacturing Education (NCME) has served in a wide range of capacities to enhance manufacturing and engineering technologies education in the United States. Most recently, NCME developed the Manufacturing and Engineering Technologies Education Clearinghouse (METEC), a one-stop web repository of exemplary materials for a broad range of engineering technology educators. This session will focus on how METEC can serve engineering technology educators in general, and new educators in particular. METEC’s searchable electronic database provides peer-reviewed, high-quality information and resources pertaining to a broad range of engineering technologies. The presenter will show step-by-step how a new instructor goes about finding and obtaining materials for classroom use and pedagogical improvement.

Presenter: Derek Hardin, NCME, Dayton, OH
Thursday Keynote Luncheon: Duane De Freese

Noon–1:30 P.M. – National Ballroom AB
Keynote speaker provided by SpaceTEC

Ocean Science and High-Impact Technology—21st Century Challenges
Present Opportunities to Change the World

Duane De Freese is not your typical scientist. In college, he wasn’t a straight “A” student known for his studious habits and intellect. In fact, his University of Rhode Island advisor gently suggested he look for a “hands on” career path that better suited his interests in surfing, surfboard building, fishing, sailing, boats and other ocean activities. But in 1975, Duane and a college friend saw a beautiful 100 foot staysail schooner docked at the University of Rhode Island Narragansett Bay Campus overlooking the West Passage of Narragansett Bay. They discovered that it was owned and operated by an education organization out of Woods Hole, Massachusetts offering a semester at sea. A year later, both were enrolled as student/apprentices with Sea Education Association, studying 6 weeks on land in preparation for a 6-week research cruise aboard that same schooner, the RV Westward. It was this “hands on” ocean experience that convinced Duane to pursue a career in marine science.

Duane received his B.S. degree in Zoology from URI when he returned from his Westward experience. He received his M.S and Ph.D. degrees in Marine Biology from Florida Institute of Technology (1982 and 1988).

From 1998 to 2008 Duane served as the Florida Vice President of Research for Hubbs-SeaWorld Research Institute, a non-profit organization created in 1963 by the founders of SeaWorld in San Diego, CA. Last year, he held a 12-month appointment with the University of Central Florida College of Sciences to provide strategic visioning and planning for a coastal conservation and sustainability initiative. Today, Duane is the Vice President of Science and New Business Development for AquaFiber Technologies Corporation in Orlando, FL. AquaFiber is an emerging high-tech company working at the intersection of clean water, renewable energy and human health.
Thursday 1:30–2:30 P.M. Sessions

**SESSION 5A**
Augusta A

**Overcoming Institutional Barriers to the Implementation of Nanotechnology Curriculum**

Nanotechnology courses and degree programs are emerging at community and technical colleges all across the United States. Institutional barriers such as the assessment of industry need, garnering industry support, alignment with existing curriculum, faculty development, curriculum development, and equipment access must be addressed in order to implement successful nanotechnology education programs. This session will address these barriers and alert attendees to available resources and services. The mission of the National Center for Nanotechnology Applications and Career Knowledge (NACK), established at Penn State in September 2008, is to provide this assistance to emerging nanotechnology education and workforce development programs at postsecondary institutions across the U.S.

Presenters:  
Stephen Fonash, NACK Center, Innovation Park, PA  
Amy Brunner, NACK Center, Innovation Park, PA  
Robert Ehrmann, NACK Center, Innovation Park, PA  
Paul Hallacher, NACK Center, Innovation Park, PA

**SESSION 5B**
Augusta B

**Lessons Learned in Blended Distance Learning**

Over the last year, faculty and staff members at the Center for System Security and Information Assurance (CSSIA) have implemented and studied the impact of a new educational model called blended distance learning. The model enables CSSIA’s staff to serve over 300 participants from across the country. This session will provide an overview of the model. The presenters will describe the materials, teaching environment, and impact of this new delivery system.

Presenters:  
John Sands, CSSIA, Palos Hills, IL  
Erich Spengler, CSSIA, Palos Hills, IL

**SESSION 5C**
Oakmont

**Assessing the “T” and “E” in STEM**

Does your program specifically assess technology and engineering? Assessing the “T” and “E” in STEM can be thoughtfully integrated into STEM curriculum as formative and summative measures based on research-based practices. This session will introduce participants to an assessment model that incorporates online delivery. Participants will learn about the vital role of technicians in this process from item writing to revision. A model for STEM institutes will also be presented.

Presenter:  
Shelli Meade, TIME Center, Christiansburg, VA

**SESSION 5D**
Congressional

**Education Without Boundaries Using RAMP—The Remote Automation Management Project**

This session will describe the history of the Remote Automation Management Project and its implementation at Moultrie Technical College. Participants will examine the technology utilized in the system and how it is being used to remove boundaries between secondary and postsecondary systems. In addition, the session will present future plans and methods for providing customized training opportunities to business and industry.

Presenter:  
Chris Estes, Moultrie Technical College and FLATE, Moultrie, GA
**Session 5E**

**Colonial**

**Center for Aviation and Automotive Technology Education Using Virtual E-Schools (CA2VES)**

The Center for Aviation and Automotive Technology Education Using Virtual E-Schools (CA2VES), a regional resource for advanced technical education using virtual classrooms and E-learning technologies (simulation and visualization tools), focuses on supporting NexGen automotive and aviation technicians. Working alongside technical colleges of South Carolina, CA2VES will use the virtual teaching environment to help students and adults choose careers as aerospace or automotive professionals. The proposed team consists of Clemson University, Greenville Technical College, SCATE Inc, Florence-Darlington Technical College, other NSF-ATE Centers (SpaceTEC, CARCAM, AMTEC), and industrial partners. The focus will be on identifying and adapting curriculum materials for delivery through E-learning, supporting professional development activities, and disseminating best practices in the use of E-learning technology.

Presenters:  
- Anand Gramopadhye, Clemson University, Clemson, SC  
- Carey Castle, Greenville Technical College, Greenville, SC  
- Elaine Craft, SCATE Inc., Florence, SC  
- Michael Mazen, Southeastern Institute of Manufacturing and Technology, Florence, SC  
- George Whitaker, Florence-Darlington Technical College, Florence, SC

**Session 5F**

**Olympic**

**Take a Byte and Learn about Storage Technology Education and the EMC Academic Alliance (EAA) Program**

As digital information (projected to double every 18 months) grows, so does the demand for IT professionals who know how to manage it. Storage infrastructure is the most critical component of overall IT infrastructure, significantly impacting availability, protection, and applications efficiency. The EMC Academic Alliance (EAA) program provides technology-based curriculum and faculty development that help prepare students for these complex data center environments at no cost. Attend this session to learn about the program and see a demo of how to set up Openfiler (an Open Source Network Attached Storage and Storage Area Network solution), the application that is being used to support this curriculum.

Presenter:  
- Kimberly Yohannan, CTC and ICT Center, Franklin, MA

**Session 5G**

**ChampionsGate**

**Computational Thinking—Scenarios for Results**

The ubiquity of computing has turned computing skills into global commodities. While it is well appreciated that computing tools enable global enterprises, it is less appreciated that applications and adaptations of those tools and processes are often the currency of global competition. The survival of many enterprises with diverse services and products is often linked closely to the enterprises’ ability to leverage IT in novel ways. This in turn has created a need for discipline specialists who have deep and imaginative understanding of the power and use of computing hardware and tools, particularly database design, data modeling, database management, and data visualization. This session will demonstrate how educators are aligning computational thinking with IT to develop the structure to provide instruction and support for developing this critical attribute in our students.

Presenter:  
- Deborah Boisvert, BATEC, Boston, MA  
- Rashmi Pimprikar, BATEC, Boston, MA
Thursday Afternoon Break
2:30–3:00 p.m. – Lobby Level (All attendees)

Thursday 3:00–4:00 p.m. Sessions

**SESSION 6A**
Augusta A

**Welding Is NOT What You Think It Is!**
This workshop will cover the National Center for Welding Education and Training’s (Weld-Ed) mission, objectives, and accomplishments to date. Discussion of modern welding science and welding technology in construction, fabrication, manufacturing, and repair from the point of view that welding is a chemical reaction and obeys all the laws of chemical reactions. This broad, scientific view helps to explain all aspects of modern welding technology. Come learn how Weld-Ed can be a resource for you.

Presenters: Monica Pfarr, Weld-Ed, Elyria, OH
Duncan Estep, Weld-Ed, Elyria, OH

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**SESSION 6B**
Augusta B

**Successful Practices in Innovation/Achieve Impact: ATE Case Studies in Progress**
Technologies and technician careers are continually defined and transformed by innovation. The process of innovation involves everyone, including educators. This session will explore what is already known about successful practices in the diffusion of innovations and achieving scale and what is being learned about how these practices might affect a series of ATE projects in their efforts to achieve scale and broader impacts. Participants will hear from a panel of ATE project representatives about their activities and how the ATE program is facilitating their efforts.

Presenter: Deborah Boisvert, BATEC, Boston, MA

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**SESSION 6C**
Oakmont

**Getting Money for Your Technician Education Project**
Do you have an idea for a new project that needs funding? Does your idea have anything to do with technician education? Do you want to fully engage your industry partners? This session will provide guidance for developing grant goals, defining objectives, and aligning effectiveness measurements. Get advice from seasoned grant awardees. Bring your project ideas and leave with measurable goals and objectives.

Presenters: Mel Cossette, MatEd, Lynnwood, WA
Marilyn Barger, FLATE, Tampa, FL

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**SESSION 6D**
Congressional

**Harness the Power of Green Teams**
Many companies form teams to tackle green issues such as lighting and recycling projects. Once their projects have been completed, the teams are often disbanded or unsure of what to do next. Harnessing the Power of Green Teams focuses on giving technical-level employees the tools and techniques to redefine their scope, measure, set goals, and achieve continual improvement.

Participants will learn how the TIME Center developed and implemented a course to help its business and industry partners “go green.” This session will illustrate how technicians who participated in the course learned to recognize the value of going green, identify quick wins for their organizations, and create “sustainable” organizations.

Presenters: Michael Rothmeier, TIME Center, Parkton, MD
Cliff Ishmael, TIME Center, Catonsville, MD
The Technology of the Smart Grid

This session will present an overview of the architecture and projected capabilities of the Department of Energy’s Smart Grid initiative. Through the American Recovery and Reinvestment Act of 2009, $3.4 billion was awarded as matching funds to approximately 100 proposed Smart Grid projects. The Smart Grid will serve as a platform for many new energy efficiency initiatives involving residential customers and for emerging distribution grid functions such as the interfacing of green, cleantech, and energy storage devices (alternative energy) with the power grid. The technology used to implement the Smart Grid will be examined and compared to what is being taught in AS programs in electrical, electronics, and networking engineering technologies. The session will wrap up with a quick look into the future of intelligent infrastructure, especially two areas of emerging interest—building automation and transportation applications.

Presenter:  **Gary Mullett**, Springfield Technical Community College, Springfield, MA

Dynamic Internet-Based Mapping Tools: National Geospatial Map—Utilizing Flex

The presenters will discuss the creation, data population, and usage of a national map for technician education that can be used by all ATE centers and projects. The map is a dynamic Internet-based tool that uses the technology of both ArcGIS Server and Adobe Flex. The map shows the location of every community and technical college in the United States, whether they have received ATE grants, the subject areas of the grants, and when the grants were received. A second map shows community and technical colleges that offer geospatial courses, certificates, and degrees. Since the maps are dynamic, they can be queried to provide additional information. While the GeoTech Center created one of the maps specifically for geospatial technology, other technologies can be researched and added.

Presenters:  **Vincent DiNoto**, GeoTech Center, Louisville, KY  
**Ross Allen**, GeoTech Center, Louisville, KY  
**Mike Rudibaugh**, GeoTech Center, Mattoon, IL

Exploring a National Cyber Defense Competition for Community Colleges

This session will (1) provide an update on the cyber security exercise landscape and the feasibility of synthesizing those exercises into a national community college competition, (2) expand on the resource requirements of hosting a cyber security exercise, and (3) outline the mission and goals of a potential governing body for such exercises. The presenter will illustrate the challenges and benefits to community college students of participating in cyber defense exercises, based on the presenter’s first-hand experience in coordinating, designing, and hosting the past five Mid-Atlantic Regional Collegiate Cyber Defense Competitions (CCDC). Participants will be introduced to the technical details of such competitions, as well as the structural and resource-related issues involved in hosting a cyber security exercise.

Presenter:  **Casey O’Brien**, CyberWatch Center, Baltimore, MD
At Connecticut College of Technology’s Regional Center for Next Generation Manufacturing

- Professional Development
- Industry-driven Curriculum
- 2 + 2 + 2 Seamless Pathways
- Student Recruitment and Retention

Principal Investigator: Dr. Karen Wosczyna-Birch
Award #: 0903209
Technology Showcase

400
Amatrol, Inc.
2400 Centennial Boulevard
Jeffersonville, IN 47130
www.amatrol.com


102
AMTEC: Automotive Manufacturing Technical Education Collaborative
300 N. Main Street
Versailles, KY 40383
www.autoworkforce.org

AMTEC is a multi-college, multi-state collaborative of community and technical colleges and industry partners working together to improve the initial and ongoing preparation of high skill technicians and manufacturing engineers for successful work in automobile manufacturing. The work of the Collaborative will benefit students, incumbent workers, and employers.

413
Artisan Jewelry by Angel
Angel Wrenn
Lakeland, FL

Boutique jewelry without the boutique prices! Semi-precious stones, freshwater pearls, Australian crystal, and sterling silver jewelry

201
ATE Central: Advanced Technological Education Central
1210 W. Dayton Street
Madison, WI 53705
http://atecentral.net

ATE Central is a freely available online portal and collection of materials and services that highlight the work of the Advanced Technological Education (ATE) projects and centers. These National Science Foundation funded initiatives work with educators from two-year colleges to develop and implement ideas for improving the skills of technicians and the educators who teach them. ATE Central is designed to help educators, students, and the general public to learn about, and use materials from, the entire depth and breadth of the Advanced Technological Education program.

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BATEC: Boston Area Advanced Technological Education Connections
100 Morrissey Boulevard
Boston, MA 02125
www.batec.org

BATEC, an NSF Advanced Technology Education Center of Excellence, promotes a coordinated, self-sustaining, regional education and workforce development system for computing technologies.

305
Bio-Link
City Colleges of San Francisco
1855 Folsom Street, Suite 643
San Francisco, CA 94103
www.bio-link.org

In August 2009, Bio-Link Next Generation National ATE Center for Biotechnology and Life Sciences was awarded a continuing grant as a new National Center of Excellence for four years at a level of just over $5 million. As a new National Center of Excellence designed to meet the rapidly changing needs of the biotechnology and related life science industries and prospective technical workforce, Bio-Link will be able to provide the much wider range of services and products now necessitated by the swiftly changing biotech industry.

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CAPT: Center for the Advancement of Process Technology
1200 Amburn Road
Texas City, TX 77591
www.capttech.org

The Center for the Advancement of Process Technology supports the development of a highly skilled, educated and diverse process technician workforce.

401
CARCAM: Consortium for Alabama Regional Center for Automotive Manufacturing
P0 Box 227
Gadsden, AL 35902
www.carcam.org

CARCAM will describe methodologies for core curriculum and illustrate the ability for individual colleges to maintain autonomy by designing electives to meet local manufacturing specific industry requirements. Details on the use of standardized performance and learning objectives and information regarding the AUT degree and certificate programs will also be provided.

103
CORD: Center for Occupational Research and Development
P0 Box 21689
Waco, TX 76702
www.cord.org

CORD is a nonprofit educational organization with 30 years experience supporting community colleges across the country. Stop by and learn more about our curriculum design services in STEM and technical fields, our customized faculty development programs, and technical assistance for both adult and traditional career pathway programs.

402
CREATE: California Regional Consortium for Engineering Advances in Technological Education
26455 Rockwell Canyon Road
Santa Clarita, CA 91355
www.create-california.org

The California Regional Consortium for Engineering Advances in Technological Education (CREATE) project is a joint effort between seven community colleges and over 30 large high tech engineering/technology employers. Its purposes are to develop a regional approach to workforce preparation and training, and to meet emerging needs for innovative, flexible strategies to educate the workforce in new technological advances in a wide range of high demand engineering technology fields. These fields include Computer Networking, Electronic Technologies, Manufacturing and Renewable Energies.
The Convergence Technology Center (CTC) creates certificates and degrees for technicians supporting the convergence of voice, video, data and image over a secure network. The CTC mentors community colleges around the country helping them implement Convergence certificates and degrees to meet business needs for these specialists.

CyberWatch Center
Prince George’s Community College
301 Largo Road, CAT 129
Largo, MD 21561
http://cyberwatchcenter.org
CyberWatch: Preparing the information assurance workforce for the nation. A video displays highlights of the CyberWatch Collegiate Cyber Defense Competition. Students also discuss the CCDC.

Daedalon
The Science Source
299 Atlantic Highway
Waldoboro, ME 04572
www.thesciencesource.com
Presenting VPAL — an integrated expandable vacuum teaching system.

EMC Corporation
176 South Street
Hopkinton, MA 01748
www.emc.com
EMC Corporation is the world leader in information storage and management solutions, and we can help you prepare your students to be world-class IT professionals who are as mission-critical as the technology itself. As digital information — projected to double every 18 months — grows more complex, so does the demand for IT professionals to manage it. IT managers seek candidates knowledgeable about information storage and management since storage infrastructure is the most critical component of overall IT environments, affecting availability, protection, and applications efficiency. Learn more about joining the EMC Academic Alliance and preview the definitive reference book on information storage technology at http://education.emc.com/academicalliance.

Festo Corporation
395 Moreland Road
Hauppauge, NY 11788
www.festo.com
Festo is a leading world-wide supplier of automation technology. Supporting advanced automation through training, the Didactic Learning Systems division of Festo, offers professional training solutions directly related to everyday industrial practices for process and factory automation. Festo is the official sponsor of the WorldSkills Mechatronics and Mobile Robotics competitions.

FLATE: Florida Advanced Technological Educational Center of Excellence
10414 E. Columbus Drive
Tampa, FL 33619
www.fl-ate.org
FLATE, the Florida Advanced Technological Education Center of Excellence, is the go-to organization for manufacturing and advanced technical education, best practices and resources supporting the high performance skilled workforce for Florida’s manufacturing sectors.

GeoTech Center: National Geospatial Technology Center of Excellence
Del Mar College
101 Baldwin Boulevard
Corpus Christi, TX 78404
www.geotechcenter.org
The National Geospatial Technology Center of Excellence provides resources for geospatial educators, students, and industry.

Hampden Engineering Corporation
99 Shaker Road
East Longmeadow, MA 01028
www.hampden.com
Hampden Engineering is a world leader in the manufacturing of training equipment to meet the needs of the future workforce, especially in “Green & Sustainability.”

Lawrence Berkeley National Laboratory
1 Cyclotron Road 7R0222
Berkeley, CA 94720
http://csee.lbl.gov
To promote equal access to scientific and technical careers for all students and support excellent science and engineering teaching.
411
LINCS: Linux Integration Networking Connections
Polk State College/University of South Florida Polytechnic
999 Avenue H, Northeast
Winter Haven, FL 33881-4299
www.polk.edu
Linux Integration Networking Connections (LINCS) is a joint project between Polk State College, the University of South Florida Polytechnic, and the National Science Foundation. The project creates a model educational pipeline from high school to BSAS in Information Technology with a concentration in Linux.

203, 205
MATEC NetWorks: Maricopa Advanced Technology Education Center NetWorks
4110 E. Wood Street, Suite 1
Phoenix, AZ 85040
www.matecnetworks.org
NetWorks supports semiconductor, automated manufacturing, electronics, and energy utilization education by providing a digital resource library, web seminar series, national conference, and virtual technology education community.

106
MatEd: National Resource Center for Materials Technology Education
20000 68th Avenue W.
Lynnwood, WA 98036
www.materialseducation.org
The National Resource Center for Materials Technology Education (MatEd) is fostering a national network of industry and educational professionals with the aim of increasing the number and the diversity of highly skilled technicians ready for employment. The Resource Center provides curriculum and other resources for materials technology program enhancement at community and technical colleges nationwide. MatEd has also developed and published core competencies needed by today’s technicians in the handling of materials which were developed and validated on a national level. The core competencies and complete report can be found at the MatEd website: www.materialseducation.org.

209
MPICT: Mid-Pacific ICT Center
50 Phelan Avenue, Box S107
San Francisco, CA 94112
www.mpic.org
MPICT’s NSF-ATE-funded mission is to coordinate, improve and promote community college ICT education in northern California, southern Oregon, northern Nevada, Hawaii and the Pacific Territories.

409
NACK Center: National Center for Nanotechnology Applications & Career Knowledge
101 Innovation Boulevard, Suite 112
University Park, PA 16802
www.nano4me.org
The National ATE Center for Nanotechnology Applications and Career Knowledge (NACK) at Penn State is focused on providing assistance to emerging nanotechnology education and workforce development programs at postsecondary institutions across the U.S. As more industries use micro- and nanotechnology, demand for workers with hands-on skills is increasing dramatically. NACK provides direct assistance to educators as well as curriculum classroom resources, workshops, and hands on access real time access to state of the art nano-characterization equipment. To access these resources or to attain more information, please visit www.nano4me.org.

204
Nano-Link: Midwest Regional Center for Nanotechnology Education
1300 145th Street E
Rosemount, MN 55337
www.nano-link.org
A Regional Center dedicated to providing nanoscience multi-disciplinary educational content (lecture and hands-on) to students and educators at multiple skill levels.

310, 312
NanoProfessor
8025 Lamon Avenue
Skokie, IL 60077
www.nanoProfessor.net
NanoInk's NanoProfessor Nanoscience Education Program combines cutting-edge equipment with an expert-authored curriculum to provide students a true hands-on nanoscience experience and in so doing, better understand and appreciate the concepts, science, and tools of nanotechnology.

200
National Instruments
11500 N. MoPac Expressway
Austin, TX 78759
www.ni.com/academic
National Instruments provides educators and students with powerful graphical system design software and modular instruments to connect theory with real world application. These software tools, combined with versatile hardware platforms for instrumentation, control, robotics, and communications create an effective, dynamic learning environment.

405
NBC2: Northeast Biomanufacturing Center and Collaborative
PO Box 21974
Portsmouth, NH 03801
www.biomfmanufacturing.org
We are an NSF Advanced Technological Education Center for Biomanufacturing. We have worked with industry to put together curriculum materials for teaching biomanufacturing at the community college, high school, and university levels. We also are engaged in incumbent technician training and training of our program graduates in short, in depth courses.

104
NCME: National Center for Manufacturing Education
444 W. Third Street
Dayton, OH 45402
www.ncmeresource.org
NCME serves as a source of materials, support services, and professional development opportunities for manufacturing and engineering technologies educators and industry professionals.

300, 302
Nida Corporation
300 S. John Rodes Boulevard
Melbourne, FL 32904
www.nida.com
Nida Corporation provides Electronics, Aviation Maintenance Technology, Avionics, Autotronics, Communications, and Industrial Maintenance courseware, hardware, and management software to military, industry, and educational institutions. Nida proudly introduces the Model 360S Systems Trainer. This trainer is designed to teach technical systems operation, analysis, and troubleshooting using a unique systems-level hands-on approach.
OP-TEC: National Center for Optics and Photonics Education
324B Kelly Drive
Waco, TX 76710
www.op-tec.org
OP-TEC, an NSF/ATE National Center, is working with secondary, postsecondary and industry partners to increase and sustain our nation's capacity to produce photonics technicians.

RCNGM: Regional Center for Next Generation Manufacturing
61 Woodland Street
Hartford, CT 06105
www.nextgenmf.org
Regional Center for Next Generation Manufacturing is a National Science Foundation Advanced Technological Education grant at the Connecticut Community Colleges. Our mission is to provide Connecticut employers with a highly motivated workforce, well-skilled in 21st Century technology and engineering applications.

SC ATE: South Carolina Advanced Technological Education
2715 W. Lucas Street
Florence, SC 29501
www.scate.org
SC ATE Center for Expanding Excellence in Technician Education - TeachingTechnicians.org.

SCME: Southwest Center for Microsystems Education
800 Bradbury Dr. S.E., Suite 235
Albuquerque, NM 87106
www.scme-nm.org
The Center is increasing the nation's capacity to produce technologists skilled in Microsystems Technologies and will showcase its educational materials, professional development and outreach activities.

Simtronics Corporation
P.O. Box 38
Little Silver, NJ 07739
www.simtronics.com
Simtronics Corporation develops and delivers Windows-Based Operating Training Simulators and CBT for the Process Industries and their supporting educational institutions.

SpaceTEC: National Aerospace Technical Education Center
MailCode: SpaceTEC
Kennedy Space Center, FL 32899
www.SpaceTEC.org
SpaceTEC, the National Center of Excellence for Aerospace Technical Education and NSF National Resource Center, serves as a focal point for aerospace technical education and is the certifying body for the Certified Aerospace Technician program.

TestOut Corporation
50 S. Main Street
Pleasant Grove, UT 84062
www.LabSimOnline.com
TestOut, the leader in online labs for IT certification training, provides academic organizations with practical, hands-on IT experience through its LabSim online labs. Since 1991, TestOut has helped hundreds of thousands achieve professional IT certifications issued by Microsoft, Cisco, Novell, CompTIA and others. Visit www.TestOut.com, www.LabSimOnline.com, or call 1-800-877-4889.

TIME Center: Technology & Innovation in Manufacturing & Engineering
Community College of Baltimore County
800 S. Rolling Road
Baltimore, MD 21228
www.time-center.org
The TIME Center partners collaborate with industry, education and government stakeholders to increase the numbers and improve the technical skills of manufacturing and engineering technicians.

US Didactic, Inc.
52 Riley Road, Suite 371
Celebration, FL 34747
www.usdidactic.com
US Didactic provides Innovative Teaching Equipment for Energy Sector Training and Engineering Technology Education.

Valencia Community College
1800 S. Kirkman Road
Orlando, FL 32811
www.valenciacc.edu
Cybersecurity education

Weld-Ed
P.O. Box 1005 N. Abbe Road
Elyria, OH 44035
www.weld-ed.org
The National Center for Welding Education and Training (Weld-Ed) is a dynamic partnership between business and industry, community and technical colleges, universities, the American Welding Society and government. Its mission is to improve the quality and availability of welding technicians in the U.S. To accomplish the mission, the Center’s staff and partners work collaboratively on the development of new and improved curricula as well as providing continuing education opportunities for welding instructors.
Technology Showcase Prize Drawings

To enter the drawings, complete the Technology Showcase drawing card (included in your conference bag) and drop the card in the designated box at the Registration Desk.

**Drawing Times**
- **Wednesday** 10:30 A.M., 2:45 P.M. and 5:00 P.M.
- **Thursday** 10:30 A.M.

<table>
<thead>
<tr>
<th>Company</th>
<th>Prize Description</th>
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<tbody>
<tr>
<td>ATE Central</td>
<td>4 GB iPod Shuffle</td>
</tr>
<tr>
<td>BATEC</td>
<td>Two lanyards with integrated 4GB Flash drives</td>
</tr>
<tr>
<td>Bio-Link</td>
<td>Bag of goodies including 1 GB Flash drive &amp; pointer, travel alarm clock, key chain with whistle &amp; flashlight, and large coffee mug</td>
</tr>
<tr>
<td>CORD</td>
<td>One free National Career Pathways Network (NCPN) conference registration for the 2010 conference in Dallas, TX, October 21–23, 2010</td>
</tr>
<tr>
<td>EMC Corporation</td>
<td>A copy of the EMC textbook, Information Storage and Management, a laptop sleeve, and a wireless presentation pointer</td>
</tr>
<tr>
<td>FLATE</td>
<td>“Made in Florida” gift basket</td>
</tr>
<tr>
<td>MATEC NetWorks</td>
<td>Two gift baskets containing NetWorks goodies including T-shirts, electric fans, and pens</td>
</tr>
<tr>
<td>NCME, COLLABnFAB, and the STEM</td>
<td>One Fender Squier Bullet guitar</td>
</tr>
<tr>
<td>NanoProfessor</td>
<td>16 GB iPod nano with built-in video camera, a 2.2-inch color display, Genius Mixes and FM radio with Live Pause</td>
</tr>
<tr>
<td>Nida Corporation</td>
<td>Nida Model 488 – Digital Multimeter (Handheld)</td>
</tr>
<tr>
<td>OP-TEC</td>
<td>One-of-a-kind laser art piece</td>
</tr>
<tr>
<td>SC ATE</td>
<td>Teaching Technicians.org tote bag filled with goodies including pens, notepads, and recruitment CDs and DVDs</td>
</tr>
<tr>
<td>TestOut Corporation</td>
<td>One LabSim IT Certification Training Course of Your Choice</td>
</tr>
</tbody>
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**FLATE:**
“Made in Florida” gift basket

**MATEC NetWorks**
Two gift baskets containing NetWorks goodies including T-shirts, electric fans, and pens

**NCME, COLLABnFAB, and the STEM**
One Fender Squier Bullet guitar

**NanoProfessor**
16 GB iPod nano with built-in video camera, a 2.2-inch color display, Genius Mixes and FM radio with Live Pause

**Nida Corporation**
Nida Model 488 – Digital Multimeter (Handheld)

**OP-TEC**
One-of-a-kind laser art piece
Technology Showcase Floor Plan

Poster Sessions

Entrance

Lobby
Omni Floor Plan

Lobby Level
SME’s Technical Community Network impacts industry and community.

Industry experts connect virtually to help solve technical challenges, share information in manufacturing and explore new opportunities for growth. This team of professionals collaborates across boundaries to do things better together ... the sum is greater than the parts.

The TCN is expansive, flexible, live and online. And it's all a benefit of being an SME member!

Learn more at www.sme.org/tcn
or call 800.733.4763
Save the Date!

High Impact Technology Exchange Conference

Educating America’s Technical Workforce

July 25–28, 2011 • Hyatt Regency • San Francisco

This national conference is a unique opportunity for community and technical college educators and stakeholders seeking professional development opportunities, educational materials, collaborative ventures, and insights into emerging market trends to develop and advance the technical workforce of the 21st century.

www.highimpact-tec.org