CONFERENCE PROGRAM



OCTOBER 24-26, 2018

LEADING DEVELOPMENT OF

AMERICA'S TECHNOLOGICAL WORKFORCE





CELEBRATING 25 YEARS

#ATEPI

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As the voice of the nation's community colleges, the American Association of Community Colleges (AACC), delivers educational and economic opportunity for 12 million diverse students in search of the American Dream. Uniquely dedicated to access and success for all students, AACC's member colleges provide an on-ramp to degree attainment, skilled careers, and familysupporting wages. Located in Washington, D.C., AACC advocates for these not-for-profit, public-serving institutions to ensure they have the resources and support they need to deliver on the mission of increasing economic mobility for all.







GENERAL INFORMATION

ATE@25: Leading Development of America's Technological Workforce

Twenty-Fifth National ATE Principal Investigators' Conference October 24–26, 2018 • Omni Shoreham Hotel • Washington, DC

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Hotel Information

Omni Shoreham Hotel (Conference site) 2500 Calvert Street, NW Washington, DC 202-234-0700

Registration Hours

ATE Registration Desk, West Conference Foyer

Wednesday:	10:00 am – 8:00 pm
Thursday:	7:00 am – 6:00 pm
Friday:	7:30 am – 12:30 pm

Badge Identification

Each person who registers for the ATE Conference must wear their name badge for entry into sessions, meal events, receptions, and the exhibit hall.

Accessibility Information

All meeting rooms can be accessed through the elevators in the West area of the hotel with the exception of the Regency and Ambassador Ballrooms. A wheelchair lift is located next to the Ambassador Ballroom main entrance and can be taken down to the Regency level for entry to both Ambassador and Regency Ballrooms. Restrooms with wheelchair access are located on both Level 1B and 2B (inside of the Health Club); on the lobby level; and in Robert's Restaurant.

Live Twitter Stream #ATEPI

ATE@25 Celebration

Be on the look-out for information on social media opportunities, showcase activities, and prize drawings in celebration of the 25th anniversary of NSF's ATE program!

SCHEDULE-AT-A-GLANCE

WEDNESDAY, OCTOBER 24, 2018

PRECONFERENCE ACTIVITIES

10:00 am – 8:00 pm	Conference Registration West Conference Foyer
1:00 – 7:30 pm	Attendee Networking Lounge Committee
1:00 – 5:00 pm	Workshop A: Getting Started Advance Registration and Ticket Required Palladian
1:00 – 4:00 pm	Workshop B: ATE PI Survival Guide – Surviving and Thriving in the ATE Program Advance Registration and Ticket Required Diplomat
1:00 – 4:00 pm	Workshop C: Lessons from Big Duck – How Branding and Marketing Strategies Can Strengthen Your ATE Work Advance Registration and Ticket Required Ambassador
1:00 – 4:00 pm	Workshop D: Using Social Media as a Recruitment and Retention Tool Advance Registration and Ticket Required Congressional
1:00 – 4:00 pm	Workshop E: Survey Fundamentals – Good Data Starts with Good Questions Advance Registration and Ticket Required Empire
1:30 pm	ATE Student Meet & Greet Open to ATE Students Only Executive
3:15 – 5:30 pm	Showcase I Set-Up Exhibit Hall
CONFERENCE OPENING	
5:45 – 7:00 pm	Opening Plenary Session: Helping Students to Perceive, Plan, Prepare, and Persist (P ⁴) toward Higher Education and Employment Regency
7:00 – 9:15 pm	Showcase I and Welcome Reception Exhibit Hall
9:15 – 10:00 pm	Showcase I Breakdown Exhibit Hall

THURSDAY, OCTOBER 25, 2018

7:00 am – 6:00 pm	Conference Registration West Conference Foyer
7:00 am – 6:00 pm	Attendee Networking Lounge Committee
7:30 – 8:45 am	Showcase II Set-Up Exhibit Hall
7:30 – 8:45 am	Breakfast Regency
7:45 – 8:45 am	Breakfast Roundtables Ambassador
9:00 – 10:00 am	Concurrent Sessions
	Session 1: Building and Deepening Employer Engagement Ambassador
	Session 2: Preparing Technicians for Emerging Technologies and the Future of Work Diplomat
	Session 3: Redesigning Mathematics for Technical Students Empire
	Session 4: Celebrating 25 Years of Preparing Students to Join America's Skilled Technical Workforce Palladian
10:00 – 10:15 am	Refreshment Break Diplomat, Ambassador, and Empire Foyers
10:15 – 11:15 am	Industry "Speed Networking" Session for ATE Students Open to ATE Students Only Executive
10:15 – 11:00 am	Forum and Discussion Sessions
	Creating a Multidisciplinary Workforce Forum: Track 1 Empire
	Unmanned Aerial System Projects: A Coast-2-Coast-2-Coast Perspective Forum: Track 1 Hampton
	Education Pathways For Technicians in the Workforce Discussion: Track 1 Capitol
	Makerspaces for CTE/STEM: Strategies for Teaching, Inclusion, and Workforce Discussion: Track 1 Embassy
	How to Support Employability Skills: Harvesting Ideas from the Field Discussion: Track 2 Cabinet
	Summer Camps to Career Pathways Forum: Track 3 Congressional A
	Seeking Success in Hidden Careers Forum: Track 3 Congressional B

	THURSDAY, OCTOBER 25, 2018
10:15 – 11:00 am	Forum and Discussion Sessions (continued) Bitcoins, Blockchain, and Cybersecurity: Teaching Technologies Without Hype Discussion: Track 3 Diplomat Increasing the Student Biotech Pipeline – From Recruitment to Employment Discussion: Track 3 Calvert
	Encouraging Innovation in Professional Development Discussion: Track 4 Forum
	Building and Deepening Employer Engagement – Discussion Round Discussion: Track 5 Ambassador
	Working with Regional, State, or Federal Industry Organizations Forum: Track 5 Governors
	Using a Supply Chain Model to Recruit and Educate Students; and Models for Developing Faculty Leaders Forum: Track 5 Palladian
	Sharing Our Strategies: Using the ATE Impacts Book for Outreach and Collaboration Discussion: Track 5 Senate
11:15 am – Noon	Forum and Discussion Sessions
	Get More Veterans in Your College Using the DoD Career Skills Program Forum: Track 1 Palladian
	Needed Math: Closing the Gap Between Math That's Taught, Learned, and Needed Forum: Track 1 Diplomat
	The Impact of Smart Logistics on Supply Chain Management Forum: Track 1 Empire
	Best Practices in Designing Immersive, Lab-Based Learning Activities in Advanced Technology for STEM Students Forum: Track 1 Congressional B
	Preparing Technicians for the Future of Work Discussion: Track 1 Capitol
	Engaging Students in sUAS through Service Learning and Drone Challenges Forum: Track 3 Hampton
	Embedding Emerging Technology for Under \$1,000 Forum: Track 3 Governors
	EESTEM II: Creating Equitable Learning Environments in STEM <i>Discussion: Track 3</i> Calvert

	THURSDAY, OCTOBER 25, 2018
11:15 am – Noon	Forum and Discussion Sessions (continued) Advancing Technician Education through Evidence-based Decision Making Discussion: Track 4 Embassy
	Cost-Effective ATE Evaluations: Making Them Work Discussion: Track 4 Forum
	ATE Coordinating Networks – Extending ATE's Reach through Collaborative Synergies Forum: Track 5 Congressional A
	Working Partners: Keys to Successful Educator–Industry Partnerships Forum: Track 5 Ambassador
	Meeting Demands for Skilled Employees with Competency-Based Education Discussion: Track 5 Cabinet
	What, When, and How: Archiving with ATE Central Discussion: Track 5 Senate
Noon – 2:00 pm	ATE Student Poster Session and Lunch Regency
2:15 – 2:45 pm	Demonstration Sessions
·	Utilizing Virtual Reality for Advanced Technological Education Demonstration: Track 1 Diplomat
	Using Live Stream Technology for Professional Development and Outreach Demonstration: Track 1 Capitol
	Hands-on Math Activities to Engage Manufacturing Students Demonstration: Track 3 Palladian
	Acquiring STEM and Soft Skills by Developing AVR Content for Clients Demonstration: Track 3 Hampton
	Advanced Technological Education and Autistic Experience Demonstration: Track 3 Calvert
	Aligning Employers and Classrooms: Using a Body of Knowledge to Analyze Syllabi Demonstration: Track 4 Governors
	Principles of Survey Question Development: A Crash Course Demonstration: Track 4 Executive
	ATE Industry Partnerships: Introducing the Working Partners Toolkit Demonstration: Track 5 Congressional

	THURSDAY, OCTOBER 25, 2018
2:15 – 2:45 pm	Demonstration Sessions (continued) Building Relationships by Engaging High School STEM and CTE Teachers Demonstration: Track 5 Ambassador Engaging Industry Partners to Develop Simulations for Workforce Development Demonstration: Track 5 Empire
3:00 – 3:30 pm	Demonstration Sessions
	Just In Time Learning – Create Once, Use Multiple Ways Track 1 Diplomat
	Using Interactive, Multi-Platform, Location-Based Survey and Presentation Tools to Integrate Spatial Concepts into Existing Curriculum Demonstration: Track 1 Capitol
	Engaging Teachers to Incorporate Industry Awareness into STEM Curriculum Demonstration: Track 2 Ambassador
	Enhancing Learner Engagement through Industry 4.0 Summer STEM Camp Demonstration: Track 3 Calvert
	Low Cost Nano/Microfabrication Using VR Training and Printing Technology Demonstration: Track 3 Empire
	Smart Robots, Drones, and Internet of Things (IoT) Devices – Embedded AI Demonstration: Track 4 Hampton
	The STEM Guitar KSA Approach: Mapping Project Components with Workforce Skills Demonstration: Track 4 Governors
	Alt-Words, Slugs, and Adwords, Oh My! – Keys to Maximizing Your Digital Marketing Demonstration: Track 5 Palladian
	Licensing Your Content to Increase Dissemination and Use Demonstration: Track 5 Congressional
	Leading for Community College Excellence: Curricular Resources Demonstration: Track 5 Executive
3:45 – 6:00 pm	Showcase II and Reception Exhibit Hall
6:00 – 6:45 pm	Showcase II Breakdown Exhibit Hall

FRIDAY, OCTOBER 26, 2018

7:30 am – 12:30 pm	Conference Registration West Conference Foyer
7:30 – 10:00 am	Attendee Networking Lounge Committee
7:30 – 8:45 am	Breakfast Regency
7:30 – 8:45 am	ATE Student/Alumni Recognition Breakfast By Invitation Only Empire
7:45 – 8:45 am	Breakfast Roundtables Ambassador
9:00 – 10:00 am	Plenary Session: From PI to Community College President – Leadership Perspectives on ATE, America's Technological Workforce, and the Next 25 Years Regency
10:15 am – 12:30 pm	High Impact Workshops
	Workshop 1: Creating an Unmanned Aerial Systems Program and Pathways Diplomat
	Workshop 2: Essential Practices for Impact on the 21st Century Manufacturing Industry and Workforce Empire
	Workshop 3: Learn How to Successfully "Move Up" with Your Next ATE Grant Proposal Palladian
	Workshop 4: Applied Research 101 – PathTech LIFE and LISTEN Research in Action Executive
10:15 – 11:15 am	Synergy Meetings
	Addressing the Technical Workforce Needs of the Agriculture Industry Congressional
	HSI Strategies/Challenges: Growing America's Technological Workforce Governors
	Developing Middle-Skilled Data/Big Data Practitioner Programs Ambassador
	ATE Evaluation Network Launch Capitol
	Creating Effective Professional Development Activities Blue Room Pre
	Building a National Educational Community of Practice Blue Room* *Please enter the Blue Room through Robert's Restaurant.
11:30 am – 12:30 pm	Synergy Meetings
	ATE Biotechnology at 25: Impacts, Challenges, and the Future Congressional
	Documenting the Impact of 16 Years of ATE Cybersecurity Centers and Projects Ambassador

FRIDAY, OCTOBER 26, 2018		
11:30 am – 12:30 pm	Synergy Meetings (continued) Building a Mechatronics-Friendly Community from K-to-Gray Blue Room Pre STEM Thought Leaders' Summit Reflection Session Blue Room* *Please enter the Blue Room through Robert's Private Dining Room	
	Establishing Spread and Impact of Innovations Developed by ATE Centers Capitol Latino Leadership Initiative: Si, Se Puede!; Yes, We Can! Govenors	
12:30 – 1:00 pm	Box Lunches West Conference Foyer	
12:45 – 3:00 pm	ATE Center Directors' Meeting and Lunch Palladian	

GUIDE TO CONFERENCE SESSIONS

Please refer to the conference schedule for specific session times and room locations.

BREAKFAST ROUNDTABLES: Breakfast roundtables provide forums for informal discussion of a specific topic among small groups. Attendance is first-come, first-served, and limited to a maximum of 12 people, including the moderator, seated around one round table.

CONCURRENT SESSIONS: Concurrent sessions include formal presentations and/or panel discussions that address topics pertaining to the conference theme and the needs of the ATE community.

DEMONSTRATION SESSIONS: Demonstration sessions are formal 30-minute presentations that show how to use or apply a pedagogical tool, concept, or model. Presenters will walk attendees through a step-by-step explanation of the tool, concept, or model; its strengths and weaknesses; and how it can best be applied or implemented.

DISCUSSION SESSIONS: The discussion session format offers an interactive venue for ATE grantees to share promising practices and lessons learned with other members of the ATE community, to network, share insights, and explore ways to collaborate around similar areas of interest. Discussion moderators serve as facilitators of interactive, substantive discussions and small group activities.

FORUM SESSIONS: Forum sessions provide additional venues for formal presentation. Presenters may facilitate an exchange of ideas or share promising practices to provide greater insight into the issues outlined in the conference tracks.

HIGH IMPACT PRACTICE WORKSHOPS: High impact practice workshops are designed to address targeted areas of need within the ATE community, such as those identified in the conference tracks, including but not limited to addressing challenges in student recruitment/retention, grants management, evaluation, stakeholder engagement, and the implementation of new pedagogical or technological tools to keep pace with industry demand. High impact workshops focus on content that is relevant and applicable across STEM disciplines.

SYNERGY MEETINGS: Synergy meetings are informal gatherings of like-minded individuals who wish to discuss a certain topic without a planned agenda. Synergy meetings allow groups to meet and discuss issues relating to regular conference sessions and discuss common challenges.

SESSION TRACKS: The conference sessions feature topics pertaining to the conference theme and are organized by the following tracks:

- Track 1. ATE@25: Leading Development of America's Technological Workforce Examples of topics in this category include: evidence-based teaching strategies, undergraduate research, competency-based learning, work-based learning, stackable credentials, credit for prior work experience, internships, apprenticeships, bridge programs, addressing emerging career fields/ technologies, career pathways, and assessment strategies and resources.
- Track 2. Developing STEM Leaders in Innovation Examples of topics in this category include: methods and models for professional and faculty development, faculty externships, leadership development, new PI succession planning, and mentoring programs.
- Track 3. Engaging Students for Success in STEM Examples of topics in this category include: interactions with secondary school CTE programs, dual enrollment, career awareness/outreach, working with guidance counselors and career coaches, summer camps, direct student interaction with industry, and strategies for recruiting and retaining underrepresented students.
- Track 4. Advancing Innovation through STEM Research and Evaluation

Examples of topics in this category include: strategies for conducting institutional and educational research, partnering with four-year colleges on student learning outcomes, strategies for capturing reliable impact data, and evaluation.

Track 5. Broadening the Impact of ATE by Engaging Partners

Examples of topics in this category include: creating and leveraging partnerships with business and industry, college administrators, secondary schools, funders, local/state government, and/or the community; addressing workforce development needs through collaboration with business/ industry; and outreach and marketing to external constituents.

SHOWCASE SESSIONS: The showcase sessions provide grantees an opportunity to exhibit their projects and share information with other programs, NSF program directors, and guests at the conference. ATE projects and centers present displays that capture the purposes and products of their programs. The displays are divided into two sessions featuring ATE centers and projects. The conference's main meal events are coordinated as part of the showcase sessions.

STUDENT POSTER SESSION: ATE students will highlight their program of study and/or career path at a student poster session. Please take the time to visit the student posters and show your support of their efforts.

PRECONFERENCE ACTIVITIES

10:00 AM – 8:00 PM

Conference Registration

West Conference Foyer

1:00 – 7:30 PM

Attendee Networking Lounge Committee

This room is open to conference attendees for informal networking and conversation, and offers a place to plug in your computer and charge your handheld devices.

1:00 – 5:00 PM

Workshop A: Getting Started

Advance Registration and Ticket Required Palladian

V. Celeste Carter, L. Rashawn Farrior, Janelle Gosey, Tom Higgins, Ginna Ingram, Jennifer Springman, Heather Watson, National Science Foundation, Alexandria, VA; Elaine Craft, Dennis Faber, Mentor-Connect, Florence, SC; Ed Almasy, Rachael Bower, ATE Central, University of Wisconsin–Madison, Madison, WI; Emma Perk, EvaluATE, Western Michigan University, Kalamazoo, MI

This workshop is recommended for all principal investigators, co-principal investigators, and other team members involved in newly awarded projects and centers in FY18. Others who may find the workshop useful include new awardees in FY17 and other project personnel from prior years who have recently become involved in ATE projects and centers. The goal of this workshop is to make new grantees aware of the reporting and financial requirements of their ATE grant and to connect them with other ATE projects and centers that can help them successfully manage, evaluate, and report on their projects. Participants will have the opportunity to interact with individuals from Mentor Connect, ATE Central, EvaluATE, and the National Science Foundation and to learn about the various resources they provide. Each participant will be provided with a resource packet. Participants are encouraged to bring questions about the management of their project as there will be ample time for questions and answers. Participants should also bring a copy of their award letter and a laptop computer or tablet with them to the session.

1:00 – 4:00 PM

Workshop B: ATE PI Survival Guide – Surviving and Thriving in the ATE Program

Advance Registration and Ticket Required **Diplomat**

Osa Brand, Mentor-Connect, Great Falls, VA; **Chris Carter,** Virginia Space Grant Consortium, Hampton, VA; **Mel Cossette,** MatEdu, Edmonds Community College, Lynnwood, WA; **Louise Petruzzella,** Shoreline Community College, Shoreline, WA; **Pam Silvers,** Asheville-Buncombe Technical College, Asheville, NC; **Karen Wosczyna-Birch,** RCNGM, Connecticut College of Technology, CT

This workshop is designed for ATE PIs and Co-PIs entering the second or third year of their grants who could use assistance and guidance in elements of grants award management to "survive and thrive" in the ATE program. Come talk with experienced ATE PIs to learn successful tips and hear lessons learned in troubleshooting common challenges such as implementing budget and personnel changes; engaging administrators in support of your efforts; navigating grant guidelines and documents such as the Proposal and Award Policies and Procedures Guide (PAPPG); preparing annual reports; and understanding NSF expectations for ATE awards. There will also be time set aside for small group discussion for participants to bring their own challenges to the table for discussion, feedback, and guidance. In addition, session facilitators will introduce some initial steps to consider in preparing for future NSF grant funding opportunities.

■ 1:00 – 4:00 PM

Workshop C: Lessons from Big Duck – How Branding and Marketing Strategies Can Strengthen Your ATE Work

Advance Registration and Ticket Required Ambassador

Rachael Bower, ATE Central, University of Wisconsin– Madison, Madison, WI; **Farra Trompeter,** Big Duck, Brooklyn, NY

Ever been curious about what it would be like to work with a communications firm and learn more about branding and marketing from a pro? In this three-hour workshop you will learn from Farra Trompeter, Vice President of Big Duck, a communications firm based in Brooklyn, whose clients include a variety of nonprofit organizations and foundations, like Math for America, the American Wind Energy Association, Center for Community Change, Parent Project Muscular Dystrophy, and many more. Big Duck works exclusively with nonprofits to help strengthen their branding, marketing, and communications, and have a host of practical lessons to share about this process. Join us and learn how to utilize strategies from branding and marketing to inform and strengthen the work your project or center is doing in critical areas like recruiting, outreach, communications, and sustainability.

■ 1:00 – 4:00 PM

Workshop D: Using Social Media as a Recruitment and Retention Tool

Advance Registration and Ticket Required **Congressional**

Lynn Dohm, Nelly Group, LLC, Frankfort, IL; Heidi Larson, Education Development Center, Waltham, MA; Janice Mazzallo, PeoplesBank, Holyoke, MA; Dave Sweeney, Viz-Bang Productions, Agawam, MA; Gordon F. Snyder, OP-TEC, University of Hartford, West Hartford, CT

Increasingly, schools, businesses, community organizations, and government agencies are turning to social media as a tool for recruiting and retaining students, clients, and customers. Simply posting information about programs on websites and college catalogs is ineffective and general program promotions have shown very limited success. In the first half of this workshop, three industry professionals will describe how they worked directly with community colleges to develop and implement social media campaigns aimed at student recruitment and retention. Topics for discussion include identifying target audiences, selecting social media platforms, posting frequency, crafting content for social media messaging, and monitoring messaging effectiveness. In the second half of the workshop, participants will work in small groups with session leaders to lay the groundwork for developing personalized recruitment and retention strategies and learn how to build upon their current efforts.

■ 1:00 – 4:00 PM

Workshop E: Survey Fundamentals – Good Data Starts with Good Questions

Advance Registration and Ticket Required
Empire

Lyssa Becho Wilson, Lori Wingate, Western Michigan University, Kalamazoo, MI

Surveys are a valuable source for project and evaluation data. However, obtaining quality data relies heavily on well-crafted survey items. In this hands-on workshop, participants will learn how to be strategic and purposeful in their survey creation, considering constructs measured, types of data desired, and analysis required. ATE principal investigators, project and center staff, and evaluators who attend this workshop will learn (1) essential strategies for crafting good survey questions, (2) how to consider data analysis in survey construction, and (3) how to align survey questions with the overall evaluation plan. Participants are encouraged to bring draft surveys from their own projects to review and discuss.

1:30 PM

ATE Student Meet & Greet Open to ATE Students Only

Executive

For any ATE students arriving early to the conference, AACC is coordinating an informal meet and greet opportunity—including a guided tour of the Omni Shoreham Hotel, information on its rich history, and a visit to its infamous ghost suite. Join us for some light refreshments, and an opportunity to meet fellow students and AACC staff. Following the hotel tour, interested students can self-organize into groups to go out and explore Washington, D.C.—and an AACC staff member will be on-hand to offer guidance on where to go and to answer questions about the area. Student groups can then head out on their own and return to the Omni Shoreham prior to the conference opening session at 5:45 p.m.

3:15 – 5:30 PM Showcase I Set-Up

Exhibit Hall

CONFERENCE SCHEDULE WEDNESDAY • OCTOBER 24

CONFERENCE OPENING

5:45 - 7:00 PM

Opening Plenary Session

Regency

V. Celeste Carter, Lead ATE Program Director, National Science Foundation

George R. Boggs, President and CEO Emeritus, American Association of Community Colleges

F. Fleming Crim, Chief Operating Officer, National Science Foundation

Helping Students to Perceive, Plan, Prepare, and Persist (P⁴) toward Higher **Education and Employment**



Christine Darden, Former Researcher and Executive

data analyst, and aeronautical engineer whose career at NASA Langley Research Center spanned nearly 40

research. She is one of the few African-American women known as NASA's "Human Computers," diverse STEM workforce.

7:00 – 9:15 PM

Showcase I and Welcome Reception **Exhibit Hall**

9:15 - 10:00 PM Showcase I Breakdown

Exhibit Hall

7:00 AM – 6:00 PM

Conference Registration West Conference Foyer

7:00 AM – 6:00 PM

Attendee Networking Lounge Committee

This room is open to conference attendees for informal networking and conversation, and offers a place to plug in your computer and charge your handheld devices.

7:30 – 8:45 AM

Showcase II Set-up Exhibit Hall

7:30 – 8:45 AM Breakfast

Regency

7:45 – 8:45 AM

Breakfast Roundtables Ambassador

9:00 – 10:00 AM CONCURRENT SESSIONS

Session 1: Building and Deepening Employer Engagement Ambassador

Hope Cotner, Center for Occupational Research and Development, Waco, TX; James F. Guenther, Delgado Community College, New Orleans, LA; Tu Huynh, Comerica Bank, Allen, TX; Kevin Simpson, Autoimmune Technologies, LLC, New Orleans, LA; Glenn Wintrich, InterLink, Irving, TX; Ann Beheler (Moderator), National Convergence Technology Center, Collin College, Frisco, TX

A panel of industry and educational experts will focus on how to build highly engaged employer teams to guide college programs. The Business and Industry Leadership Team (BILT) model for aligning curriculum to produce "workforce-ready" graduates will be discussed along with a method to engage employers in creating new curriculum. Documentation, including a BILT toolkit, will be shared—and participants will have the opportunity to interact with presenters through a question and answer period as well as a follow-up discussion session.

Session 2: Preparing Technicians for Emerging Technologies and the Future of Work Diplomat

Peter Bale, Sentinel Robotic Solutions, Wallops Island, VA; **Rosario Girasa,** Pace University, New York, NY; **Martti Thomas,** Tesla, San Francisco, CA; **Mary Slowinski** (*Moderator*), Bellevue College, Bellevue, WA

Preparing technicians to meet future workforce needs by keeping in pace with emerging technologies is a major challenge community colleges face when designing and implementing STEM programs. Join this session for a robust panel conversation with industry and education leaders about three emerging technology areas, and their projected impact on technician education programs. This session will highlight drones and unmanned aircraft systems; electric cars, trucks, and renewable energy solutions; and Blockchain technology, including new methodologies for use beyond cryptocurrencies. Presenters will also share insights into the skills students will need to be successful in the workforce of today and tomorrow.

Session 3: Redesigning Mathematics for Technical Students Empire

Kevin Cooper, RCNET, Indian River State College, Fort Pierce, FL; **Jo-Anne Hongo**, J.S. Hong Consulting, Inc., Redwood City, CA; **Xueli Wang**, University of Wisconsin– Madison, Madison, WI; **Gerhard Salinger** (*Moderator*), GLS Educational Consulting, LLC, Albuquerque, NM

Students, especially those from minority and low socioeconomic groups, often possess the technical aptitude required in technical disciplines but numeracy deficiencies frequently lead to underrepresentation in technical programs and the workforce. This session describes research into teaching those competencies, an example of a contextualized mathematics sequence already developed, and an industry-promoted vision for the future. Presenters will share (1) research findings around how faculty make meaning of contextualization, a classroom observation protocol to capture how faculty contextualize mathematics, and a survey to capture student learning experiences; (2) a novel example for overcoming the mathematics barrier; and (3) proceedings from a recent conference of industry personnel, two-year college STEM faculty, and mathematics educators that emphasized the need for more mathematical modeling; and understanding of graphs, statistics, and the use of problems based on industry scenarios.

Session 4: Celebrating 25 Years of Preparing Students to Join America's Skilled Technical Workforce

Palladian

Hilda Arguelles, Pratt & Whitney, East Hartford, CT; James Gannage, Gannage Technology Services, Inc., Arroyo Grande, CA; Marlena Jackson, Genentech, Inc., San Francisco, CA; Mary Patton, IHS Markit, Plano, TX; Jeremy Scott, Austin Energy, Austin, TX; Victor McCrary (*Moderator*), National Science Board, Alexandria, VA

In celebration of 25 years of the ATE program, this session will highlight STEM industry professionals from their ATE student beginnings to their value and impact as leaders in the skilled technical workforce. The panel will begin with an overview of the National Science Board's Task Force on the Skilled Technical Workforce, which was established to identify the opportunities and challenges facing students, incumbent workers, businesses, and educators—with the objective to recommend strategies and policies to support efforts to strengthen the skilled technical workforce. Participants will then hear directly from a panel of ATE program graduates about how the ATE program helps students transition into the workplace, the skills students need to be successful on the job, the benefits to employers of hiring ATE-prepared graduates, and the role of community colleges and ATE in leading the development of America's technological workforce.

■ 10:00 – 10:15 AM

Refreshment Break

Diplomat, Ambassador, and Empire Foyers

10:15 – 11:15 AM

Industry "Speed Networking" Session for ATE Students

Open to ATE Students Only **Executive**

Facilitator: **Deborah Boisvert,** University of Massachusetts–Boston, Boston, MA

Speed networking is a process designed to facilitate introductions between business/industry representatives and student participants. This session will afford student participants the opportunity to meet accomplished business professionals from a variety of backgrounds and companies. It promises to be an enjoyable, fast-paced, and informative experience as students are given an opportunity to learn and practice interview and communication skills.

10:15 – 11:00 AMFORUM AND DISCUSSION SESSIONS

Creating a Multidisciplinary Workforce

Forum: Track 1

Empire

Mike Lesiecki, Luka Partners, LLC, Phoenix, AZ; Benjamin Reid, Impact Allies, Ennis, TX; John Sands, Moraine Valley Community College, Palos Hills, IL; Kenneth Walz, Madison Area Technical College, Madison, WI

As 21st century advanced technologies evolve and become mainstream, the distinction between fields is blurred. This creates opportunities and challenges to academia as tomorrow's professionals must have a wider breadth and depth of knowledge across a multitude of disciplines. Learn how three ATE Centers have incorporated a variety of curriculum modules into current courses by matching project learning objectives and scaled up retraining efforts with past graduates and the incumbent workforce.

Unmanned Aerial System Projects: A Coast-2-Coast-2-Coast Perspective

Forum: Track 1 Hampton

Chris N. Carter, Virginia Space Grant Consortium, Hampton, VA; **Wing Cheung,** Palomar College, San Marcos, CA, **Phil Davis,** Del Mar College, Corpus Christi, TX

Three concurrent NSF ATE projects on Unmanned Aerial Systems are now in their second and third years and have a number of innovations and findings to share with the wider ATE community. The projects have several lessons learned, best practices, and tips for successful project management to share including availability of UAS-specific curriculum, best practices for preparing UAS technicians, best practices for articulating with secondary schools, and strategies for recruiting underserved minorities and women.

SESSION TRACKS

Track 1. ATE@25: Leading Development of America's Technological Workforce Track 2. Developing STEM Leaders in Innovation Track 3. Engaging Students for Success in STEM

- Track 4. Advancing Innovation through STEM Research and Evaluation
- Track 5. Broadening the Impact of ATE by Engaging Partners

10:15 – 11:00 AM FORUM AND DISCUSSION SESSIONS

Education Pathways For Technicians in the Workforce

Discussion: Track 1 Capitol

Zachary Carrico, Jeremy D. Spraggs, Fulton-Montgomery Community College, Johnstown, NY

A common challenge is to attract students to community college programs that lead to careers in the high-tech fields in demand by local employers. Excellent technician-level career paths are available; but they are often overlooked or dismissed by high school students and parents. Learn how to overcome this disconnect by modifying and creating pathways for high school students, holding engaging summer camps for learners, and conducting outreach to guidance counselors.

Makerspaces for CTE/STEM: Strategies for Teaching, Inclusion, and Workforce

Discussion: Track 1 Embassy

Maura J. Devlin-Clancy, Kathleen White, City College of San Francisco, San Francisco, CA

With California Community College Maker Initiative funding, City College of San Francisco (CCSF) established MakerSPHERE, three networked makerspaces. This discussion will share information on designing and equipping three makerspaces; recruiting and retaining female and underrepresented students; and connecting to the CCSF Teacher Prep Center to grow future teachers in CTE/STEM. Discussion topics include how to set up new spaces and establish a Community of Practice, recruiting nontraditional students, curriculum development, and new strategies for Making in education.

How to Support Employability Skills: Harvesting Ideas from the Field

Discussion: Track 2 Cabinet

Julie Remold, Louise Yarnall, SRI International, Menlo Park, CA

Whether you have found some successful ways to improve your technology, students' employability skills, or are looking for some new ideas, this discussion session is for you. In both small group and large group activities, participants will discuss ways to better support STEM technician learners from nontechnical backgrounds, nontraditional populations, or high-stress lives. Drawing on ongoing research, you will learn how to better prioritize and customize the learning of employability skills for the diverse students entering STEM technician fields.

Summer Camps to Career Pathways Forum: Track 3 Congressional A

Tobey Anne Allen, Jennifer Palestrant, The SMART Center, Tidewater Community College, Virginia Beach, VA; **Sarah Janes,** San Jacinto College District, Pasadena, TX; **Sarah Scherer,** Seattle Maritime Academy, Seattle Central College, Seattle, WA

Since 1950 the number of occupations that students can choose from, as well as the number of colleges and universities they can attend, has more than doubled. Educators and counselors have to engage students at a younger age to help guide them into career pathways that will equip them with the skills and credentials they need to meet critical workforce needs. Summer camps represent a unique career awareness and pathway preparation vehicle that community colleges can utilize, leveraging their internal resources and external partnerships to build a student and workforce pipeline.

10:15 – 11:00 AM FORUM AND DISCUSSION SESSIONS

Seeking Success in Hidden Careers

Forum: Track 3 Congressional B

Lawrence Beaty, Idaho State University, Pocatello, ID; Nanette Marcum-Dietrich, Millersville University, Millersville, PA; Katie Surra, Thaddeus Stevens, College of Technology, Lancaster, PA

While women are grossly underrepresented in many STEM fields, the gender-gap can be even more pronounced in "hidden" technical careers where the behind-the-scenes nature of the work means they are not well known. This session will provide the opportunity to compare and contrast the approaches and outcomes of two distinct NSF ATE funded projects, each of which has successfully increased female student enrollment in traditionally male-dominated, hidden STEM fields.

Bitcoins, Blockchain, and Cybersecurity: Teaching Technologies Without Hype

Discussion: Track 3 Diplomat

Debasis Bhattacharya, University of Hawaii Maui College, Kahului, HI; **Rosario Girasa,** Pace University, New York, NY

Join a discussion on the current effort to distill the essence of the growth of bitcoins, blockchains, and their implications to cybersecurity. Cryptocurrencies are becoming popular with banks, consumers, and various industries. There is a need for consumers to understand the basic underlying technology behind these cryptocurrencies and the underlying security risks and concerns.

Increasing the Student Biotech Pipeline – From Recruitment to Employment

Discussion: Track 3 Calvert

Stephen Brown, Par Mohammadian, Los Angeles Mission College, Sylmar, CA

In this discussion, session leaders will discuss lessons learned related to student recruitment, and developing successful partnerships with high schools and industry partners in offering biotechnology stackable credit programs. Discussion topics will focus on questions related to recruitment and retention activities, transfer, internships, and employment opportunities for students, as well as strategies for implementation.

Encouraging Innovation in Professional Development

Discussion: Track 4

Terryll Bailey, The Allison Group North, Seattle, WA; **Arlen Gullickson,** The Evaluation Center, Western Michigan University, Kalamazoo, MI

Participants will learn what is expected in professional development evaluations and how formative assessment systems support that effort and improve STEM transfer of learning. Afterwards each table of participants will discuss questions about innovations in professional development evaluation and try to reach consensus in their answers to them. The plenary discussion that follows will provide for melding of cross-table perspectives.

SESSION TRACKS

Track 1. ATE@25: Leading Development of America's Technological Workforce Track 2. Developing STEM Leaders in Innovation Track 3. Engaging Students for Success in STEM Track 4. Advancing Innovation through STEM Research and Evaluation

Track 5. Broadening the Impact of ATE by Engaging Partners

10:15 – 11:00 AM FORUM AND DISCUSSION SESSIONS

Building and Deepening Employer Engagement – Discussion Round

Discussion: Track 5 Ambassador

Hope Cotner, Center for Occupational Research and Development, Waco, TX; James F. Guenther, Delgado Community College, New Orleans, LA; Tu Huynh, Comerica Bank, Allen, TX; Kevin Simpson, Autoimmune Technologies, LLC, New Orleans, LA; Glenn Wintrich, InterLink, Irving, TX; Ann Beheler (Moderator), National Convergence Technology Center, Collin College, Frisco, TX

In follow-up to the Thursday morning concurrent session on "Building and Deepening Employer Engagement," join industry and educational experts at the table level to take a deeper dive in how to develop employer collaborations and build highly engaged employer teams to guide college programs. Participants will have the opportunity to share their own strategies, learn from others, and discuss strategies for implementation.

Working with Regional, State, or Federal Industry Organizations

Forum: Track 5 Governors

Marilyn Barger, FLATE, Hillsborough Community College, Tampa, FL; Phil Centonze, FloridaMakes, Pembrooke Pines, FL; Richard Gilbert, University of South Florida, Tampa, FL; Mary Ann Pacelli, NIST Manufacturing Extension Partnership, Gaithersburg, MD

The 2018 NSF ATE RFP suggests center/project active involvement with regional, state, and national industry organizations. New proposal objectives will focus on activity interactions that generate impact on technician education and initial career placement. This session presents strategies to create such partnerships. Panel and audience interactions will use Florida's AS Engineering Technology degree, a specific statewide Manufacturing Extension Program (MEP) organization, and NIST, a federal agency that supports MEP's nationally as a specific partnership example.

Using a Supply Chain Model to Recruit and Educate Students; and Models for Developing Faculty Leaders Forum: Track 5

Palladian

Linnea Fletcher, AC2 Bio-Link Regional Center, Austin Community College, Austin, TX; **Dave Micklos,** DNA Learning Center, Cold Spring Harbor, NY; **Russ H. Read,** Forsyth Technical Community College, Winston-Salem, NC; **Kristen Wolslegel,** BABEC, San Francisco, CA

This forum will share information on two high impact practices: (1) a supply chain model where high school and college students prepare lab materials for their own use and for other programs, which provides students the opportunity to practice market research, design a manufacturing process, and explore careers; and (2) a model that uses industry partnerships to prepare leaders by exposing community college faculty to leadership techniques presented by management from bioscience industry and trade organizations, as well as educational administrators.

Sharing Our Strategies: Using the ATE Impacts Book for Outreach and Collaboration

Discussion: Track 5

Edward Almasy, Rachael Bower, University of Wisconsin– Madison, Madison, WI

The ATE Impacts book and blog are invaluable tools for promoting the ATE program and the work of ATE grantees. In this session, participants consider creative strategies for using the book to connect with a wide array of audiences. Participants will work in small groups to generate a list of critical stakeholders and consider how to use the book and blog to initiate a discussion, point out the benefits of ATE, and share the impacts of their work in the context of the larger applied STEM education community.

11:15 AM – NOON FORUM AND DISCUSSION SESSIONS

Get More Veterans in Your College Using the DoD Career Skills Program

Forum: Track 1 Palladian

Chrys A. Panayiotou, Indian River State College, Fort Pierce, FL; **Gary B. Beasley,** Central Carolina Community College, Lillington, NC; **Greg Kepner,** Indian Hills Community College, Ottumwa, IA

LASER-TEC and its partner colleges have been working with military bases and companies in Florida and North Carolina to establish Career Skills Programs (CSP) to assist our veterans in returning to civilian life. CSPs are part of the DoD SkillBridge initiative connecting civilian businesses and companies with available training or internship opportunities that offer a high probability of employment for military personnel who are separating. Join us to learn how to start a similar program at your college.

Needed Math: Closing the Gap Between Math That's Taught, Learned, and Needed

Forum: Track 1 Diplomat

Marilyn Barger, FLATE- Hillsborough Community College, Tampa, FL; Michael Hacker, Hofstra University, Hempstead, NY; Jo-Anne Hongo, JS Hongo, Inc., Redwood City, CA; Paul Horwitz, The Concord Consortium, Concord, MA

A Needed Math Conference recently brought together employers in biotechnology, information and communications technologies, and manufacturing to meet with instructors, and with math educators. The conference focused on how math preparation might better reflect the concepts and skills needed for postsecondary technical education and entry-level STEM technician employment. This forum will enable participants to discuss how to increase the teaching and learning of mathematics that is truly needed in the technical workplace.

The Impact of Smart Logistics on Supply Chain Management

Forum: Track 1 Empire

Jeremy Banta, Tara Sheffer, Columbus State Community College, Columbus, OH; Robert Sompolski, Oakton Community College, Des Plaines, IL; Ned David Young, The National Center for Supply Chain Technology Education, Dayton, OH

This session will cover the emerging career field in logistics technology, including supply chain principles, engineering technology, and computer science. Panelists will discuss the needs of technologically educated employees, how multidisciplinary education is necessary, and how community colleges can get involved.

Best Practices in Designing Immersive, Lab-Based Learning Activities in Advanced Technology for STEM Students

Forum: Track 1 Congressional B

Peter L. Crabtree, Laney College, Oakland, CA; **Brian Lovell,** Georgia Piedmont Technical College, Stone Mountain, GA; **Robert Nirenberg,** Metropolitan Community College, Omaha, NE

A key challenge for STEM educators is the development of engaging hands-on laboratory experiences for students using advanced technology to solve complex problems. Of particular interest is the development of labs that advance students' problem-solving skills using open-ended and challenging problems involving multiple domains of knowledge. Using a case study drawn from a recent BEST Center professional development workshop, this session will offer a discussion of pedagogical strategies for designing effective laboratory experiences for STEM students.

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- Track 5. Broadening the Impact of ATE by Engaging Partners

11:15 AM – NOON FORUM AND DISCUSSION SESSIONS

Preparing Technicians for the Future of Work

Discussion: Track 1 Capitol

Hope Cotner, Center for Occupational Research and Development, Waco, TX; **Richard Gilbert,** FLATE, Hillsborough Community College, Tampa, FL

Technology advances are changing industries at an unprecedented pace, transforming both tasks and occupations. Demand for positions involving tasks that can be automated will decline and, in some cases, disappear, while entirely new occupations will emerge. What implications will these changes have for technician education? In this session, participants will engage in a dialogue about how the ATE community can prepare technicians for the evolving realities of the future of work.

Engaging Students in sUAS through Service Learning and Drone Challenges

Forum: Track 3 Hampton

Mandy Briggs, Parkland College, Champaign, IL; Wing Cheung, Palomar College, San Marcos, CA; Vincent A. DiNoto, Kentucky Community & Technical College System, Louisville, KY; Ken Yanow, Southwest Community College, Chula Vista, CA

Service learning projects and drone challenges engage students to join the growing sUAS industry. Sweetwater Union High School District (with the GeoTech Center) held a Drone Challenge. Students built a remotecontrolled drone that was "agile" and could deliver a payload. Palomar College and the Fallbrook Land Conservancy hosted a six-day summer camp for high school students. Participants created orthoimages, 3D models, and calculated vegetation indices using data they collected from drones.

Embedding Emerging Technology for Under \$1,000

Forum: Track 3

Kevin Cooper, RCNET, Indian River State College, Fort Pierce, FL; **Casey O'Brien,** National CyberWatch Center, Largo, MD

Technology use enhances learning outcomes, yet it advances at such a rapid pace that colleges have a hard time integrating emerging technologies into their curriculum due to obstacles of time and money. To enable STEM classrooms access, ATE Centers developed hands-on curriculums that use low-cost technologies and have quick adaption rates. Resources and stories will be shared that focus on teaching the principles of emerging technologies such as robotics, programming, and computational thinking.

EESTEM II: Creating Equitable Learning Environments in STEM

Discussion: Track 3

Calvert

Natalie Hilt, Stark State College, North Canton, OH; Gregory Jackson, Ben Williams, National Alliance for Partnerships in Equity, Gap, PA; Donna Lange, DeafTEC, Rochester Institute of Technology, Rochester, NY; Robert Mitchell, Dona Ana Community College, Las Cruces, NM

Since 2016 NAPE has delivered two cohorts of its Micromessaging Academy to 94 STEM CTE instructors and secondary partners from 14 community and technical colleges in 11 different states, to build STEM CTE educators' capacity to implement effective solutions to broaden participation and increase success for women, students of color, and students with disabilities in their classrooms. Participants will experience some of the activities from this innovative program, understand the structure and take-always, and reflect on lessons they can use.

11:15 AM – NOON FORUM AND DISCUSSION SESSIONS

Advancing Technician Education through Evidence-Based Decision Making

Discussion: Track 4 Embassy

David Bouvin, Chipola College, Marianna, FL; **Faye R. Jones, Marcia A. Mardis,** Florida State University, Tallahassee, FL

This session focuses on the ATE community's use of evidence-based decision making to advance technician education. Participants will share strategies for using evidenced-based practices to: (1) identify or improve program curricula that increases technician knowledge, (2) broaden participation of diverse student populations, and (3) increase the participation of industry. ATE leadership will be asked to share institutional practices, such as the use of student outcomes data and visual data representations that have been useful for achieving program results.

Cost-Effective ATE Evaluations: Making Them Work

Discussion: Track 4 Forum

Beth Peery, Lisa Shannon, Magnolia Consulting, Seattle, WA; **Mike Lesiecki,** Luka Partners, LLC, Phoenix, AZ

This session will focus on developing and implementing cost-effective ATE project evaluations. It will begin with a discussion of budgetary challenges to anticipate and consider. Next, through an interactive dialogue, the group will share strategies to address these challenges. The session will conclude by identifying promising practices for overcoming challenges that ATE grant seekers and grantees face when attempting to procure evaluation services to support cost-effective evaluations.

ATE Coordinating Networks – Extending ATE's Reach through Collaborative Synergies

Forum: Track 5 Congressional A

Mel Cossette, MatEdu, Edmonds Community College, Lynnwood, WA; **Rebecca Hartley,** Clemson University, Clemson, SC; **Steve Kane,** SpaceTEC Partners, Titusville, FL

Technology is fueling a renaissance in technician preparation for today's high-performance workspaces. In many cases however, businesses are struggling to find qualified workers. As a result, connecting businesses with skilled workers requires new approaches. It won't happen with a "if I build it, they will come" mentality. Coordination Networks (CNs) offer a resource to connect the dots in student preparation and placement in virtually any industrial sector. However, little is known about Coordinating Networks, how they are established, and how they are scaled and sustained across their areas of focus. This session addresses these and other topics of interest through an interactive panel of current CNs presenting their network's focus, how it was selected, and best practices for how it is maintained.

Working Partners: Keys to Successful Educator– Industry Partnerships Forum: Track 5

Ambassador

Ann Beheler, Collin College, Frisco, TX; Michelle Norgren, Missouri State University, Springfield, MO; Louise Petruzzella, Shoreline Community College, Shoreline, WA; Mary Slowinski, Bellevue College, Bellevue, WA

Successful industry partnerships are a crucial ingredient for robust, relevant technical workforce programs yet many educators struggle with initiating and sustaining such relationships. Join us for a quick overview of the eight partnership models identified by the Working Partners research project and to hear directly from experienced PIs on how to best approach, sell, and maintain productive industry relationships. Audience questions and contributions will be encouraged.

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11:15 AM - NOONFORUM AND DISCUSSION SESSIONS

Meeting Demands for Skilled Employees with Competency-Based Education

Discussion: Track 5 Cabinet

Jean Bower, Mary L. Nelson, Salt Lake Community College, Salt Lake City, UT

Advanced technology companies often hire unskilled technicians and train them despite this being a drain on time and resources. At the same time, NSF ATE funded programs train students in the skills employers need, but struggle with recruiting students. To overcome barriers to education and build a skilled workforce, Salt Lake Community College has converted the entire Biotechnology degree program to competency-based education (CBE). Session leaders will share and discuss best practices, the challenges of building a CBE curriculum, and how to make it work within existing college infrastructure.

What, When, and How: Archiving with ATE Central

Discussion: Track 5 Senate

Kendra Bouda, University of Wisconsin–Madison, Madison, WI

Whether you're just starting to think about archiving your project or center's deliverables or are already well on your way, now is the time to connect with ATE Central staff, share your experiences, and seek support. Please join us as we share information about the archiving service and explore best practices and lessons learned. Participants will craft initial archiving plans or update existing plans with the help of our staff, discuss workflow strategies, and more.

NOON - 2:00 PM

ATE Student Poster Session and Lunch Regency

V. Celeste Carter, Lead ATE Program Director, National Science Foundation

ATE@25: ATE Alumni Recognition



Hilda Arguelles, Senior Structures Discipline Manager, Pratt & Whitney, CT



James Gannage, CEO, Gannage Technology Services, Inc., CA



Marlena Jackson, Diversity Talent Partner, Talent Acquisition, Genentech, Inc., CA



Mary Patton, Senior Systems Administrator, IHS Markit, TX



Jeremy Scott, Business Systems Analyst, Austin Energy, TX

In celebration of the 25th anniversary of the ATE program, join us in recognizing five distinguished industry professionals who are ATE program graduates. Following this recognition, the 60 student attendees at the ATE Conference will take part in a poster session from 12:30 – 2:00 pm. NSF and AACC strongly encourage conference participants to visit the student poster session and talk with ATE alums and student attendees!

2:15 – 2:45 PMDEMONSTRATION SESSIONS

Utilizing Virtual Reality for Advanced Technological Education

Demonstration: Track 1 Diplomat

Jeff Bertrand, Rebecca Hartley, Kapil Chalil Madathil, Clemson University, Clemson, SC

The Center for Aviation and Automotive Technological Education Using Virtual E-Schools, or CA2VES, is focused on creating and evaluating virtual reality content for advanced technological education. In this session, we will demonstrate how we integrate virtual reality into our online learning management portal called Educate Workforce. We will highlight examples of our simulations and describe the process for developing them. In addition, we will share lessons learned and how others can use virtual reality for their training needs.

Using Live Stream Technology for Professional Development and Outreach

Demonstration: Track 1 Capitol

Osama Awadelkarim, Bob Ehrmann, Center for Nanotechnology Education and Utilization, Pennsylvania State University, University Park, PA; Dwaine Davis, Forsyth Technical College, Winston-Salem, NC; Neda Habibi, Northwest Vista College, San Antonio, TX*

Live stream technology is being used by ATE partners to deliver micro-nano technology professional development and to engage students and educators using RAIN Network tools. Using these two areas as launch points, this demonstration will focus on how to garner more widespread acceptance of the integration of direct distance technology into classrooms as well as its use in professional development.

*Other key team members include: **Tony Dalessio**, Erie Community College; **Barry Bates**, Atlanta Technical College; **Christina Arisio**, Ivy Technical College; **Kristine Schroeder**, North Seattle College; **Jared Ashcroft**, Pasadena City College; **Ozgur Cakmak**, **Terrence Kuzma**, NACK, Pennsylvania State University

Hands-on Math Activities to Engage Manufacturing Students

Demonstration: Track 3 Palladian

Rachel L. Johnson, Northeast Wisconsin Technical College, Green Bay, WI

One objective of the "Welding: Wisconsin's Ultimate Rural STEM Pathway" grant received by Northeast Wisconsin Technical College was to engage high school and technical college students through contextualized math curriculum that focuses specifically on welding and related manufacturing careers. This demonstration will feature a hands-on math activity and video that can be applied to several manufacturing programs.

Acquiring STEM and Soft Skills by Developing AVR Content for Clients

Demonstration: Track 3 Hampton

Linda H. Baxley, Levin Leesemann, Eastern Iowa Community College, Davenport, IA

Students in our college's AR/VR program developed modules to teach water technicians about centrifugal pump parts, operations, maintenance, and safety. A student will share how this experience provided valuable skills such as critical thinking, teamwork, communications, and project management. He will demonstrate the modules and participants will use them. The participants will learn how full-time, real-world project work over a semester can teach soft skills as well as how AVR learning modules can improving knowledge acquisition and retention without expensive hardware.

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2:15 – 2:45 PM DEMONSTRATION SESSIONS

Advanced Technological Education and Autistic Experience

Demonstration: Track 3

Elinore Alms, Fresno City College, Fresno, CA; Jessica Murray, Pellet Media, Reading, MA; Sara Sanders Gardner, Bellevue College, Bellevue, WA; Justin Robbins, Tufts University, Medford, MA; Susan Woods, Middlesex Community College, Bedford, MA

While we know that community colleges are often the best academic match for autistic students, we also know that employment rates for young autistic adults who have graduated from a degree program require our immediate attention as educators and advocates. What can STEM educators do to positively affect longterm outcomes for autistic students? We invite you to learn about the resources available on Stairway to STEM from the education experts and autistic students who created them.

Aligning Employers and Classrooms: Using a Body of Knowledge to Analyze Syllabi

Demonstration: Track 4

Governors

David Bouvin, Chipola College, Marianna, FL; **Faye R. Jones, Marcia A. Mardis,** Florida State University, Tallahassee, FL

In this session, presenters will demonstrate the development of an advanced manufacturing (AM) body of knowledge based on employers' perceptions of required worker competencies. Presenters will also demonstrate how they have used that body of knowledge to assess syllabi from several AM technician preparation programs in the rural Florida Panhandle, the process for refining and updating the body of knowledge, and the provision of recommendations to AM program leaders.

Principles of Survey Question Development: A Crash Course

Demonstration: Track 4 Executive

Lyssa Becho, Lori Wingate, EvaluATE, Western Michigan University, Kalamazo, MI

Surveys are a valuable source for evaluation data. Obtaining quality data relies heavily on well crafted survey items that align with the purpose of the evaluation. Through a hands-on activity and demonstration, participants will learn fundamental principles of survey question construction and how to identify and correct common flaws in survey questions. A handout of survey do's and don'ts will help attendees apply fundamental principles of survey question development in their own work.

ATE Industry Partnerships: Introducing the Working Partners Toolkit

Demonstration: Track 5 Congressional

Rachael Bower, University of Wisconsin–Madison, Madison, WI; Mary Slowinski, Bellevue College, Bellevue, WA

Effective industry partnerships are key to ATE project and center success yet it is not always clear how such relationships are formed or sustained. The Working Partners Research Project, whose core work has been collecting and analyzing ATE partnership data, recently launched an online Toolkit that captures the models and best practices uncovered by our research. Join us for a Toolkit tour, to ask questions, and to provide input on what would best support your industry partnership efforts.

Building Relationships by Engaging High School STEM and CTE Teachers

Demonstration: Track 5 Ambassador

Eric Bredder, Hunter Moore, Katie Thach, Piedmont Virginia Community College, Charlottesville, VA

Provide strategies on building strong relationships with high school teachers in your area and develop a professional development model that employs those teachers to build foundational concepts to your program. Presenters will share how to teach with advanced manufacturing technologies in classrooms, but also how to build a culture of troubleshooting, success in perseverance, and allowing for student creativity. Building these training models and relationships helps develop incoming teachers and students while spreading the outreach opportunity in the community.

2:15 – 2:45 PMDEMONSTRATION SESSIONS

Engaging Industry Partners to Develop Simulations for Workforce Development

Demonstration: Track 5

Empire

Michael Johnson, Excelsior College, Albany, NY; Eric A. Roe, University of Texas, Austin, TX

Excelsior College and Polk State College have partnered to develop simulations for workforce readiness. Their collaborative effort has been to develop simulations that replicate real-world experiences in the manufacturing and electrical generation sectors. Simulations include operating CNC machinery and troubleshooting different types of equipment. Students receive immediate feedback that lets the students know if they are misunderstanding a concept or incorrectly performing a task. Industry may incorporate the simulations into their training programs.

3:00 – 3:30 PM DEMONSTRATION SESSIONS

Just In Time Learning – Create Once, Use Multiple Ways

Demonstration: Track 1 Diplomat

Vince DiNoto, Ann Johnson, Kentucky Community & Technical College System, Louisville, KY

In the Digital Age, students are used to finding "How to" guides on the Internet. Just in Time Learning resources, in the form of short videos, can be created to help students and the workforce learn, review, and master topics in almost all fields. This demonstration will cover how to pick topics that will have a long life and include detailed steps to create these resources. Once created, the videos can be uploaded to a project's YouTube Channel or to the project's website. Analytics captured as the videos are viewed can help document dissemination of a project's resources.

Using Interactive, Multi-Platform, Location-Based Survey and Presentation Tools to Integrate Spatial Concepts into Existing Curriculum

Demonstration: Track 1 Capitol

Jackson D. Cothren, Hanna L. Ford, Malcolm D. Williamson, University of Arkansas, Fayetteville, AR

During this session, presenters will share examples of how GIS technologies have been integrated into existing curriculum and will conduct a live demonstration of these technologies. This approach for integrating spatial concepts into existing curriculum overcomes the time management difficulties encountered when covering the primitives of spatial knowledge. It does so by introducing spatial concepts as integrated tools often found in industry employment and/or as alternate presentation tools for completing capstone requirements.

Engaging Teachers to Incorporate Industry Awareness into STEM Curriculum

Demonstration: Track 2 Ambassador

Sandra Weber, The SMART Center, Tidewater Community College, Virginia Beach, VA

Over the last 8 years, the SMART Center has produced summer professional development programs for teachers and counselors. Each year the Center tasks those educators with creating lesson plans and learning modules that incorporate the maritime industry into their classrooms. During this session, participants will learn how to engage educators to produce industrybased lesson plans so that they can create a repository of lesson plans to be shared with educators. The collection tool demonstrated by the SMART Center will be examined in depth and participants will receive an electronic copy.

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3:00 – 3:30 PM DEMONSTRATION SESSIONS

Enhancing Learner Engagement through Industry 4.0 Summer STEM Camp

Demonstration: Track 3 Calvert

Don Wilcher, Jefferson State Community College, Birmingham, AL

In this session, instructional strategies used for learner engagement using Arduinos, micro:bit, and littleBits digital manipulatives for an Industry 4.0 Summer STEM Camp will be demonstrated. Participants will see physical parts of the Arduino, micro:bit, and littleBits digital manipulatives along with a demonstration of a wireless controller using two of the embedded platforms. In addition, participants will participate in creating Industry 4.0 STEM hands-on activities using mind maps and block flow diagrams assisted by the wireless controller demonstrator.

Low-Cost Nano/Microfabrication Using VR Training and Printing Technology

Demonstration: Track 3 Empire

Reza Kamali-Sarvestani, Paul Weber, Utah Valley University, Orem, UT

Virtual reality games have the advantage of preparing students one by one for working with tools at every step of the processes. In this demonstration, virtual reality examples of a university-level experiment and a large-scale line of fabrication will be presented. To illustrate low-cost hands-on activities, printing electronic circuits will be demonstrated. This session will focus on a size and dimension study using nanoparticles and the application of silver nanoparticles, graphene, and single-walled carbon nanotubes (SWCNT) in fabricating of electronic components.

Smart Robots, Drones, and Internet of Things (IoT) Devices – Embedded AI

Demonstration: Track 4 Hampton

Debasis Bhattacharya, University of Hawaii Maui College (UHMC), Kahului, HI

This session will provide a demonstration of the evolving role of embedded artificial intelligence (AI) chips located directly on cameras, drones, IoT devices, and other sensors in the field. Embedded AI enables data and image processing at the site of the sensor and less reliance on networking and connectivity. This project was conducted by undergraduate researchers at UHMC as a means to prototype the evolution of future smart cameras and drones. Student researchers used the Jetson TX2 Developer Kit from Nvidia to construct the demo.

The STEM Guitar KSA Approach: Mapping Project Components with Workforce Skills

Demonstration: Track 4

Governors

Imelda Castaneda-Emenaker, REaCHaLL, LLC, Hamilton, OH; **Thomas Singer,** Sinclair Community College, Dayton, OH

This demonstration session shows how the STEM Guitar Project applied its Knowledge (K) Skills (S) and Abilities (A) Map and Assessment Framework. This framework was developed as the guitar project-based learning concepts/activities are mapped against the NSFpublished pocket reference about materials, technology, and manufacturing competencies for employability/ technician skills, and the 21st Century Skills Framework for attitudes. During the session, participants will be engaged in a mapping activity and construct a draft matrix applied to their own contexts.

3:00 – 3:30 PM DEMONSTRATION SESSIONS

Alt-Words, Slugs, and Adwords, Oh My! -Keys to Maximizing Your Digital Marketing Demonstration: Track 5

Palladian

Kathleen Adams, MatEdU, Westminster, MD

Every ATE center or project wisely invests time and resources in a website. But is your website working as hard are you are? All the social media accounts in the world won't drive the traffic you're looking for if your website content isn't crafted and optimized for the right audiences to find you. Learn several easy steps to maximize the impact of your digital content and marketing work as well as the "4x" rule for ensuring that you're generating multi-platform results on the resources you're investing into product development.

Licensing Your Content to Increase Dissemination and Use

Demonstration: Track 5 Congressional

Corey Halpin, University of Wisconsin–Madison, Madison, WI

Have you created outstanding educational materials that you want colleagues to use, extend, and adapt? Appropriate licensing of them can greatly encourage adoption, whereas absent or inappropriate licensing can make that impractical or even impossible. Please join ATE Central staff as we talk about the fundamentals of licensing, explore licenses recommended in the ATE RFP, and discuss how licensing can improve dissemination and use of your work, while also building community around it.

Leading for Community College Excellence: **Curricular Resources**

Demonstration: Track 5 **Executive**

Millicent Bender, Monica Clark, The Aspen Institute, Washington, DC

The Aspen Institute's College Excellence Program focuses on identifying excellence across the community college field and elevating the best practices that enable colleges to achieve strong outcomes for students and their communities. Many of the lessons learned across Aspen's work have been translated into a robust set of curricular resources that have been used in Aspen's Presidential Fellowship Program. Twenty-four Fellows in the last two years have gone on to become presidents at community colleges around the country, taking the materials and lessons from the Fellowship with them. Recently, the College Excellence Program brought the entire curriculum online, creating an opensource library of resources for any practitioner to use. This demonstration will walk the audience through how to access and use our curricular resources related to engaging employers and driving strong labor market outcomes for students.

3:45 – 6:00 PM Showcase II and Reception **Exhibit Hall**

6:00 – 6:45 PM Showcase II Breakdown **Exhibit Hall**

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FRIDAY • OCTOBER 26

7:30 AM - 12:30 PM

Conference Registration West Conference Foyer

7:30 – 10:00 AM

Attendee Networking Lounge Committee

This room is open to conference attendees for informal networking and conversation, and offers a place to plug in your computer and charge your handheld devices.

7:30 – 8:45 AM

Breakfast Regency

7:30 – 8:45 AM

ATE Student/Alumni Recognition Breakfast By Invitation Only Empire

7:45 – 8:45 AM

Breakfast Roundtables Ambassador

9:00 – 10:00 AM

Plenary Session

Regency

Lee Zia, Deputy Division Director, Division of Undergraduate Education, National Science Foundation, VA

From PI to Community College President – Leadership Perspectives on ATE, America's Technological Workforce, and the Next 25 Years



Annette Parker, President, South Central College, MN



Edwin Massey, President, Indian River State College, FL



David Harrison, President, Columbus State Community College, OH



Moderator: V. Celeste Carter, Lead ATE Program Director, National Science Foundation, VA

The highest levels of community college administration face significant challenges in supporting STEM technician education programs at their institutions. For economic development in their region, a skilled technical workforce is critical in high-tech sectors. To be responsive to industry needs, presidents recognize the need to support and maintain the currency of their STEM programs. However, challenges in meeting program enrollments coupled with the cost of expensive equipment and infrastructure may force a CEO's decision to limit the college's support. Hear from a panel of community college presidents—who have all served as NSF principal investigators—as they address these challenges. Panelists will provide guidance on obtaining administrator support for ATE-funded programs, creating a campus culture that bolsters the efforts of faculty in pursuing and implementing grant-funded STEM initiatives, and exploring the issue of sustainability and leveraging ATE awards. Join a lively discussion as panelists share insights on how community colleges will need to position themselves to continue to lead the development of America's technological workforce for the next 25 years

10:15 AM – 12:30 PM HIGH IMPACT WORKSHOPS

(High Impact Workshops run for two hours with a scheduled break from 11:15 – 11:30 am)

Workshop 1: Creating an Unmanned Aerial Systems Program and Pathways Diplomat

Jon Beck, Stephen Sorenson, Northland Community and Technical College, Thief River Falls, MN; Jacqueline Housel, Andrew Shepherd, Sinclair Community College, Dayton, OH

A review of the creation and development of two unmanned aerial system (UAS) programs are presented. First, presenters will provide an overview of how a program may be designed including applications of focus and tools, resources, and activities that add value and excitement. Next, a review of a specialized aerial sensing data analysts program built in a competencybased education (CBE) modality will explore how complicated topics of UAS and data types including visual and multispectral/hyperspectral imagery and video, LiDAR, RADAR, acoustic, and CBRNE can be integrated successfully. The workshop includes an exploration of materials and other training resources that may be leveraged when pursuing the creation or expansion of a UAS program.

Workshop 2: Essential Practices for Impact on the 21st Century Manufacturing Industry and Workforce Empire

Karen Wosczyna-Birch, RCNGM, Connecticut College of Technology, CT; Ismail Fidan, Tennessee Tech University, Cookeville, TN; Elaine E. Kohrman, Somerset Community College, Somerset, KY; Ed Tackett, University of Louisville, Louisville, KY; Eric Wooldridge, Kentucky Community & Technical College System, Versailles, KY

This workshop will demonstrate techniques for creating a cutting-edge advanced manufacturing workforce and attracting industry and investment partners. Attendees will be able to apply the economic research methods and sales tactics shared in this workshop to leverage funding and create partnerships for broader impact. Presenters will also present their latest training activities and resources developed through ATE projects. Scenarios on advanced manufacturing will be provided and their impact to industry and student success will be discussed.

Workshop 3: Learn How to Successfully "Move Up" with Your Next ATE Grant Proposal Palladian

Elaine L. Craft, Mentor-Connect, Florence, SC; **Elizabeth J. Teles,** National Science Foundation, Alexandria, VA

You can become a STEM Leader in innovation by fueling your technician education efforts with a "Moving Up" ATE grant. What will help make my next grant proposal more competitive? How does a second proposal submission differ from the first? Learn the answers to these questions along with success strategies, insider tips, and mistakes to avoid in seeking your next ATE grant. During this workshop, a NSF program officer and ATE mentors will provide feedback to help you with your next grant proposal idea.

Workshop 4: Applied Research 101 – PathTech LIFE and LISTEN Research in Action Executive

Lakshmi Jayaram, Will Tyson, University of South Florida, Tampa, FL; **Danielly Orozco,** Hillsborough Community College, Tampa, FL

PathTech LIFE surveyed 3,216 students from 96 technician programs including large numbers of women, underrepresented minorities, and students from all stages of life. This session reports on student backgrounds, motivations, and program experiences. A new project, PathTech LISTEN, will conduct two followup interviews with 150 LIFE respondents. Attendees will engage in a boot camp-style "Applied Research 101" exercise to discuss how to apply research findings to impact student recruitment, retention, and completion. Attendees will also recommend questions to ask former students in LISTEN.

SESSION TRACKS

- Track 1. ATE@25: Leading Development of America's Technological Workforce Track 2. Developing STEM Leaders in Innovation Track 3. Engaging Students for Success in STEM
- Track 4. Advancing Innovation through STEM Research and Evaluation
- Track 5. Broadening the Impact of ATE by Engaging Partners

10:15 AM – 11:15 AM SYNERGY MEETINGS

Addressing the Technical Workforce Needs of the Agriculture Industry Congressional

Jenni Fridgen, Parkland College, Champaign, IL; Katya Nekrasova, American Association of Community Colleges, Washington, DC; Michelle Norgren, Missouri State University, Springfield, MO

Agriculture is essential to the growth of our country. Companies involved in production agriculture, equipment manufacturing, as well as research and technology development require a knowledgeable and skilled technical workforce. To support the many and varied needs of the different sectors within the rapidly evolving agriculture industry, it is vital to develop, integrate, and map future collaboration efforts between two- and four-year institutions, industry, and government agencies. This synergy meeting will bring together leaders of ATE agriculture-related (as well as not related) projects and centers to discuss priorities and strategies for future agriculture projects and collaborations to develop, maintain, and share curriculum that addresses the need for a knowledgeable and skilled workforce.

HSI Strategies/Challenges: Growing America's Technological Workforce Governors

Mel Cossette, MatEdu, Edmonds Community College, Lynnnwood, WA; **Emery DeWitt, Rick Roberts,** Florence Darlington Technical College, Florence, SC; **Cynthia Pickering, Caroline VanIngen-Dunn,** Science Foundation Arizona, Phoenix, AZ

Dive into what it means to be a Hispanic Serving Institution (HSI) in a discussion with your fellow HSI ATE grantees. Explore the opportunities and challenges of being a two-year college HSI and find solutions within ATE and beyond as you become part of a new HSI ATE Hub and community of technician educators that is being developed specifically for you by a Kickstarter and Mentor-Connect collaborative.

Developing Middle-Skilled Data/Big Data Practitioner Programs Ambassador

Kyle Jones, Ryan Murphy, Sinclair Community College, Dayton, OH; Jaimie L. Mahoney, Bunker Hill Community College, Boston, MA; Joyce Malyn-Smith, Education Development Center, Waltham, MA; James Polzin, Normandale Community College, Bloomington, OH; Suzanne Smith, Johnson County Community College, Overland Park, KS

Join Bunker Hill, Sinclair, Johnson County, and Normandale community colleges and the Education Development Center's Oceans of Data Institute seeking to network with colleagues working on data/ big data programs focused on the middle-skilled data practitioner. We will exchange experiences developing programs, aligning curriculum to employer expectations, and developing stackable credentials. We hope this learning exchange will develop into a community of practice within ATE focused on programs for the middle-skilled data worker.

ATE Evaluation Network Launch Capitol

Ben Reid, Impact Allies, Ennis, TX; **Emma Perk, Lori Wingate,** EvaluATE, Western Michigan University, Kalamazoo, MI

EvaluATE is expanding to include an ATE Evaluation Network to increase professional exchange and strengthen connections among ATE evaluation stakeholders. To help shape this effort, we are seeking input from ATE evaluators, principal investigators, project staff, grant specialists, and others involved in conducting or using evaluation. We will discuss the initial plans, what group members need, potential benefits, and what the community is willing to commit to create and sustain an engaged evaluation community. Join us for a lively discussion to help form the ATE Evaluation Network.

10:15 AM – 11:15 AM SYNERGY MEETINGS

Creating Effective Professional Development Activities Blue Room Pre

Greg Kepner, Frank Reed, Jr., Indian Hills Community College, Ottumwa, IA; **Chrys A. Panayiotou,** Indian River State College, Fort Pierce, FL; **Anca Sala,** Baker College, Flint, MI

Learn successful strategies for creating professional development activities. Synergy meeting participants will consider the following questions in this session: Who is your audience? What is the purpose of the activity? How do you inform and recruit participants? What do participants need to know? How do you engage participants? How do you know if the activity was effective? What are the finishing touches to professional development?

Building a National Educational Community of Practice

Blue Room*

*Please enter the Blue Room through Robert's Restaurant.

Kathleen Alcott, NEATEC, SUNY Polytechnic Institute, Utica, NY; Bob Ehrmann, Center for Nanotechnology Education and Utilization, Pennsylvania State University, University Park, PA; Mike Opp, Nano-Link, Dakota County Technical College, Rosemount, MN; Matt Pleil, SCME, University of New Mexico, Albuquerque, NM

This session will provide a discussion platform on how four NSF ATE Centers have come together to cultivate and build an educational community of practice in micro-nano technology education spanning the U.S. and its territories. Attendees should expect to learn the motivation and specific processes these centers have used to bring their individual educational communities together to create a larger community of practice. This session will engage participants in a discussion on the benefits of an educational community as well as a best practices on initiating, maintaining, and motivating a community of practice with members nationwide.

11:30 AM – 12:30 PM SYNERGY MEETINGS

ATE Biotechnology at 25: Impacts, Challenges, and the Future

Congressional

Margaret Bryans, Montgomery County Community College, Blue Bell, PA; Linnea Fletcher, Austin Community College, Austin, TX; Elaine Johnson, City College of San Francisco, San Francisco, CA; Linda Rehfuss, Bucks County Community College, Newtown, PA; Mary Slowinski, Bellevue College, Bellevue, WA

Historically, the biotechnology sector of ATE has included the Bio-Link National Center, two regional centers (NBC2 and AC2), a host of projects, and the active participation of a strong and connected community. Please join members of this community for a fun discussion about the positive impacts this work has had on biotech education, areas to target going forward, supports you'd like to see, and visions for our collective future. Share your successes, your challenges, and your dreams for the future of the ATE Biotechnology Community.

Documenting the Impact of 16 Years of ATE Cybersecurity Centers and Projects Ambassador

Michael Gonzalez, John Sands, Moraine Valley Community College, Palos Hills, IL; Fran Melvin, Prince George's Community College, Largo, MD; Corrinne Sande, Whatcom Community College, Bellingham, WA

In 2002, representatives from the federal government, business community, and academia met to address the growing concern of protecting the nation's information infrastructure. The national conference resulted in a publication entitled "The Role of Community Colleges in Cybersecurity Education." This session will bring together stakeholders from the community college cybersecurity projects and centers to review this publication and discuss plans for developing an impact report 16 years later. Isn't it about time to document our hard work and impact on the cybersecurity workforce?

SESSION TRACKS

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Track 2. Developing STEM Leaders in Innovation Track 3. Engaging Students for Success in STEM

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11:30 AM – 12:30 PM SYNERGY MEETINGS

Building a Mechatronics-Friendly Community from K-to-Gray

Blue Room Pre

Marilyn Barger, FLATE, Hillsborough Community College, Tampa, FL

This synergy meeting will focus on student and industry engagement in mechatronics, advanced manufacturing, automation, and related programs. It is hosted and facilitated by ATE projects at Central CC (NE), Piedmont Virginia CC (VA), College of Lake County (IL) and Hagerstown CC (MD), and advanced manufacturing centers RCNGM and FLATE. Come join us for a lively discussion of building a mechatronics-friendly community.

STEM Thought Leaders' Summit Reflection Session

STEM Summit Participants Only

Blue Room*

*Please enter the Blue Room through Robert's Private Dining Room.

Brenda Albright, BNA Consulting, Franklin, TN; **Kevin Christian,** American Association of Community Colleges, Washington, DC

This session is open to participants of the Equity and Inclusion STEM Thought Leaders' Summit to report out and reflect on their conference experience and discuss community building and next steps.

Establishing Spread and Impact of Innovations Developed by ATE Centers Capitol

Gerhard Salinger, GLS Educational Consulting, LLC, Albuquerque, NM; **Rebecca Zarch,** SageFox Consulting Group, Amherst, MA

This synergy meeting is for PIs, evaluators, and others to discuss the long-term impact of ATE large projects and centers. We hope to document the spread and impact of innovations and programs developed by ATE large projects and centers after the grant funding ended. The ideas put forth during this session may inform a set of upcoming case studies. With the ATE program turning 25, now is an ideal time for additional reflection.

Latino Leadership Initiative: Si, Se Puede!; Yes, We Can! Govenors

Mel Cossette, MatEdu, Edmonds Community College, Lynnwood, WA; **Rosario Reyes**, Latino Educational Training Institute, WA

Growth of the Latino population can impact STEM program enrollment. Learn how MatEdU and LETI expanded their efforts in producing the Latino Leadership Initiative (LLI) in collaboration with three community colleges and local industry. In the fall, each college recruits Latino students to participate. Over the course of five months, this cohort learns leadership skills, is exposed to STEM careers, and has the opportunity to meet with educators, potential employers, and government representatives to develop group community projects. LLI students also mentor/ work with middle and/or high school students while collaborating with four-year students. The 2017–2018 cohort has performed over 1,700 hours of community service. This session will share strategies for engaging K-12, two-year, and four-year institutions; identifying potential external fundraising opportunities; and engaging community service projects.

■ 12:30 – 1:00 PM

Box Lunches West Conference Foyer

Box lunches will be available as supplies last.

■ 12:45 – 3:00 PM

ATE Center Directors' Meeting and Lunch Palladian

BREAKFAST ROUNDTABLES THURSDAY • OCTOBER 25

7:45 – 8:45 am

Ambassador Ballroom

Table 1. What Do You Want to Know aboutNSF and ATE?

Many PIs are new to the National Science Foundation (NSF) and have questions about how NSF operates, how award decisions are made, and how reviewers are chosen. Program directors from the ATE program will be on hand to respond to general questions posed by roundtable attendees.

Table 2. Integrating Undergraduate ResearchExperiences into Community CollegePrograms and Curriculum

Elizabeth Teles, Tom Higgins, National Science Foundation, Alexandria, VA

Several reports have made recommendations about the importance of integrating undergraduate research (UGR) experiences into community college programs and curriculum. There are multiple examples, such as the Community College Undergraduate Research Initiative (CCURI). CCURI has developed, implemented, and assessed sustainable practices for integrating UGR into STEM programs. The ATE program would like to learn about other undergraduate research models that have been created for technician programs and to discuss opportunities and challenges to implementation of UGR in ATE projects. Ideas of involving students in authentic research opportunities in business and industry settings, informal learning "maker spaces," and other models will also be discussed.

Table 3. IT Skill Standards

Ann Beheler, Mark Dempsey, National Convergence Technology Center, Collin College, McKinney, TX

Learn how contemporary IT Skill Standards are being developed and discuss how you can be involved in this initiative and apply the results to your work.

Table 4. Establishing Data Science Programsat Two-Year Colleges

Steve Pierson, American Statistical Association, Alexandria, VA; **Brad Thompson,** Delaware Technical Community College, Wilmington, DE

In May 2018, the ASA Two-Year College Data Science Summit was held with the goal of exploring the feasibility, challenges, and outcomes of developing data science programs at two-year colleges. This roundtable session will discuss the outcomes of this summit, allow attendees to share relevant insights or experiences, and discuss how this topic can be further explored.

Table 5. Understanding the GeospatialTechnology Competency Model 2018

Vince DiNoto, Ann Johnson, Kentucky Community & Technical College System, Louisville, KY

This geospatial roundtable discussion will center on the release of the updated U.S. Department of Labor (DoL), Geospatial Technology Competency Model (GTCM) 2018. The discussion will include how the GTCM, self-assessment results, and other tools impact the development of curriculum to meet the needs of both the incumbent workforce and the traditional two-year college student.

Table 6. Resources Specific to HSIs: HelpBuild Your HSI ATE Hub

Anna Tanguma-Gallegos, Science Foundation Arizona, Scottsdale, AZ

Give a little, get a lot! The HSI ATE Hub, a KickStarter and Mentor-Connect collaborative, will share HSIspecific resources you can take home. We also invite you to bring a strategy, best practice, or resource to share with other ATE HSIs. The HSI ATE Hub is dedicated to your success and promotes leadership at HSIs to develop America's technological workforce.

Table 7. Skills for Biomedical EmergingTechnology Applications (BETA Skills)

Russ H. Read, Forsyth Technical Community College, Winston-Salem, NC

The roundtable will discuss "convergent technology platforms" that support product research, development, and/or manufacturing at the interface between biomedical devices and tissue engineering. Roundtable leaders are working to (1) define BETA core skills for national use by educators, researchers, and employers; and (2) connect BETA competencies to the emergence of technician specialists with a new, higher level set of specialized core skills.

Table 8. Stackable Credentials for theTechnology Workforce

Osama Awadelkarim, Bob Ehrmann, Center for Nanotechnology Education and Utilization, Pennsylvania State University, University Park, PA

Accurate evaluation of the knowledge and qualifications of technical employees is a critical employer need. Effective stackable certificates can help to address this need. Using the MNT work-in-progress stackable certificates as a springboard, the intent of this roundtable is to discuss ideas and experiences on how to best attain widespread industrial acceptance and institutionalization of technology-based stackable certificates.

Table 9. Advanced Techniques in Designingof Prosthetic Devices

Gaffar Gailani, CUNY New York City College of Technology, Brooklyn, NY

The challenge in prosthetic devices is the functionality vs. cost. Cost remains a challenge for people with disabilities inside and outside the United States, especially in developing communities. Our goal is to motivate students to become innovative in identifying new ideas and methods to reduce the cost while maintaining the functionality of the prosthetic device. Come discuss these challenges and the different technologies being used in fabrication to come up with solutions.

Table 10. Strategies for Helping theSkeptical STEM Student Succeed

Nancy Louwagie, Ruth Robinson, Normandale Community College, Bloomington, MN

First-time and returning students at two-year colleges want to learn, but may lack confidence in their ability to succeed in STEM programs. Come share strategies to engage these learners. We will share lessons learned from delivering a foundational online science "catch up" course designed with active learning principles, which is appropriate for curriculum developers and instructors interested in retaining reluctant learners.

Table 11. New Resources from EvaluATE:An Input Session

Kelly Robertson, Western Michigan University, Kalamazoo, MI

EvaluATE's resource library will be expanding to include additional checklists, templates, videos, and quick guides. Tell EvaluATE what resources you want to see or what common challenges new resources could help address. Connect with others working on ATE evaluation. Walk away with EvaluATE's new ATE Evaluation Task Framework and learn how you can help shape evaluation in the ATE program.

Table 12. Triumphs and Tribulations in thePursuit of a Multidisciplinary CollaborativeHub for Student Projects ServingCommunity Needs

Beth Abels, Elizabeth P. Cheung, Los Angeles Pierce College, Woodland Hills, CA

The CAPTIVATE project has established a collaborative hub for faculty, students, and the community to connect and engage in interdisciplinary authentic projects as part of architecture and engineering graphics and design technology curriculum. We will share our model and highlight the benefits to students, faculty, and the community. In addition, this roundtable will provide an opportunity to share best practices and challenges in engaging faculty across disciplines, establishing projects and their deliverables with community organizations, and other strategies for successful implementation of community-based multidisciplinary projects.

BREAKFAST ROUNDTABLES THURSDAY • OCTOBER 25

Table 13. Utilizing WFD Resources to ProvideEmployers with Credentialed Technicians

Jennifer Palestrant, The SMART Center, Tidewater Community College, Virginia Beach, VA

The maritime industry has a range of educational needs from apprenticeship to boot-camp type programs to full academic degrees. The SMART Center utilizes all these different educational resources to create career pathways with multiple on-ramps into the maritime industry. This roundtable will focus on how participants can use workforce development resources to integrate industry credentialing into academic pathways for employers.

Table 14. Professional Society Partnerships:Assuring Student Success

Monica A. Pfarr, American Welding Society, Lorain County Community College, Elyria, OH; W. Richard Polanin, Weld-Ed, Metamora, IL

Weld-Ed has established a consortium of education and industry partners. The key to assuring industry acceptance of students entering the workforce is the validation of the content by industry. This roundtable will describe the development of relationships with professional societies such as the AWS and ASNT to assist validation, and provide information about leveraging these relationships.

Table 15. Dissemination Conference:Planning a Regional Event forMaximum Impact

Edward Bass, Hagerstown Community College, Hagerstown, MD

Planning and executing a great dissemination conference can be a daunting task for the teaching Pl, and indeed, for any project manager. There is much to consider such as manifold target audiences, enticing presenters, and detailed logistics. Come learn from those who have been through it. Come also if you are writing a proposal to ensure you are planning and budgeting appropriately for your conference.

Table 16. I-Corps and AdditiveManufacturing: A Model for Pedagogy andEntrepreneurship

Steve Canfield, Ismail Fidan, Tennessee Tech University, Cookeville, TN; **Eric Wooldridge,** Kentucky Community & Technical College System, Louisville, KY

The National Science Foundation has invested heavily in technologies that advance engineering education, novel additive manufacturing (AM) techniques, and customer discovery through its I-Corps program. This roundtable will discuss strategies to merge findings and resources that have evolved from the NSF I-Corps program as well as AM tools to better engage and train STEM educators and students in community colleges.

Table 17. Bringing Industry to Campus:Deepening Learning, Maximizing Investment

Abbe Kesterson, Bridgette Kirkpatrick, Austin Community College, Austin, TX; **Mary Slowinski,** Bellevue College, Bellevue, WA

Does your program provide space, services, or skilled student labor to industry? Do you bring industry projects to campus to offer students experiential learning opportunities or to utilize your labs/workspaces to their fullest? Is this something you are interested in developing? If so, come share, learn, and connect with others and build community around the use of campus-based contract organizations and incubators that maximize infrastructure investment and deepen student learning.

Tables 18 – 22.* ATE Students and NationalScience Board Listening Session

*Note: These tables are located on the Bird Cage Walk in the hallway behind the Ambassador Ballroom. Please enter the Ambassador Ballroom to get breakfast and look for signs to the Bird Cage Walk to join these tables.

The ATE Conference includes an opportunity for students to talk with members of the National Science Board (NSB) as part of a breakfast roundtable session. The NSB jointly heads the National Science Foundation and serves as an apolitical advisor to the President and Congress on STEM policy issues. The NSB is currently conducting listening sessions with community college students and recent alumni to identify the opportunities and challenges facing students entering the skilled technical workforce so they can recommend strategies to support them. Join this informal discussion to share your educational and career experiences with the NSB to assist them in understanding and supporting the community college role in preparing students for the skilled technical workforce.
BREAKFAST ROUNDTABLES

FRIDAY • OCTOBER 26

7:45 – 8:45 am

Ambassador Ballroom

Table 1. What Do You Want to Know aboutNSF and ATE?

Many PIs are new to the National Science Foundation (NSF) and have questions about how NSF operates, how award decisions are made, and how reviewers are chosen. Program directors from the ATE program will be on hand to respond to general questions posed by roundtable attendees.

Table 2. AI for Industry: Trendsand Perspectives

Rebecca Hartley, Kapil Chalil Madathil, Clemson University, Clemson, SC

The CA2VES Center at Clemson University is focusing efforts to use current advancements in artificial intelligence to create a national educational resource, which will address a key National Academies grand challenge of preparing the workforce for the STEMfocused jobs of the next decade. In this roundtable, we will discuss outcomes of the AI for Industry workshop CA2VES held in August.

Table 3. Understanding Unmanned AerialSystems (UAS) and Sensors

Wing Cheung, Palomar College, San Marcos, CA; **Vince DiNoto,** Kentucky Community & Technical College System, Louisville, KY

This roundtable will feature an open discussion of the numerous projects funded by ATE in this evolving field. The session will include discussions about aircraft maintenance, flying, rules and regulations, selection of sensors, the physics of optics, mapping the data, and analysis. Participants are requested to bring information about their curriculum as well as certificates and degree programs to share.

Table 4. Crosswalk Courses Add Valueto Industry

Ken Quamme, Williston State College, ND

Join a roundtable discussion focused on crossdepartmental collaboration to train students in skills relevant to industry. Williston State College's (WSC's) petroleum program requirements now include computer networking. IT majors are encouraged to take automation courses as electives. This roundtable will discuss how this crosswalk approach adds value to companies that hire WSC students.

Table 5. Providing Hands-on TechnologyTraining for Online Students

Dane Schupbach, Trident Technical College, Charleston, SC

This roundtable will discuss challenges faced while trying to provide online technology students a comparable hands-on experience to what they receive in the classroom or lab environment. The CLOUDTech team will share experiences and lessons learned while developing online Cloud Computing labs. Attendees can sign up to receive project deliverables needed to implement the Cloud Computing labs at their institution.

Table 6. Biosciences IndustrialFellowship Program

Russ H. Read, Forsyth Technical Community College, Winston-Salem, NC

In this three week program, Fellows participate in boot camps at several North Carolina colleges with handson lab experiences and shadow workers in various departments at a dozen different industrial/university facilities. The aim of visiting many of our key bioscience assets is to demystify the bioscience industry. Fellows develop and deliver presentations to further delineate industry principles in the classroom.

Table 7. Can We Evolve a Better Biology Lab?

Bridgette L. Kirkpatrick, Austin Community College, Austin, TX; **Carole M. Twichell**, Collin College, Plano, TX

Some animals haven't changed in millions of years because they fit their habitat so perfectly that evolution is no longer necessary. This isn't true about freshmen biology labs, as material hasn't kept pace with modern technology. Testimony in "Vision and Change" reports that "canned" labs fall short. Learn about format changes that better reflect this evolving field through inquiry-based learning.

BREAKFAST ROUNDTABLES

Table 8. Promoting STEM Careers throughHands-on Workshops and IndustryEngagement

Margaret Bryans, Montgomery County Community College, Blue Bell, PA

To strengthen the pipeline from high school (HS) to college program to industry technician, NBC2 engages HS students and teachers through experimentation in hands-on summer workshops that also provide interactions with industry professionals and introduce the rewards of STEM careers. Program details and participant learning outcomes including gains in interest, knowledge, and skills will be discussed.

Table 9. Measuring Industry PartnershipImpact

Lana Rucks, The Rucks Group, LLC, Dayton, OH

While building industry partnerships is a key component of many projects and centers, effectively measuring the impact of these relationships can be challenging. Indeed, in response to the dearth of appropriate measures, the Partnership Rubric was developed. Through this roundtable discussion, the Partnership Rubric will be introduced to a wider audience and feedback on its utility will be gathered.

Table 10. Creating Dual Enrollment PathwaysUtilizing Community and Partner Resources

Thomas Stout, Tidewater Community College, Norfolk, VA

Engaging students while still in high school in your industry's career pathway will increase the number of skilled technicians entering those fields. During this roundtable discussion, participants will converse about unique ways to engage industry and community resources to create dual-enrollment pathways at their community college.

Table 11. Managing a Diverse Team –10 Years of STEM Guitar Growth

Thomas Singer, Sinclair Community College, Dayton, OH

For over 10 years the STEM guitar project has created a diverse (geographically and personnel wise) project team. The original team of 6 has grown to over 22 team members. Our project has seen and overcome many challenges. In this roundtable discussion, we will share our experiences, success stories, and some continued challenges we face.

Table 12. The Impact of IndustryEngagement on a Curriculum Design Process

Jon Lundquist, Columbus State Community College, Columbus, OH

This roundtable session will focus on an industry-led curriculum development process in Mobile Application Design and Development. In addition, we will discuss opportunities to keep industry partners engaged with the programs and students, and seek their assistance in staying abreast of industry trends and emergent technologies

Table 13. Professional Certificationsfor Technicians

Larry Chang, Peter Crabtree, Laney College, Oakland, CA

Certifications can help technicians to demonstrate mastery of industry-defined competencies necessary for employment or career advancement. Such credentials can also align technical curriculum development with certification goals. In this session, the BEST Center will share its experiences as it continues developing its High Performance Building Operations Certification. Working with industry partners and the potential impact on college curriculum will also be discussed.

Table 14. Sharing 15 Years of Operatingan ATE Center

Sharon Katterman, Ginny Swyndroski, Moraine Valley Community College, Palos Hills, IL; **Corinne Sande**, Whatcom Community College, Bellingham, WA

Representatives from CyberWatch West and the Center for Systems Security and Information Assurance will discuss their experience of operating an ATE Center including best practices in administration, budgeting, evaluation, and impacting students in the local business community. This roundtable will share best practices, sample forms, marketing materials and videos, and evaluation instruments.

Table 15. College Immersion Experience

Greg Kepner, Frank Reed, Jr., Indian Hills Community College, Ottumwa, IA

Learn successful strategies for engaging prospective students through an immersive experience and handson activities in advanced technologies such as lasers. More than a typical college visit, visitors learn about student club activities, scholarships, campus and student life, financial aid, Job Corps connections, and laboratory experiences with advanced students. The Midwest Photonics Education Center will share best practices and lessons learned from innovative activities focused on engaging visiting students in an immersive STEM program experience.

Table 16. AGET: Engaging Industry,Legislators, and Administrators in ProjectCompletion

Jeff Turk, University of North Georgia, Oakwood, GA

This roundtable will share the promising strategies to engage industry, legislators, university administration, and faculty in project development and implementation. Learn how a new Land Surveying Certificate and AS pathway in Geospatial Engineering Technology were finalized and initiated over a period of one academic year.

Table 17. Competency-BasedMicro-Credentialling with Badges

Brian Bell, Lara Sharp, St. Petersburg College, St. Petersburg, FL

Participants will learn how St. Petersburg College's Biomedical Engineering Technology program is developing a competency-based micro-credentialing system using badges. Roundtable moderators will explain how competencies were identified and then attached to a badging system in a LMS. Examples will be shared and participants will see how the badges are portable even after graduation. The purpose of the badging system is to create micro-credentials identified by industry that help students gain successes during the program, but can also verify competencies for employers.

Table 18. Using Partnerships to Build aPhotonics AAS Degree

Stephanie Gray, Gallatin College, Montana State University, Bozeman, MT

Gallatin College is a two-year college of Montana State University (MSU). This roundtable will highlight the partnerships and activities involved to create a Photonics Technician AAS degree to address the needs of the highest per-capita concentration of optics and photonics companies in the nation. Working with our four-year partner, as well as community and industry partners has proven to be a highly successful model. Join this roundtable to explore strategies for how to work with multiple small businesses in a small community to build a high-tech melting pot; and how to leverage that growth into two-year program development.

Table 19. Using Concept Inventories:The First Step in STEM Career Pathways

Nancy Louwagie, Normandale Community College, Bloomington, MN; Joshua Morrill, Morrill Solutions Research, Madison, WI - CANCELLED -

Concept inventories can be used to systematically identify learning gains from STEM courses. They serve as a guarantee for students and for future employers. Discussion topics in this roundtable include: the process for developing and deploying a concept inventory (applicable across STEM disciplines); analyzing and using the results; and sources for STEM content inventories.

Table 20. Changing Campus Culture

Gordon F. Snyder, OP-TEC, University of Hartford, West Hartford, CT

Campus culture has changed significantly. Students have many options and are not afraid to walk away if something does not feel right. STEM program enrollments are often down and lack diversity while employers struggle to hire qualified people. Join a conversation about the impact culture is having and discuss some strategies to deal with post-millennial STEM student recruitment and retention.

PLENARY SPEAKERS

October 24 – Opening Plenary Session



Dr. Christine Darden is a Former

Researcher and Executive at NASA. Dr. Darden retired as a member of the U.S. Senior Executive Service in March 2007 from NASA Langley Research Center, after nearly 40 years of service. At NASA, she worked five years as a "Human Computer" (Data Analyst) in the Re-Entry Physics Branch, twentythree years as a researcher in

supersonic flow and sonic-boom minimization, and eight years as an executive.

During her NASA career, Darden authored over 57 technical papers and articles, primarily in the areas of sonic boom prediction, sonic boom minimization, and supersonic wing design. She is recognized as an international expert in these areas—having given technical presentations at many U.S. conferences, as well as events in Germany, England, France, Greece, and Japan.

Darden has been recognized with dozens of awards and honors—including two NASA Medals, one for her work and leadership of the Sonic Boom Program, and the other for her active involvement in working with and encouraging students to pursue careers in math and science. In addition, she received the Black Engineer of the Year Outstanding Achievement in Government Award and the Women in Science & Engineering Lifetime Achievement Award.

Darden was recently included in the book, "Hidden Figures," by author Margot Lee Shetterly as one who stood on the shoulders of Katherine Johnson, Dorothy Vaughn, and Mary Jackson, NASA "Human Computers" who, as members of the segregated West Computers, contributed to the NASA Space Program in the early 1960s and who in 2016 were featured in the 20th Century Fox movie of the same name.

Darden has a BS degree in Mathematics Education from Hampton Institute (now University) in Hampton, VA, a MS degree in Applied Mathematics from Virginia State College (now University) in Petersburg, VA, and a D.Sc. degree in Mechanical Engineering from George Washington University in Washington, DC.

She and her husband of 55 years, Walter, are the parents of three adult daughters, five grandchildren, and three great-grandchildren.

October 26 – Friday Plenary Session Panel



Dr. David T. Harrison became the fifth president of Columbus State Community College in July 2010. With more than 25,000 students, Columbus State is one of the largest and most comprehensive colleges in Ohio. Through its campuses in Columbus and Delaware County and its nine regional learning centers, the college serves students from all 88 counties in Ohio,

provides more online learning opportunities than any college in the state, and contributes nearly a billion dollars in regional economic impact.

Under Dr. Harrison's leadership, Columbus State has led the region in expanding access to affordable bachelor's degrees through innovative university 2+2 partnerships. Students who complete freshman and sophomore years at Columbus State through the Preferred Pathway program realize higher education goals without the burden of daunting student debt. He led the formation of The Central Ohio Compact, a regional strategy among K-12 and higher education leaders to help more students succeed in college and in the workplace. These partnerships provide Columbus State students the opportunity to achieve their higher education goals while providing solutions for families by reducing financial barriers to degree attainment.

In 2012 Columbus State was named an Achieving the Dream college, a national initiative to help more students earn college credentials with an emphasis on first generation students, students of color, and low-income students; and in 2015 the college received Achieving the Dream's esteemed designation as a Leader College. In addition, Columbus State was one of only 30 colleges nationwide selected to participate in the Pathways Project led by the American Association of Community Colleges (AACC) to design and implement guided academic and career pathways for all students.

Dr. Harrison came to Columbus State with extensive experience building successful community partnerships. As Vice Provost for Regional Campuses at the University of Central Florida, he worked with community colleges to create the Central Florida Higher Education Consortium and the nationally recognized DirectConnect to UCF program, which guarantees the opportunity for a bachelor's degree for graduates of partner community colleges. Under his leadership, the program significantly increased the number of transfer students earning bachelor's degrees from UCF. He also developed partnerships with employers and community leaders to address workforce needs in information technology, architecture, healthcare, and other fields. Prior to joining UCF, Dr. Harrison served in leadership roles at Seminole State College in Florida and at Sinclair Community College in Ohio, and was a consulting manager with Accenture in Pittsburgh. He holds a Ph.D. from The Ohio State University, an MBA from the Katz Graduate School of Business at the University of Pittsburgh, and a Bachelor's degree in Chemical Engineering from the University of Dayton.



Dr. Annette Parker is the President of South Central College, MN. Dr. Parker has been involved in manufacturing industry and workforce education for more than 35 years. She started her career at General Motors in Lansing, Michigan, and moved into education as a faculty member and administrator at Lansing Community College. During this time, she worked on a number of

innovative partnerships with the automotive industry.

Based on her successes in Michigan, she was recruited to the Kentucky Community & Technical College System as the System Director of Workforce Education. In this role, she also served as Executive Director and Principle Investigator of the Automotive Manufacturing Technical Education Collaborative (AMTEC), a National Science Foundation Advanced Automotive Manufacturing Center of Excellence. A model for industry-education collaboration, AMTEC included partners from six of the world's largest automobile companies, 25 automobile manufacturing plants and 38 community and technical colleges from 13 states. In 2010, the National Governors Association selected AMTEC as a model and national best practice in their case study, A Sharper Focus on Technical Workers: How to Education a Global Economy. AMTEC's work was also highlighted in McKinsey and Company's 2013 article "Breaking the U.S. growth impasse," as well as publications from the U.S. Department of Education, Department of Labor, and others.

In 2012 Dr. Parker was invited to a U.S. State Department meeting with the Prime Minister of India and U.S. Secretary of State Hillary Clinton to assist in the establishment of a community college system in India based on the American model. Dr. Parker also participated in discussions with the U.S. Department of Education, which led to the creation of the Global Automotive Technical Education Network (GATEN), a partnership with the European Ministry that provides the European states with standards and guidance for Vocational Education and Training in the Automotive Sector (VETAS). She also worked closely with the American Association of Community Colleges (AACC) to travel to China to share best practices and support India and China's vision of partnering with American community colleges. In April 2013, Dr. Parker presented to the U.S. House of Representatives Energy and Commerce committee demonstrating support on how to address the skills gap in the United States.

In July 2013, Dr. Parker became the President of South Central College (SCC), a comprehensive community and technical college with campuses in North Mankato and Faribault, Minnesota. Under her leadership SCC has expanded its workforce development activities, which includes receiving a \$15 million Department of Labor Trade Adjustment Assistance Community College and Career Training (TAACCCT) grant for a 12-college consortium led by SCC.

Dr. Parker served on President Obama's Advanced Manufacturing Partnership (AMP) Steering Committee 2.0 and co-chaired AMP's "Demand-Driven Workforce Development" work team. She has also served on the Boards of Directors for the AACC, National Coalition of Advanced Technology Centers, Center for Quality People and Organizations, and Corporate Voices for Working Families.

She currently serves on the Center for Community College Student Engagement National Advisory Board, Council for Adult and Experiential Learning Advisory Council (Vice Chair), National Academy of Sciences Roundtable on Systemic Change in Undergraduate STEM Education, The Presidents' Roundtable (Vice Convener), Minnesota Campus Compact Board of Directors (Vice Chair), Greater Mankato Growth – Chamber of Commerce and Regional Economic Development Board of Directors, Faribault Chamber of Commerce Board of Directors, Minnesota Agricultural Leaders Board of Advisors for the Minnesota Agricultural Interpretive Center—FarmAmerica and Faribault Main Street Board of Directors.

Dr. Parker holds her Doctorate in Education Leadership from Western Kentucky University, Master's and Bachelor's degrees in Education from Ferris State University, and an Associate of Applied Science degree in Industrial Drafting from Lansing Community College.



Dr. Edwin Massey was appointed as Indian River State College's third president in 1988. He earned his Ph.D. in Zoology, with an emphasis in Marine Biochemistry from the University of Southern Mississippi and completed advanced studies in Evolutionary Biochemistry at Duke University.

Dr. Massey is a fixture of leadership

on the local, state, and national level. He currently serves as the Chairman of the Florida Articulation Coordinating Council and as a member of the National Association for Community College Entrepreneurship, in addition to being part of numerous boards and educational endeavors.

In addition to helming IRSC, Dr. Massey is a devoted family man to his wife, Jo, three children, and six grandchildren.

ATEGENTRAL

ATE Central can help you...

- Promote and disseminate your valuable resources and events
- Extend your outreach efforts and social media presence
- Track the impact of your center or project activities
- Connect with collaborators and mentoring opportunities
- Archive materials and deliverables for longevity and extended impact



Tools and services for you from ATE Central...

- **ATE Microsite Service**: Put information about your project or center online ASAP, with a minimum investment of your time and effort
- **ATE Archiving Service**: Archive your curriculum, professional development materials, and other deliverables to make sure that the valuable resources you've created continue to be available and in use
- **ATE PI Conference App**: Plan your schedule, manage new contacts, and get the most out of the annual PI meeting with this mobile application

For more information please visit us during the showcase sessions or at http://atecentral.net



ATE Central is funded by the National Science Foundation under award 1261744



PATHWAYS TO FUNDING SUCCESS IN ATE

Mentor-Connect guides POTENTIAL GRANTEES through the proposal and funding process

Mentor-Connect.org

Get a Mentor

Be a Mentor

Become a Leader



Mentoring and technical assistance is available for STEM faculty seeking ATE grants.

Mentor-Connect assists those who are:

* New-to-ATE

* Moving Up to a larger project

*Re-doing/re-submitting a declined proposal



<u>Mentors</u> guide potential grantees to ATE funding success.

The <u>Mentor Fellows</u> program prepares experienced ATE grantees to become Mentors.

*Participate with a Mentor-Connect cohort

*Complete Mentor-Connect activities

*Shadow and learn from an experienced Mentor



Grant-writing lessons, mentoring, and technical assistance are available for those seeking to become grantees and ATE leaders.

*Mentor-Connect workshops

*Mentor-Connect online technical assistancce and resources

*Mentor-Connect leadership lessons and opportunities

Benefit from and contribute to the ATE program through Mentor-Connect



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OMNI SHOREHAM HOTEL MAP





SHOWCASE I: ATE CENTERS AND PROJECTS SHOWCASE MAP WEDNESDAY • OCTOBER 24, 2018



SHOWCASE I

WEDNESDAY • OCTOBER 24, 2018

ATE Centers and Projects

7:00 – 9:15 pm • Exhibit Hall

Booth #	Alpha by Institution	Booth #	Alpha by Institution
619	Ashland University Advanced Technological Education for Two-Year	607	College of Lake County CollaborATE
002	ATE Central	505	Collin County Community College Information Technology Skill Standards 2020 and
307	Austin Community College AC2: Austin Community College Bio-Link Regional ATE Center	509	Beyond Columbia Gorge Community College Developing and Deploying Flipped Classroom
606	Baker College of Flint Advancing Photonics and Laser Technician		Resources for Electrical Engineering, Industrial Maintenance, and Renewable Energy Technicians
611	Education in Michigan Bemidji State University MSAMCOE: Minnesota State Advanced Manufacturing Center of Excellence ATE Regional Center	412	Columbus State Community College Building an Industry-Aligned Pathway to Careers in Cloud Computing
		406	Columbus State Community College Collaboration of Midwest Professionals for Logistics
617	BioQUEST Curriculum Consortium, Inc. Collaborative Research: Opening the Pathway to Technician Careers: A Conference for Biology Teachers of Deaf Students	105	Columbus State Community College Data Analytics Technician Advancement (DATA) Program
011	Black River Technical College Precision Ag Technicians: Improving Arkansas Farming	106	Columbus State Community College Design Thinking: Additive Manufacturing Summer Institute
207A	Bridgerland Technology College Scaling Up Utah's Automated Manufacturing	202	Columbus State Community College Logistics Engineering Technology Work Study
614	Cape Fear Community College CT-EnTICE: Chemical Technology – Enrolling	405	Columbus State Community College Manufacturing Experiential Advancement Readiness Network Project
409	Central Community College Mechatronics with Instrumentation and Controls	104	Columbus State Community College Pathways for Alternative Energy Automotive Technicians
503	Central Oregon Community College Northwest Engineering and Vehicle Technology Exchange (NEVTEX)	201	Columbus State Community College Strengthening Mobile Application Resources and Technician Training: The SMARTT Project
102	Central Piedmont Community College Anti-Counterfeit Printing and Packaging Technology	007	Cuesta College GIS Technology: Mapping, Data Management, and Work, Based Learning Agrees Industry, Sectors
408	Chippewa Valley Technical College Smart Manufacturing and Resources for Transforming the Future	205	Del Mar College Unmanned Aircraft Systems Technology Education
213	Clark State Community College Cyber Pro: Developing Rigorous and Enhanced Academic Modules (DREAMs)	701	Consortium (UASTEC) Digital World Biology A Bridge to Bio-Link's Future
306	Clark State Community College Precision Technologies: Integrating Agriculture and GeoSciences	621	Eastern Iowa Community College District ATEEC: Advanced Technology Environmental Education Center
620	Clemson University A Sustainable ATE Coordination Network for Enhancing Personalized Learning Using Virtual and	203	Edmonds Community College MatEdu: National Resource Center for Materials Technology Education
	Augmented Reality-Based Technology Innovations in Technician Education	004	EvaluATE – Evaluation Resource Center for Advanced Technological Education
511	Coastal Alabama Community College The Associate of Applied Science in Dynamic Reality Technologies Program: Training Technicians to Use Extended Reality to Develop Workforce Training Simulations	212	Florence-Darlington Technical College and Science Foundation Arizona Collaborative Research: HSI ATE Hub – Diversifying the ATE Program with Hispanic Serving Institutions Using Culturally Inclusive Mentoring and ATE Resources

SHOWCASE I

WEDNESDAY • OCTOBER 24, 2018

Booth #	Alpha by Institution	Booth #	Alpha by Institution
618	Forsyth Technical Community College Biosciences Industry Fellowship Project with NIIMBL	705	McLennan Community College Enhancing Network and Cybersecurity Technician
313	Grayson County Junior College District Boosting New Careers in Advanced Manufacturing Industries	005	Mentor-Connect: Leadership Development and Outreach for ATE
708	Grossmont Cuyamaca Community College District California WaterWorks: Building the People Pipeline	410	Metropolitan Community College Advanced Technological Education in the Intelligent
612	Hagerstown Community College Advanced Manufacturing Technicians: Education for an Emerging Workforce	210	Missouri State University VESTA: Viticulture and Enology Science and
504	Hartnell College Meeting Current and Future Challenges: Expanding Ag Sciences Technician Training	303	Iechnology Alliance Monroe Community College GeoTech Consortium of Western New York: Get the
003	HI-TEC – High Impact Technology Exchange Conference		GIST (Geospatial Information Science Technology) Certificate
311	Hofstra University Needed Math: An ATE Conference Proposal	703	Montgomery County Community College NBC2: Northeast Biomanufacturing Center and Collaborative
305	Idaho State University Providing Opportunities for Women in Energy Related (POWER) Careers	208	Moraine Valley Community College CSSIA: National Support Center for Systems Security and Information Assurance
009	Indian River State College	001	National Science Foundation
407	Training	704	Navajo Technical University Dimensional Metrology Certification Proiect
407	Itasca Community College Development of a 21st Century Industrial Process Operations Program	710	Normandale Community College Distance Education and Learning in Vacuum
700	Kansas City Kansas Community College Kansas City Kansas Biomanufacturing Training Laboratory (KCKBTL): Developing the Bioscience –	706	North Central State College Bioscience Technician Expansion Project
308	Biotechnology Workforce for the Kansas City Region Kentucky Community & Technical College System GeoTech Center: National Geospatial Technology Center of Excellence	103	Northeast Community College Developing a Precision Agriculture Workforce Ladder through Secondary, College, and Incumbent Worker Education that Integrates Emerging
604	Klamath Community College Rural Internship Program	214	Northeast Iowa Community College
403	Lane Community College Water Advanced Technological Education Resource for Individuals (WATER-I)	211	Northeast Iowa Advanced Manufacturing Technicians Northeast Wisconsin Technical College Planning Grant for a Utilities and Energy Regional
707	Lorain County Community College Weld-Ed: National Center for Welding Education and Training	512	Center of Excellence Northwest Vista College Alamo Institute for Materials (Micro, Bio, Nano) Technology (AIM-TEC)
314	Los Angeles Pierce College CAPTIVATE: Collaboratory Achievement Project to Impact the Value of Architecture and Engineering Technology Education	609	Northwestern Connecticut Community College Engaging Students from Classrooms and Camps to College and Advanced Technological Careers
402	Lurleen B. Wallace Community College Educating Technicians in Energy Efficiency	209	Parkland College Precision Agriculture Curriculum Enhancement
702	Madison Area Technical College Building New Pathways to Biotechnology Technician Careers	010	Pasadena City College Early Career Undergraduate Research Experience (eCURe)
006	Madison Area Technical College Consortium for Advanced Manufacturing of Cell and Tissue-Based Products	008	Patrick Henry Community College Innovate, Design, Engineer, and Accelerate Career Pathway
404	Madison Area Technical College CREATE: Center for Renewable Energy Advanced Technological Education	514	Pennsylvania State University, University Park NACK: Nanotechnology Applications and Career Knowledge Support Center

Booth #	Alpha by Institution	Booth #	Alpha by Institution
513	Pennsylvania State University, University Park Nanotechnology Professional Development Partnership: A Web-Based, Live-Streaming	207	Tennessee Tech University AM-WATCH: Additive Manufacturing – Workforce Advancement Training Coalition and Hub
411	Approach for Optimizing Impact, Effectiveness, and Cost Piedmont Virginia Community College	502	Texas A&M Engineering Experiment Station Collaborative Research: Providing an Adaptive Learning Environment for the Acquisition of High
	Central Virginia Advanced Manufacturing Initiative		Value Manufacturing Skills
107	Purdue University MANEUVER: Manufacturing Education Using Virtual Environment Resources	510	Texas Southmost College Biotechnology Unified Education Network of Opportunities (BUENO) Project
508	Purdue University Troubleshooting and Safety Simulator for Wind Turbine Technician Education	501	Thaddeus Stevens College of Technology Skilled Women Get STEM Jobs: Recruiting and Engaging Female Students
401	Reedley College Developing 2+2+2 Pathways in Agribusiness to Meet the Needs of California's Agriculture Industry	206	Trident Technical College Creating Learning Opportunities for Undergraduates in Developing Technologies
413	Rochester Institute of Technology RoadMAPPs to Careers: A New Approach to Mobile Apps Education featuring a Mapp for Deaf and Hard-of-Hearing Students Rose State College and the University of Oklahoma	312	Trident Technical College Flight Deck Virtual Maintenance Trainer Project
302		107A	Tunxis Community Technical College RCNGM: Regional Center for Next Generation Manufacturing
	Norman Campus Collaborative Research: Unmanned Aerial Systems and Specialized Workforce Development to Support Oklahoman Agriculture and Industry	507	University of Alaska, Anchorage Campus Alaska Tech Learners: A Collaboration to Teach College Courses in Software Engineering to High School Students
610	Rutgers University, New Brunswick Pathways into Careers in Information Technology: Community College Student Decision Making about Academic Programs and Jobs	101	University of Alaska, Anchorage Campus and Washington State University Collaborative Research: Enhancing Hands-on Interactive Learning in Process Technology Programs
616	Salt Lake Community College Competency-Based, Open Entry, Open Exit Biotechnology Education (CBOE-Biotech)	608	with New Low-Cost Miniature Industrial Equipment University of Arkansas
301	Sinclair Community College Increasing Technician Preparedness in the Built Environment (BEprep)		Nontraditional Geospatial Applications in Technic Education (OPEN-GATE)
214A	Shoreline Community College Clean Tech ATE: Advancing Technician Training in Clean Energy Technology	414	Community College Creating a High School Pipeline for the Next Generation of Manufacturing Employees
309	Snow College Strengthening Farms and the Rural Economy through Agricultural Machanics	602	University of New Mexico SCME: Support Center for Microsystems Education
506	South Seattle College Aligning Students into Accelerated Pathways in	603	University of Wisconsin–Madison Working Partners: Documenting the Impact of Industry Collaboration within the ATE Community
605	SRI International Promoting the Development of STEM Tech	601	Valencia Community College Broadening Education, Access, and Momentum in Energy Management and Controls Technology
	Employability Skills: A Review of Practices and Needs in the ATE Community	204	Whatcom Community College
709	St. Charles Community College Educating Agriculture Technicians	307A	Weber State University Developing a Plan for the Northern Utah Geospatial
613	Suffolk Community College Leading Innovation through Green High-Tech Engineering, Sustainability, and Security	615	Technology Education Program Yakima Valley Community College
310	SUNY Polytechnic Institute NEATEC: Northeast Advanced Technological Education Center		Education Collaborative
		304	Yavapai College Engineered for Success: Engineering Technician Training for Rural Arizona

Wednesday, October 24

ATE Centers and Projects

7:00 – 9:15 pm • Exhibit Hall

Booth # 001 National Science Foundation

The National Science Foundation (NSF) is an independent federal agency created by Congress in 1950 to promote the progress of science; to advance the national health, prosperity, and welfare; and to secure the national defense. NSF competitively awards grants for research and education in the science, technology, engineering, and mathematics fields.

Booth # 002 ATE Central

ATE Central provides services, tools, and an online portal that support, amplify, and highlight the impacts of the ATE community and showcase the valuable curricula, resources, events, websites, and media created by ATE grantees. It also includes a resource archive and comprehensive database of project and center information that encourages use of ATE resources and promotes sustainability of project and center deliverables.

Booth # 003

HI-TEC – High Impact Technology Exchange Conference

HI-TEC is a national conference on advanced technological education where technical educators, counselors, industry professionals, and technicians can update their knowledge and skills. Charged with educating America's technical workforce, the event focuses on the preparation needed by the existing and future workforce for companies in the high-tech sectors that drive our nation's economy. HI-TEC uniquely explores the convergence of scientific disciplines and advanced technologies. Join us July 22-25 in St. Louis, MO for HI-TEC 2019.

Booth # 004

EvaluATE – Evaluation Resource Center for Advanced Technological Education

EvaluATE is the evaluation support center for the National Science Foundation's Advanced Technological Education program. The center provide webinars, resource materials, newsletters, workshops, and opportunities for ATE community members to engage around issues related to evaluation in the pursuit of excellence in technical education.

Booth # 005

Mentor-Connect – Leadership Development and Outreach for ATE

Mentor-Connect is designed to fill a void for the ATE program; address the fact that there are those in the nation's community colleges who have never been awarded funding from the NSF ATE program; diversify the ATE program overall; better manage a rapidly growing number of requests received by program officers related to grant proposal development and project management; and develop grant writing skills among STEM faculty who lack sufficient grant personnel at their institutions.

Booth # 006

Madison Area Technical College Consortium for Advanced Manufacturing of Cell and Tissue-Based Products (AMCTP)

This project will: (1) establish a national consortium and a system of governance based on shared interest and public-private partnerships enabling workforce development for cell and tissue manufacturing; (2) conduct annual meetings of the consortium and focused special interest groups; (3) identify, develop, and disseminate industry-based AMCTP core competencies, and (4) create a structure for sustainability based on public-private partnerships, investments, and commitments.

Booth # 007

Cuesta College

GIS Technology: Mapping, Data Management, and Work-Based Learning Across Industry Sectors

Cuesta College is partnering with local employers to develop a Geographic Information Systems (GIS) certificate program. The certificate program's courses and internships will build the skills, competencies, and abilities needed for occupations incorporating geospatial technologies. This project will also provide opportunities for students to attend conferences to network with employers or colleges with advanced geospatial programs.

Booth # 008

Patrick Henry Community College Innovate, Design, Engineer, and Accelerate Career Pathway (I.D.E.A.)

The I.D.E.A. program provides dually-enrolled career and technical high school students a pathway from high school to an associate degree program and a skill set for a career in engineering technologies. The program uses a project-based curriculum to deliver 24 college credits along with embedded credentials. This showcase highlights two of the student projects, STEM guitar and robotics.

Booth # 009

Indian River State College RCNET: Regional Center for Nuclear Education and Training

RCNET is a consortium of colleges and universities, industry partners, and multiple agencies designed to promote improvements in the education of nuclear technicians at the undergraduate and secondary school levels. RCNET offers a breadth of curriculum, outreach and training products in the nuclear fields of energy, life sciences, and environmental management, which will be available to view in the showcase.

Booth # 010

Pasadena City College Early Career Undergraduate Research Experience (eCURe)

eCURE uses undergraduate research as a platform for engaging students in STEM careers, improving STEM skills training, and enhancing critical thinking. eCURE includes a purposeful redesign of STEM curriculum including scaffolded research, knowledge, and skills across multiple STEM disciplines. eCURE develops three levels of research experiences beginning with research exposure and building to research internships at our partner institutions.

Booth # 011

Black River Technical College Precision Ag Technicians: Improving Arkansas Farming

This project will provide technical education to current and prospective farm workers for precision agriculture. A technical certificate has been developed with 13 semester hours applicable to an AS degree in agriculture.

Booth # 101

University of Alaska and Washington State University Collaborative Research: Enhancing Hands-on Interactive Learning in Process Technology Programs with New Low-Cost Miniature Industrial Equipment

This project uses light-weight, lowcost, miniature industrial equipment (LCMIE) that fits on a standard desktop or which can be mailed to online students. Process models are used in process technology programs, and for educating a more knowledgeable technician for industries that use mechanical, physical, and chemical processes.

Booth # 102

Central Piedmont Community College Anti-Counterfeit Printing and Packaging Technology

Central Piedmont has partnered with technology producers and package manufacturing companies to produce a certificate program to educate students about how to incorporate anti-counterfeiting technology into the production process. The project's goal is to educate the next generation of employees to fight this type of crime and protect the integrity of local and international trade.

Booth # 103

Northeast Community College Developing a Precision Agriculture Workforce Ladder through Secondary, College, and Incumbent Worker Education that Integrates Emerging Technologies and Farm Data

Northeast faculty are creating a precision agriculture career ladder by developing high school curriculum with teachers, modularizing college curriculum, and delivering modules and customized industry trainings to producers. The revised curriculum features real-world scenarios including the collection and analysis of Northeast farm data and simulator technologies. Local industry provides insight as faculty develop technology-enabled, data-driven, experiential precision agriculture curriculum.

Booth # 104

Columbus State Community College Pathways for Alternative Energy Automotive Technicians

This project focuses on developing a new career pathway and a certificate program in Alternative Energy Automotive Technology. The project will prepare alternative energy automotive technicians with the skills to diagnose, repair, and maintain hybrid, electric, compressed natural gas and hydrogen alternative fuel vehicles.

Booth # 105

Columbus State Community College Data Analytics Technician Advancement (DATA) Program

This project focuses on developing a new career pathway in data analytics with two tracks: one for incoming students from regional high schools, and one for veterans and underemployed incumbent workers. The pathway is based upon a 2+2+2 model that includes regional high schools and universities, as well as an internship guide for data analytics technicians.

Booth # 106

Columbus State Community College Design Thinking: Additive Manufacturing Summer Institute

The goal of this project is to develop and implement an Additive Manufacturing Institute model to provide high school students with the opportunity to explore careers in advanced manufacturing and pursue education leading to an industry-recognized certification. The program has also created a project-based learning and additive manufacturing professional development program for high school faculty.

Booth # 107

Purdue University MANEUVER: Manufacturing Education Using Virtual Environment Resources

Project MANEUVER is developing an affordable virtual reality (VR) framework to address the imminent demand for well-trained digital manufacturing technicians. This VR instructional framework will advance the field of digital manufacturing and strengthen education by remedying the lack of clearly defined career pathways for entry-level digital manufacturing technicians.

Booth # 107A

Tunxis Community Technical College RCNGM: Regional Center for Next Generation Manufacturing

RCNGM provides Connecticut's community colleges with a seamless career pathway in advanced manufacturing. The center offers professional development opportunities for educators; provides articulation pathways that include stackable credentials; and addresses the need to market manufacturing as a high-tech industry. Stop by for RCNGM's DVDs, which include a focus on women in manufacturing.

Booth # 201

Columbus State Community College Strengthening Mobile Application Resources and Technician Training: The SMARTT Project

The goal of this project is to develop a 2+2+2 educational pathway focusing on mobile application development. The curriculum addresses iOS, Android, and hybrid-app development. The pathway will include two tracks: one that is focused on mobile media design and one that is focused on mobile software development.

Booth # 202

Columbus State Community College Logistics Engineering Technology Work Study

This project builds upon the creation of Columbus State's Logistics Engineering Technology degree. The project will adapt and implement a proven work-study model to the growing Central Ohio logistics industry. After two semesters of study, students are paired with area employers for a year-long, paid experiential learning position.

Booth # 203

Edmonds Community College MatEdU: National Resource Center for Materials Technology Education

MatEdU focuses on material science, provides web-based resources, and instructional materials, and promotes the use of core competencies for technicians who handle materials. Rapid changes and new developments in materials as well as traditional areas of materials require having educated technicians. A collection of fully cataloged and peerreviewed modules, demos, and laboratory exercises are available on the MatEdU website.

Booth # 204

Whatcom Community College CWW: CyberWatch West

CWW is the only NSF ATE center in the Western U.S. dedicated to cybersecurity education and outreach. The consortium is focused on building educational and industry partnerships and delivering professional and student development programs. CWW continues its mission to build a stronger cybersecurity infrastructure through innovative online curricula, robust student competitions, and building pathways.

Booth # 205

Del Mar College Unmanned Aircraft Systems Technology Education Consortium (UASTEC)

UASTEC has developed three new UAS courses and trained three cohorts of UAS technicians. This program highlights a new UAS Certificate and the results of the project's Federal Aviation Administration certifications.

Booth # 206

Trident Technical College Creating Learning Opportunities for Undergraduates in Developing Technologies (CLOUDTech)

The CLOUDTech project provides for the development of an innovative educational pathway in cloud computing technology to address a critical industry need. To date, 47 OpenStack Cloud computing labs have been created and are free to all. Ask about trying out the labs online on our servers or sign up to receive copies of all labs on media.

Booth # 207

Tennessee Technological University AM-WATCH: Additive Manufacturing – Workforce Advancement Training Coalition and Hub

The Additive Manufacturing Workforce Advancement Training Coalition and Hub is being established to address gaps in the knowledge base of 21st century technicians to ensure that they are prepared for advanced career placement. This showcase provides the current project deliverables in several categories in assessing ABET student outcomes, developing MOOCs, organizing the studio workshops, and attending the virtual lecture series.

Booth # 207A

Bridgerland Applied Technology College Scaling Up Utah's Automated Manufacturing Technician Pipeline

Bridgerland refines the curriculum, retention, and recruitment of its automated manufacturing pipeline with 10 high schools in northern Utah and southern Idaho. Professional development is developed to share what the project has learned to other technical colleges across the state of Utah.

Booth # 208

Moraine Valley

Community College CSSIA: National Support Center for Systems Security and Information Assurance

CCSSIA was founded in 2003 to expand the pipeline of professionals in the field of cybersecurity. CSSIA has worked with community colleges, educators, and business leaders to build successful cybersecurity certificate and degree programs. CSSIA's National Support Center will further work to expand the nation's pool of information assurance and cyber defense professionals.

Booth # 209

Parkland College Precision Agriculture Curriculum Enhancement (PACE)

The PACE project uses emerging technologies in conjunction with agronomy to enhance precision agriculture education by developing close partnerships with local and regional industry partners. The project is focused on updating curriculum and working directly with high schools through the facilitation of a workshop specifically for vocational agriculture teachers.

Booth # 210

Missouri State University VESTA: Viticulture and Enology Science and Technology Alliance

VESTA provides students' nationally recognized online education with access to nationally recognized expert instructors and participation in local field practicums. Through a robust state partnership, and by utilizing its ground breaking distance education model, VESTA provides leadership, expertise, resources, academic programs, and technical assistance to students interested in entering and advancing careers within the grape and wine production industry.

Booth # 211

Northeast Wisconsin Technical College Planning Grant for a Utilities and Energy Regional Center of Excellence

The Utilities Pipeline Development for Advanced Technological Education (UPDATE) project recruits high school students to utility and energy careers with Tech Camps and Utility Preview Days. UPDATE's job fairs connect the college's utility students with employers. The college leveraged UPDATE to secure a \$150,000 state equipment grant, \$400,000 in industry equipment donations, and voters' approval of a \$7.1 million building project.

Booth # 212

Florence-Darlington Technical College and Science Foundation Arizona Collaborative Research: HSI ATE Hub – Diversifying the ATE Program with Hispanic Serving Institutions Using Culturally Inclusive Mentoring and ATE Resources

The HSI ATE Hub supports twoyear Hispanic Serving Institutions seeking NSF ATE grants to advance technician education. The project couples a STEM planning process conducted at HSI colleges by the Kickstarter project with participation in the Mentor-Connect grant preparation and leadership development mentoring experience, develops Hispanic ATE PI mentors, provides a collection of HSI-specific resources, and connects HSIs within ATE.

Booth # 213

Clark State Community College Cyber Pro: Developing Rigorous and Enhanced Academic Modules

Cybersecurity lab modules are being developed to cover entrylevel cybersecurity knowledge and skills. Content is being mapped to industry certifications and the NICE Cybersecurity Workforce Framework. For each topic, a beginning, intermediate, and advanced lab activity is being developed. Modules are scoped so they can be delivered within a single high school class period.

Booth # 214

Northeast Iowa Community College (NICC) Northeast Iowa Advanced Manufacturing Technicians

This project is dedicated to achieving excellence in technician training that meets the needs of local industry. NICC has two main campuses, one in Peosta, Iowa, and one in Calmar, Iowa. Along with these there are centers located around the district. Competencybased and modularizing curriculum makes for standardized curriculum.

Booth # 214A

Shoreline Community College Clean Tech ATE: Advancing Technician Training in Clean Energy Technology

Upgrades to the clean energy tech curriculum include project-based learning that develops higher levels of software and engineering skills that address industry-identified needs and contain job-specific experiences, as well as skill standards for the new position of clean energy analyst. This project will expedite graduates' placement into energy management jobs and contribute new materials to the ATE community.

Booth # 301

Sinclair Community College Increasing Technician Preparedness in the Built Environment (BEprep)

BEprep provides professional development and curriculum support to community college faculty as they incorporate an existing industry-recognized credential into their built environment degree programs. The Construction Documents Technologist (CDT) certification from the Construction Specifications Institute provides external verification of the knowledge and skills graduates have achieved. The project includes professional development allowing faculty to recruit and retain underserved populations.

Booth # 302

Rose State College and the University of Oklahoma, Norman Campus Collaborative Research: Unmanned Aerial Systems and Specialized Workforce Development to Support Oklahoman Agriculture and Industry

This effort explores the possibility and advantages of integrating Unmanned Aerial Systems (UAS) into curricula for engineering and technology programs at Rose State College. Additionally, the transition for students into the Aerospace Engineering program at the University of Oklahoma will be improved. Finally, the UAS program will be used to increase K-12 STEM awareness.

Booth # 303

Monroe Community College GeoTech Consortium of Western New York: Get the GIST (Geospatial Information Science Technology) Certificate

Monroe Community College (State University of New York) has built a geospatial career pipeline between high schools, the GIST certificate program, and the geospatial workforce. This showcase will focus on dual credit courses for high school students, the new mapping club, the certificate program, and student internships.

Booth # 304

Yavapai College Engineered for Success: Engineering Technician Training for Rural Arizona

Yavapai College is implementing enhancements to its Applied Pre-engineering program to increase capacity, improve student learning, and respond to industry's need for highly skilled engineering technicians through paid internships, problem-based learning, stackable credentials, early college, and STEM pathways.

Booth # 305

Idaho State University Providing Opportunities for Women in Energy Related (POWER) Careers

POWER Careers is setting and sustaining a significant level of female participation in maledominated engineering technology programs. The project is creating diverse role models for future females who seek high-skill/ high-wage careers in energy and manufacturing. POWER Careers uses pre-engagement strategies to ensure that interested women actually enroll and begin their chosen program. The project promotes a mentoring culture.

Booth # 306

Clark State Community College Precision Technologies: Integrating Agriculture and GeoSciences

Clark State College has continued work in developing Precision Ag Technician programs and providing summer workshops for high school educators. Faculty from Parkland College and Ellsworth Community College participate in the teacher workshop and also participate in the development and sharing of curricula throughout this project. Clark State has been designated as the Ohio Center for Precision Agriculture.

Booth # 307

Austin Community College AC2: Austin Community College Bio-Link Regional ATE Center

The center focuses on Texas and Kentucky. The main goal of the center is to establish a distributed leadership network. Other goals include establishing student recruitment pipelines using undergraduate research experiences; establishing community college contract service organizations, and statewide articulation agreements; determining and meeting emerging workforce trends; and establishing entry-level certification in high schools and community colleges.

Booth # 307A

Weber State University Developing a Plan for the Northern Utah Geospatial Technology Education Program (NUGTEP)

NUGTEP will help students prepare for successful careers in the geospatial workforce across northern Utah. This showcase focuses on curriculum proposed for two geospatial certificates of proficiency and the Geospatial Analysis minor as part of the twotier curriculum model unique to our university's two-year and four-year partnership.

Booth # 308

Kentucky Community & Technical College System

GeoTech Center: National Geospatial Technology Center of Excellence

The GeoTech Center will show the geospatial model courses, including Crime Mapping, Python for GIS, UAS, and GeoIntelligence. The recently released U.S. Department of Labor Geospatial Technology Competency Model 2018 (GTCM 2018) will be demonstrated. The geospatial practice tests and concept modules will be shown. The geospatial self-assessment can be completed and the summer workshop calendar will be announced.

Booth # 309

Snow College Strengthening Farms and the Rural Economy through Agricultural Mechanics

Snow College's Agriculture Technology and Mechanics program addresses the needs of family farmers and the agriculture equipment industry. The program aligns with regional high school pathways to college coursework. Course curriculum combines multiple disciplines with advanced technology courses such as aerial imagery, global positioning, UAVs, and precision irrigation systems.

Booth # 310

SUNY Polytechnic Institute NEATEC: Northeast Advanced Technological Education Center

NEATEC, in partnership with education institutions and businesses, provides community college and secondary school students with hands-on opportunities in cutting-edge education and training through cooperative learning, internships, and outreach programs. These efforts have a direct and immediate impact on the readiness and capabilities of the nanotechnology workforce in New York and Western New England.

Booth # 311

Hofstra University Needed Math: An ATE Conference Proposal

Employers, instructors of technical subjects, and mathematics educators who participated in a three-day Needed Math Conference in 2018 focused on bringing to light how mathematics education might better reflect the concepts and skills that are truly prerequisites for postsecondary education technical programs and for successful employment as entry-level technicians in STEM-related fields.

Booth # 312

Trident Technical College Flight Deck Virtual Maintenance Trainer Project

A Flight Deck Maintenance Trainer will be used to create new curriculum and modify existing related curriculum to significantly enhance student education in industry's high-demand aeronautical fields, as well as encourage K-12 students to pursue aeronautical and other STEM careers. This showcase will focus on the technological infrastructure and curricula of the college's avionics program.

Booth # 313

Grayson County Junior College District Boosting New Careers in Advanced Manufacturing Industries

Through extensive work from the college, area high schools, and local industry, the Advanced Manufacturing program is thriving in only its second year. This showcase will focus on the planning and implementation of the program and partnerships, which begin at the 9th grade level for high school students and continues through high school, college completion, and employment in local industry.

Booth # 314

Los Angeles Pierce College CAPTIVATE: Collaboratory Achievement Project to Impact the Value of Architecture and Engineering Technology Education

CAPTIVATE establishes a campus collaboratory: a hub for students, educators, and the community to develop and implement solutions to address community needs. CAPTIVATE engages engineering design and technology and architecture technology students in project-based learning that involves multidisciplinary collaboration, real-world connection, community partnerships, tangible impact, and environmental sustainability to strengthen 21st century skills.

Booth # 401

Reedley College Developing 2+2+2 Pathways in Agribusiness to Meet the Needs of California's Agriculture Industry

The project will create seamless 2+2+2 pathways from high school to two-year community college and four-year institutions for students interested in pursuing education in agriculture business and related fields.

Booth # 402

Lurleen B. Wallace Community College Educating Technicians in Energy Efficiency

This project is designed to educate students in the improvements of energy efficiency in manufacturing and transportation. The project is a joint venture between the Industrial Electronics and the Diesel and Heavy Equipment programs at Lurleen B. Wallace Community College. Key training points include the operations and service training of Siemens PLC systems and natural gas engines.

Booth # 403

Lane Community College Water Advanced Technological Education Resource for Individuals (WATER-I)

WATER-I will be the first fully online two-year degree program in Water Conservation. Students will work with fieldwork mentors to complete their course and hands-on projects. The online program will be offered to the geographic areas impacted by severe drought, such as the western U.S.

Booth # 404

Madison Area Technical College CREATE: Center for Renewable Energy Advanced Technological Education

CREATE's mission is to advance the field of renewable energy by championing cutting-edge renewable energy education programs. CREATE works with faculty, providing exemplary instructional materials and curricula, promoting renewable energy careers, establishing academic partnerships with industry, and addressing the rapidly evolving knowledge and skills required by renewable energy technicians.

Booth # 405

Columbus State Community College Manufacturing Experiential Advancement Readiness Network Project

Columbus State Community College, in collaboration with Lorain County Community College, will advance experiential workbased learning programming and outreach to increase the supply of qualified advanced manufacturing technicians. This project will coordinate a statewide network that assembles and disseminates best practices and innovations in experiential work-based learning.

Booth # 406

Columbus State Community College Collaboration of Midwest Professionals for Logistics Engineering Technology Education Project

The Collaboration of Midwest Professionals for Logistics Engineering Technology Education (COMPLETE) project is a consortium of community colleges in the Midwest region that are leaders in the logistics field. The COMPLETE project integrates key components of industry knowledge including technology applications with engineering systems, and how these technologies integrate into supply chain operations.

Booth # 407

Itasca Community College (ICC) Development of a 21st Century Industrial Process Operations Program

The Process Operations program at ICC trains perspective employees to meet the employer expectations for multiple 21st century process industries. The curriculum is industry-driven through its development and remains responsive to regional fluctuations. Student development and assessment areas include technical knowledge (what students will know), professionalism (who students are), and process awareness (what students can do).

Booth # 408

Chippewa Valley Technical College Smart Manufacturing and Resources for Transforming the Future (SMART Future)

The SMART Future project utilizes a mobile laboratory to engage and provide opportunities for credit for prior learning and industryrecognized credentials to rural Wisconsin high school students. Corresponding professional development is provided to high school technology instructors on the topics of automation, supply chain, and industry 4.0.

Booth # 409

Central Community College Mechatronics with Instrumentation and Controls (MwIC)

The MwIC project's continuing goal is to increase the number of qualified process instrumentation and control technicians to meet current and future workforce demands in Nebraska by developing a new pathway within an existing mechatronics program, and deploying innovative recruitment, outreach, retention, and completion strategies.

Booth # 410

Metropolitan Community College Advanced Technological Education in the Intelligent Infrastructure for the Industrial Internet of Things

Where the Internet meets infrastructure in industry is the focus of this NEXUS project. The project will focus on the creation of modules used to teach both high school and college students the underlying principles of the industrial Internet of Things. This showcase will include a demonstration of the first iteration of the predictive maintenance module.

Booth # 411

Piedmont Virginia Community College (PVCC) Central Virginia Advanced

Manufacturing Initiative

Partnering with local industry and international credentialing groups, PVCC is working to develop an Advanced Manufacturing program to train students for careers in this high demand field. Current efforts are focused on development of a two-year AAS degree, an enhanced internship program, workforce outreach to local industry, a stronger pipeline of students from secondary schools, and training of secondary instructors.

Booth # 412

Columbus State Community College Building an Industry-Aligned Pathway to Careers in Cloud Computing

Columbus State Community College and Northern Virginia Community College will develop a Cloud Fundamentals Certification, stackable toward an AAS degree with Cloud Specialization. This project leverages existing collaborations among the institutions to create labs and share curriculum development best practices. This project addresses the national call to increase the supply of qualified technicians proficient in cloud technology.

Booth # 413

Rochester Institute of Technology RoadMAPPs to Careers: A New Approach to Mobile Apps Education featuring a Mapp for Deaf and Hard-of-Hearing Students

The demand for mobile app developers requires colleges to move swiftly to prepare a qualified workforce. At Rochester Institute of Technology, an innovative AAS degree program is addressing this challenge. This industrydriven program uses a native cross-platform approach so that time normally spent teaching students about different platform languages can be devoted to mastery of C# and Xamarin cross-platform development.

Booth # 414

University of Kentucky, Madisonville Community College Creating a High School Pipeline for the Next Generation of Manufacturing Employees

Madisonville Community College is partnering with the local Career and Technology Center to create a pipeline between the local high schools and Madisonville Community College for the next generation of manufacturing employees.

Booth # 501

Thaddeus Stevens College of Technology Skilled Women Get STEM Jobs: Recruiting and Engaging Female Students

The Skilled Women Get STEM Jobs project focuses on introducing female high school students to career opportunities available to graduates of the Computer Integrated Machining, Electrical Technology, and Water and Environmental Technology programs at Thaddeus Stevens College. The project relies on industry partnerships, female role models, and hands-on workshops to raise awareness of technical careers.

Booth # 502

Texas A&M Engineering Experiment Station

Collaborative Research: Providing an Adaptive Learning Environment for the Acquisition of High Value Manufacturing Skills

This showcase will present a data analysis from two professional development sessions that were organized in various aspects of high-value manufacturing, mainly targeted to the energy industry in the Houston area of Texas.

Booth # 503

Central Oregon Community College Northwest Engineering and Vehicle Technology Exchange

Central Oregon Community College and Rio Hondo College will develop advanced vehicle training standards, with a focus on vehicle electrification systems, for technicians working with high voltage and high pressure. If your college is developing a hybrid and electric vehicle component to your current degree or starting a new degree, we would like to stay in contact with you.

Booth # 504

Hartnell College Meeting Current and Future Challenges: Expanding Ag Sciences Technician Training

Hartnell College's ATE program has advanced training by implementing food safety and seed science technician programs and strengthened public-private partnerships. Hartnell College's Agriculture program was voted "Best Ag Educator for 2015–2018" by Monterey County Weekly and "2018 Public-Private Partnership of the Year" by the Monterey Bay Economic Partnership.

Booth # 505

Collin County Community College Information Technology Skill Standards 2020 and Beyond

IT Skill Standards 2020 and Beyond will create a set of employer-led and verified information technology (IT) skill standards for high demand job clusters. Educators use skill standards to create relevant, future-facing curriculum to prepare students to meet employers' job requirements. Hundreds of employers and community college educators from across the nation will identify essential skills in top IT job clusters.

Booth # 506

South Seattle College Aligning Students into Accelerated Pathways in Engineering,

Pathways in Engineering, Technology, and Building Science

South Seattle College is addressing common barriers to STEM recruitment and completion by: (1) implementing a STEM AS degree that aligns existing skills in engineering technology with degree requirements to accelerate completion; (2) offering STEM field experiences that expose undergraduates to industry work; and (3) creating a network of community, industry, and educational partners to advance accelerated STEM programs.

Booth # 507

University of Alaska, Anchorage Campus Alaska Tech Learners: A Collaboration to Teach College Courses in Software Engineering to High School Students

Alaska Tech Learners educates rural Alaskan students in the fields of eCommerce, mobile applications development, and network administration. The "shared teaching model" used combines the expertise of certified high school teachers with the content expertise of university faculty. The project's goal is to build villages by educating local students to fill local professional positions.

Booth # 508

Purdue University Troubleshooting and Safety Simulator for Wind Turbine Technician Education

This project is developing and assessing an interactive three-dimensional simulator for wind turbine technicians to transform teaching practices for troubleshooting and safety in community college wind energy programs, and to improve the quality of the wind energy workforce to meet the critical needs of industry.

Booth # 509

Columbia Gorge Community College Developing and Deploying Flipped Classroom Resources for Electrical Engineering, Industrial Maintenance, and Renewable Energy Technicians

Columbia Gorge Community College's Electro-Mechanical Technology program is developing online resources to support the flipped classroom method of instruction to teaching technical subjects like electronics, hydraulics/ pneumatics, and motor control. This approach delivers instruction outside the class and activity-based learning inside the class.

Booth # 510

Texas Southmost College Biotechnology Unified Education Network of Opportunities (BUENO) Project

The newly funded BUENO project is focused on building the first biotechnology program in the Lower Rio Grande Valley, including a dual-credit certificate. By working closely with our partners in the local school districts, veteran offices, and industry, this project will develop a true network of opportunities offering a clear path to careers in biotechnology-based STEM fields.

Booth # 511

Coastal Alabama Community College The Associate of Applied Science in Dynamic Reality Technologies Program: Training Technicians to Use Extended Reality to Develop Workforce Training Simulations

This project will use curriculum and prototype training simulations with an aligned curriculum and industrybased experiences. The project will use virtual reality (VR), augmented reality (AR), and mixed reality (MR) hologram technologies.

Booth # 512

Northwest Vista College Alamo Institute for Materials (Micro, Bio, Nano) Technology (AIM-TEC)

The goals of project AIM-TEC include: (1) supporting the educational preparation of students with 21st century knowledge and skills in micro-nano-bio technologies; (2) strengthening transition points from high school to college, and college to workforce/ advanced education through innovative student recruitment and retention strategies; (3) expanding community awareness of nanotechnology benefits, current and potential impacts, and educational and career pathways available.

Booth # 513

Pennsylvania State University, University Park

Nanotechnology Professional Development Partnership: A Web-Based, Live-Streaming Approach for Optimizing Impact, Effectiveness, and Cost

The Nanotechnology Professional Development Partnership (NPDP): A Web-Based, Live-Streaming Approach for Optimizing Impact, Effectiveness, and Cost project is now delivering real-time interactive professional development. The NPDP team utilizes commercial web video sharing tools, videos, remote access, as well as other participant engagement tools to deliver lecture and lab materials in real time to the participant's computer.

Booth # 514

Pennsylvania State University, University Park NACK: Nanotechnology Applications and Career Knowledge Support Center

The NACK National Support Center for Nanotechnology Workforce Development has a mission to provide assistance to existing or developing micro-nanotechnology workforce education programs at educational institutions across the U.S. NACK is facilitating the creation of stackable certificates, leading the Remotely Accessible Instruments for Nanotechnology (RAIN) Network, holding webinars, and providing classroom material to provide national infrastructure.

Booth # 601

Valencia Community College Broadening Education, Access, and Momentum (BEAM) in Energy Management and Controls Technology

Valencia College has developed an AS degree in Energy Management and Controls Technology by partnering with industry to provide students with scholarships, internships, and access to a stateof-the-art, hands-on building automation systems controls lab and to motivate veteran and female students to pursue a rewarding career where they can better the planet one building at a time.

Booth # 602

University of New Mexico SCME: Support Center for Microsystems Education

SCME is focused on the exploding field of microsystems technology. The center has an extensive infrastructure to support our Micro Nano Education Special Interest Group community. Discover why microsystems are critical to our nation's high-tech growth and how you can plug and play our materials into your STEM programs.

Booth # 603

University of Wisconsin–Madison Working Partners: Documenting the Impact of Industry Collaboration within the ATE Community

The Working Partners Research project is focused on discovering, documenting, and disseminating key factors and core practices of successful industry partnerships within the ATE community. A mixed methods approach has resulted in a set of partnership models, exemplary examples of successful partnerships captured through interviews and the development of mini case studies, and the recent launch of an online toolkit.

Booth # 604

Klamath Community College Rural Internship Program

Rural colleges have found obstacles placing widely dispersed and economically disadvantaged students into traditional internship programs. To address the shortage of internship opportunities, Klamath Community College in rural south central Oregon is enhancing the job readiness of students in the Computer Engineering Technology and Digital Media and Design associate degree programs through virtual and peer-to-peer internships.

Booth # 605

SRI International

Promoting the Development of STEM Tech Employability Skills: A Review of Practices and Needs in the ATE Community

Employers hire students from community college career technical education programs for having technical skills, but fire them for lacking employability skills. Help your students get ahead: come see this showcase reporting on research into the employability skills desired in information technology and advanced manufacturing, and check out the programmatic and classroom approaches used to develop these skills.

Booth # 606

Baker College of Flint Advancing Photonics and Laser Technician Education in Michigan

The showcase will present several approaches to expand the education of photonics and laser technicians in the state of Michigan. These include developing new curriculum describing current photonics applications, creating new laboratory infrastructure, introducing photonics in career and technical education centers, and sharing new developments in the field through an annual photonics symposium at Baker College.

Booth # 607

College of Lake County CollaborATE

CollaborATE addresses major needs in developing the technological workforce in manufacturing so high-skill, high-wage jobs can be filled. This exhibit showcases the open source curriculum and lowcost trainers built for the grant. The project also encompasses engineering curriculum reform, developing dual-credit pipelines, professional development for high school faculty, aligning national certifications with mechatronics, and developing a mechatronics community of practice.

Booth # 608

University of Arkansas Opening Pathways to Employment through Nontraditional Geospatial Applications in Technical Education (OPEN-GATE)

The OPEN-GATE project is a collaboration of five partner institutions in the University of Arkansas system. The goal is to increase access to location-based technologies to prepare students for employment in a wide variety of industries. OPENGATE offers professional development seminars, develops geospatial content, and provides industry specific examples of location-based services.

Booth # 609

Northwestern Connecticut Community College Engaging Students from Classrooms and Camps to College and Advanced Technological Careers

The goal of our project is to increase the number of skilled technicians in Northwestern Connecticut by developing a pathway from seventh grade to high school to an associate's degree and technology careers for students in the Torrington School District. This showcase will focus on the activities for both teachers and students, as well as the partnerships with industry.

Booth # 610

Rutgers University, New Brunswick Pathways into Careers in Information Technology: Community College Student Decision Making about Academic Programs and Jobs

This targeted research project examines how students make decisions about pursuing credentials and careers in information technology. Relying on multiple sources of data, the project will examine how students' experiences and information resources influence decision making early in college and how that evolves over time. This project seeks to generate knowledge to increase student success and meet workforce needs.

Booth # 611

Bemidji State University MSAMCOE: Minnesota State Advanced Manufacturing Center of Excellence | ATE Regional Center

The Minnesota State Advanced Manufacturing Center of Excellence is an innovative, collaborative effort between education and industry to recruit, educate, and train workers for dynamic careers in advanced manufacturing.

Booth # 612

Hagerstown Community College (HCC) Advanced Manufacturing Technicians: Education for an Emerging Workforce

HCC's project, now in its third year of execution, is to create an ADM program, facilities, and a method for filling a pipeline with students. The program believes that young people who have experienced the excitement of advanced manufacturing will pursue or at least understand the importance of STEM education. HCC is currently engaged in sustainability and partnership work with the community.

Booth # 613

Suffolk Community College Leading Innovation through Green High-Tech Engineering, Sustainability and Security (LIGHTES^2)

The LIGHTES^2 NSF ATE project developed and implemented an AAS cybersecurity degree that saw enrollment double in its second year. Program activities also include the establishment of secondary and postsecondary pathways, expansion within a newly constructed Net-Zero Energy STEM building at a second campus, and industry collaborations.

Booth # 614

Cape Fear Community College CT-EnTICE: Chemical Technology – Enrolling Technicians and Improving Community Engagement

CT-EnTICE focuses on increasing student enrollment and improving community engagement for a technician training program, specifically within the chemical technology trade. Activities supported by this ATE grant include a high school competition, laboratory check-out program, and a program liaison, which can easily be implemented in any ATE program. This showcase will provide statistics and findings throughout the 2017 and 2018 academic years.

Booth # 615

Yakima Valley Community College Pacific Northwest Viticulture and Oenology Education Collaborative

Partnering with South Seattle College, Wenatchee Valley College, and Yakima Valley College, PNWEC offers two new online one-year certificates in Wine Business Entrepreneurship and Viticulture Sustainability. With sustained support from the Washington Winegrowers Association and industry advisors, Yakima Valley College developed a new technical training for incumbent winery cellar workers, Winery Cellar Leadership.

Booth # 616

Salt Lake Community College Competency-Based, Open Entry, Open Exit Biotechnology Education (CBOE-Biotech)

The main barriers to education for biotechnicians are financial difficulties, course availability, and scheduling. To overcome education challenges and build a skilled workforce, Salt Lake Community College has converted the biotechnology degree program to competency-based education. Curriculum and instructional material are online and an open lab format allows students to customize lab experiences to fit work and family schedules.

Booth # 617

BioQUEST Curriculum Consortium, Inc.

Collaborative Research: Opening the Pathway to Technician Careers: A Conference for Biology Teachers of Deaf Students

BioQUEST and DeafTEC are planning a conference that will bring together high school teachers, community college biology faculty, and ASL interpreters to improve biology education for deaf and hard-of-hearing (deaf/hh) students. Through a focus on Universal Design for Learning principles and literacy building case-based learning pedagogy, the conference will improve learning not only for deaf/hh students but for all students in the biology classroom.

Booth # 618

Forsyth Technical Community College Biosciences Industry Fellowship Project (BIFP) with NIIMBL

The BIFP is a three-week program. Fellows participate in boot camps at three community colleges with hands-on lab experiences and shadow workers in various departments at a dozen different industrial/university hosting facilities with the aim and purpose of visiting many of our key bioscience assets and demystifying the bioscience industry by developing and delivering presentations for professional development.

Booth # 619

Ashland University Advanced Technological Education for Two-Year Colleges (ATE-2YC)

The project convenes proposal writing workshops and follow-on mentoring for two-year college STEM faculty. The project addresses barriers faced by two-year colleges. The workshops and mentoring by experienced ATE PIs strengthen institutional capacity to pursue NSF support. The outcomes include an increase in the number of competitive ATE proposals submitted by two-year colleges and a stronger STEM grant writing culture.

Booth # 620

Clemson University A Sustainable ATE Coordination Network for Enhancing Personalized Learning Using Virtual and Augmented Reality-Based Technology Innovations in Technician Education

The CA2VES VR/AR ATE Coordination Network is a professional member network that brings together innovators in education, industry, and virtual and augmented reality development to create an endto-end collaborative innovation ecosystem that will enhance personalized learning outcomes through virtual and augmented reality-based technologies.

Booth #621

Eastern Iowa Community College District ATEEC: Advanced Technology Environmental Education Center

ATEEC is a national Resource Center with the goal of providing the nation's high schools, two-year colleges, and the ATE community with educational materials, business and industry information, research, evaluation, and mentoring support to increase leadership and programming capacity in fields that incorporate water and environmental technology. Information on the Water INTENSE: INteractive TEchNology Education project will also be shared.

Booth # 700

Kansas City Kansas Community College Kansas City Kansas Biomanufacturing Training Laboratory (KCKBTL): Developing the Bioscience– Biotechnology Workforce for the Kansas City Region

Collaboration between Ceva Biomune and KCKBTL resulted in a mutually beneficial externship experience where Ceva Biomune showed teachers the steps involved in the manufacturing of vaccines. The teachers were also shown the safeguards and processes put in place to ensure safe products are released to the public. In turn, teachers used this information to incorporate their experiences into existing curriculum.

Booth # 701

Digital World Biology A Bridge to Bio-Link's Future

Bio-Link has been serving the biotech education community for more than twenty years and currently represents 114 community colleges, 45 K-12 affiliate schools, 630 members, and over 1,130 newsletter subscribers. This showcase will focus on improvements to the Bio-Link website (Bio-Link.org) and describe future capabilities for Biotech-Careers.org that will better serve the needs of students, faculty, and industry.

Booth # 702

Madison Area Technical College Building New Pathways to Biotechnology Technician Careers

The goal of this project is to enhance community college biology curriculum with undergraduate research experiences. This approach is designed to scaffold the core competencies of biology education and core skills for bioscience technicians within and across curriculum. Students will have new pathways to careers through a biotechnology certificate and digital badges. Partnerships with local industry will provide internship experiences to hone skills and network.

Booth # 703

Montgomery County Community College NBC2: Northeast Biomanufacturing Center and Collaborative

NBC2 is dedicated to developing curricula and professional development to support technician training for the development, production, and analysis of biopharmaceuticals and other bio products. Recent additions to NBC2s industryendorsed curriculum, including ready-to-insert course modules and a comprehensive exam, will be discussed as well as upcoming faculty professional development workshops.

Booth # 704

Navajo Technical University Dimensional Metrology Certification Project

Navajo Technical University developed a certification process for the current Industrial Engineering and Advanced Manufacturing programs that includes GDT, portable CMMs, laser scanning, and white light scanning. This programs ensures that all students get hands-on experience with the equipment and for some, a more in-depth experience with the equipment and software.

Booth # 705

McLennan Community College Enhancing Network and Cybersecurity Technician Careers in Collaboration with Industry

Working with industry and 31 school districts, this project will integrate cybersecurity into current pathways. The program will have multiple entry and exits points providing critical technical and employability skills. It will also provide community outreach to promote cyber opportunities through awareness programs, and training programs for high school and college faculty and advisers.

Booth # 706

North Central State College Bioscience Technician Expansion Project

The Bioscience Technician Expansion Grant's design will assist North Central Ohio's workforce to fill a void in the biotechnology field. This area is seeing an increased demand in technician-level jobs and this grant grant allows students to be enrolled in evening classes while beginning their employment in the field. These hybrid courses will be available to other institutions upon completion.

Booth # 707

Lorain County Community College Weld-Ed: National Center for Welding Education and Training

Weld-Ed is a National Center of Excellence linking the welding and materials joining industry with the nation's community and technical colleges and universities. Weld-Ed offers faculty professional development, program accreditation, curriculum development, and occupational demand research to secondary and postsecondary welding educators. The Weld-Ed network has ten regional partners and more than 400 affiliate institutions from across the country.

Booth # 708

Grossmont Cuyamaca Community College District

California WaterWorks: Building the People Pipeline

The Center of Water Studies at Cuyamaca College provides an innovative, hands-on approach to enhance the water and wastewater technology curriculum. The Center's newly constructed Field Operations System Yard and lab renovations support state-of-the-art training for this specialized workforce of water industry professionals.

Booth # 709

St. Charles Community College Educating Agriculture Technicians

This project plans to address the critical need for highly-skilled technicians to meet the growth in agricultural fields in the greater St. Louis region. To reach this goal, the project plans to implement two new agriculture degree programs; develop and implement recruitment and retention strategies; and provide outreach on agriculture fields to students, parents, and the community.

Booth # 710

Normandale Community College Distance Education and Learning in Vacuum Technology for Employment Readiness (DELIVER)

From nanotechnology to national defense, advanced manufacturing industries depend on complex vacuum systems and vacuum technicians. Project DELIVER provides standards-aligned courses and hands-on training to national labs, industries, and two-year colleges around the nation by using telepresence technology. Come learn how to integrate these courses into an existing physics or engineering technology curriculum or professional development offering.



DATE SAVE

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SHOWCASE II: ATE CENTERS AND PROJECTS SHOWCASE MAP THURSDAY • OCTOBER 25, 2018



SHOWCASE II

THURSDAY • OCTOBER 25, 2018

ATE Centers and Projects

3:45 – 6:00 pm • Exhibit Hall

Booth #	Alpha by Institution	Booth #	Alpha by Institution
806	Alamance Community College Mechatronics Technology Institute	708	CUNY Bronx Community College Chemical and BioEnergy Technology for
508	Allan Hancock College Creating Precision Agriculture and Crop Protection Career Pathways via Industry Partnerships	703	CUNY Bronx Community College Pathways to Geospatial Technology and Careers
617	American Statistical Association Summit on Two-Year College Data Science Curricula	011	CUNY New York City College of Technology Advanced Design and Fabrication of Prosthetic and
105	Asheville-Buncombe Technical Community College Skilled Workers Get Jobs: High School Engagement to Increase Perception of Technology and Engineering Careers	202	Medical Devices Dakota County Technical College Nano-Link: Regional Center for Nanotechnology Education
002	ATE Central	906	Dallas County Community College District,
908	Atlantic Cape Community College Small Unmanned Aircraft Systems Operations and Maintenance Training Project		Brookhaven College Integrating Construction Engineering and Geospatial Technician Projects
616	Bristol Community College New England Water Treatment Training (NEWTT) Program	802	Dordt College Strengthening and Sharing a Holistic Technician Education Program Implemented at a Small, Rural, Private College
411	Brookdale Community College E-MATE 2.0: Building Capacity for Interactive Teaching and Learning	904	Eastern Iowa Community College 3D ImPACT: Integrated Project Approach to College Teaching
901	Cape Cod Community College Massachusetts Credentials and Careers in Aviation	211	Eastern Shore Community College Creating Technical Scholars (CTS): A Model for
502	Chemeketa Community College Creating Career Pathways for Manufacturing Systems Technicians	203	Structured Pathways Edmonds Community College Technician Education in Additive Manufacturing and
410	Clark College		Materials (TEAMM)
800	Clemson University	504	Education Development Center Creating Pathways for Big Data Careers
	CA2VES: Center for Aviation and Automotive Technological Education Using Virtual E-School	004 EvaluATE: Evaluation Resource Center f Technological Education	EvaluATE: Evaluation Resource Center for Advanced Technological Education
707	Cold Spring Harbor Laboratory Biotechnology in American High Schools: Continuing Research	107	Excelsior College Ensuring Workforce Readiness for the Energy and Manufacturing Industries through Educational
505	Collin County Community College CTC: National Convergence Technology Center	201	Simulations
903	Community College of Baltimore County, Essex STEM Core in Central Maryland for Cybersecurity Education	201	TeaM SCoRE Biotechnology: Teachers in Montana Strengthening the Continuity of Rural Education in Biotechnology
405	Community College of Beaver County Process Technology: Flexible Entry/Flexible Exit Curriculum Adaptation	409	Florida Keys Community College Developing a 21st Century Training Program in the Florida Keys for Renewable Alternative Energy
805	Connecticut Pre-Engineering Program, Inc. Engineering Technology Challenge	613	Technology: Wind, Solar, and Tidal Power Florida State College at Jacksonville
700	CORD Necessary Skills Now Network		Enhancing the Instrumentation and Control Technician Program: Instrumentation Acquisition
611	CORD Preparing Technicians for the Future of Work	705	Florida State College at Jacksonville iNoVATE Expansion Project (iNoVATE-X)
608	CUNY Borough of Manhattan Community College Fostering Student Success in Cybersecurity and Information Assurance	311	Florida State University Assessing Educational Pathways for Manufacturing in Rural Communities: An Investigation of New and Existing Programs in Northwest Florida

SHOWCASE II

THURSDAY • OCTOBER 25, 2018

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310	Front Range Community College Biotech Jumpstart: Building Competency and Career Awareness through Scientific Inquiry	006	Madison Area Technical College, City College of San Francisco Scaling Implementation of Stem Cell Technical
404	Fulton-Montgomery Community College FMCC TECH-Lane NSF ATE Project	511	Education: A Collaborative Project Manhattan Area Technical College
809	Galveston College Engineering Technology Instrumentation Project		Critical Environments Engineering Technology Program
603	Harford Community College Developing an Accelerated Cybersecurity Program Aligned with Workforce Needs	005	Mentor-Connect: Leadership Development and Outreach for ATE Miami Dade College
607	Harford Community College Regional Additive Manufacturing Pathways	,0,	Cybersecurity Opportunities and Methods that Promote Access and Student Success
609	Highline Community College International Collegiate Cyber Defense Invitational	206	Miami Dade College, InterAmerican Campus Dade Enterprise Cloud Computing Initiative
003	(ICCDI) Competition HI-TEC – High Impact Technology Exchange Conference	301	Mohawk Valley Community College Microcredentialing for the Unmanned Aerial Systems Workforce
213	Hillsborough Community College	612	Monroe County Community College Advanced Welder Education
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307	Indian Hills Community College MPEC: Midwest Photonics Education Center	701	Mount Hood Community College Cooperative Local Internships as a Novel Innovation
503	Indian River State College LASER-TEC: Southeast Regional Center for Laser and Fiber Optics Education	210	National Alliance for Partnerships in Equity Education (NAPE)
907	Jefferson State Community College Advancing Education in Production Technology	001	Educator's Equity in STEM II National Science Foundation
506	Lake-Sumter State College Enhancing an Energy Technology Associate Degree Program to Meet Employer Needs	204	North Arkansas College Effectively Delivering Networking and Cybersecurity Education in a Rural Environment
403	Lane Community College Independent Learner Energy Education Design Project	305	North Dakota State College of Science North Dakota Welds (NDWelds) Program: Advancing Welding Technician Skills for Students and Training for Educators
702	Laney College BEST: Building Efficiency for a Sustainable Tomorrow Center	513	North Florida Community College Manufacturing Certifications for Rural High School
208	Lewis-Clark State College Technical Career Pathways for Rural Manufacturing:	70/	Enrollment
007	Using a Sector Approach to Support the Northwest Intermountain Metal Manufacturers (NIMM)	/06	Integrating Soft/Entrepreneurial Skills for Success in Cybersecurity
807	Lincoln Land Community College Development of a Competency-Based Education Program in Cybersecurity	007	Northeast Wisconsin Technical College New Approach to Building a Workforce Pipeline for
808	Lone Star College System College District Advanced Programmable Logic Controllers, Robotics, and Networking	615	Northland Community and Technical College Unmanned Aircraft Systems and Geospatial
101	Los Angeles Mission College Increasing the Student Biotech Pipeline		Information Technology Integration into Technician Education

Booth #	Alpha by Institution	Booth #	Alpha by Institution
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412	Oakland Community College Learning Program for CoBots in Advanced	103	Sinclair Community College The STEM Guitar Project
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408	Parkland College	905	Skyline College BioBridge Program
605	to Meet Industry Demand	604	Somerset Community College Additive Manufacturing: Expanding Futures in Appalachia
000	Increasing ATE Career Placement for Students with Autism Spectrum Disorder (ASD): Identification and Dissemination of Best Practices	710	South Louisiana Community College Advancing Technicians in Manufacturing
606	Pellet Productions, Inc. Preventing Digital Dust: Supporting the Creation and Dissemination of High-Quality Videos for	303	Spartanburg Community College Working with Industry to Incorporate Cybersecurity into Networking Programs
309	Advanced Technological Education Pellissippi State Community College	413	Springfield Technical Community College Problem-Based Learning in Advanced Photonics Manufacturing Education
	Project	620	Springfield Technical Community College The Internet of Things Education Project
302	Prince George's Community College National CyberWatch Center	207	St. Johns River State College
512	Raritan Valley Community College Commercial Energy Management Technology (CEM-Tech)	414	Education St. Petersburg College
602	Renton Technical College Next Level Networking Project		Biomedical Engineering Technology – Pathways to Medical Device Manufacturing, Networking, and Cybersecurity
312	Riverside Community College District, Norco Campus NCA: National Center for Supply Chain Automation	313	SUNY College at Buffalo Preparing Future STEM Technicians by Using Assessment as a Teaching and Learning Tool in
304	Riverside Community College District, Norco Campus	205	Course-Based Research at Community Colleges
314	Norco College Apprenticeship Program Rochester Institute of Technology	200	SMART Center: Southeast Maritime and Transportation Center
	DeafTEC: Technological Education Center for Deaf and Hard-of-Hearing Students	308	Truckee Meadows Community College Advanced Manufacturing and Automation Flexible
804	Rowan-Cabarrus Community College Increasing Women in Engineering and Industrial Technologies Programs	704	Delivery Union County College Cyber Service! Interdisciplinary and Experiential Education for Cyber Forensics Technicians
212	Rowan College of Burlington County		
	Comprehensive Integration of Advanced Manufacturing Competencies throughout an Associate's Degree and a Stackable Certificate Curricula	510	University of Alaska Southeast, Juneau Campus Enhancing Aquaculture: Education for Underserved Alaskan Communities to Promote Workforce Development in Fishery Industries
601	SageFox Consulting Group, LLC Exploring Past Investment in Learning through Grant-funded Undergraduate Advanced Technology Education Centers (EPIL OGUE)	401	University of Central Florida OP-TEC: The National Center for Optics and Photonics Education
407	Shoreline Community College Meeting Industry Demands for an	102	University of Hawaii CyberSecure: Extended Cybersecurity Education, Curriculum, and Workforce Development
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SHOWCASE II

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514	University of North Georgia Applying Geospatial and Engineering Technology
104	University of Pittsburgh People with Disabilities Achieving Career Employment (PACE)
009	University of South Florida PathTech LIFE: Constructing a National Survey of Engineering Technology Students through Regional and Statewide Testing
010	University of South Florida PathTech LISTEN: Mixed Methods Longitudinal Investigations of Students in Technician Education
209	University of Wisconsin–Madison Contextualize to Learn: Preparing Faculty Toward Math Contextualization for Student Success in Advanced Technological Education
803	Utah Valley University Integrating Environmentally Improved Photolithography Technology and Virtual Reality into Advanced Nanotechnology Education
501	Valencia Community College Engineering Technology Supply Chain Automation
214	Virginia Space Grant Consortium Geospatial Technician Education – Unmanned Aircraft Systems (GeoTEd-UAS)
621	Washtenaw Community College Training Tomorrow's Technicians in Lightweight Materials: Properties, Optimization, and Manufacturing Processes
902	Wake Technical Community College Robotics Awake: Promoting the Diffusion of Innovation through Curriculum Development and a Technician Training Community College Extension Model
509	West Hills Community College Welding Education Long-Distance Community Outreach
709	Westchester Community College Photonics and Laser Project
614	Western Technical College Automation Workforce Development through Aligned Industry Partnerships and Training (Project ADAPT)

Thursday, October 25

ATE Centers and Projects

3:45 – 6:00 pm • Exhibit Hall

Booth # 001 National Science Foundation

The National Science Foundation (NSF) is an independent federal agency created by Congress in 1950 to promote the progress of science; to advance the national health, prosperity, and welfare; and to secure the national defense. NSF competitively awards grants for research and education in the science, technology, engineering, and mathematics fields.

Booth # 002 ATE Central

ATE Central provides services, tools, and an online portal that support, amplify, and highlight the impacts of the ATE community and showcase the valuable curricula, resources, events, websites, and media created by ATE grantees. It also includes a resource archive and comprehensive database of project and center information that encourages use of ATE resources and promotes sustainability of project and center deliverables.

Booth # 003

HI-TEC – High Impact Technology Exchange Conference

HI-TEC is a national conference on advanced technological education where technical educators, counselors, industry professionals, and technicians can update their knowledge and skills. Charged with educating America's technical workforce, the event focuses on the preparation needed by the existing and future workforce for companies in the high-tech sectors that drive our nation's economy. HI-TEC uniquely explores the convergence of scientific disciplines and advanced technologies. Join us July 22-25 in St. Louis, MO for HI-TEC 2019.

Booth # 004

EvaluATE – Evaluation Resource Center for Advanced Technological Education

EvaluATE is the evaluation support center for the National Science Foundation's Advanced Technological Education program. The center provide webinars, resource materials, newsletters, workshops, and opportunities for ATE community members to engage around issues related to evaluation in the pursuit of excellence in technical education.

Booth # 005

Mentor-Connect – Leadership Development and Outreach for ATE

Mentor-Connect is designed to fill a void for the ATE program; address the fact that there are those in the nation's community colleges who have never been awarded funding from the NSF ATE program; diversify the ATE program overall; better manage a rapidly growing number of requests received by program officers related to grant proposal development and project management; and develop grant writing skills among STEM faculty who lack sufficient grant personnel at their institutions.

Booth # 006

Madison Area Technical College, City College of San Francisco Scaling Implementation of Stem Cell Technical Education: A Collaborative Project

This collaborative project is designed to (1) refine existing materials for an expanded group of academic audiences; (2) develop additional instructional modules for college-level programs; (3) create and disseminate stem cell biology curriculum for grades 8-12; and (4) provide professional development workshops for educators in the area of stem cell technologies.

Booth # 007

Northeast Wisconsin Technical College

New Approach to Building a Workforce Pipeline for Electromechanical Technician Education

Northeast Wisconsin Technical College is collaborating with the Northeast Wisconsin Manufacturing Alliance to help those already in electro-mechanical careers obtain new credentials and increase the number of skilled workers to meet industry needs. Recruitment will take place at manufacturing companies and cohorts will be developed. LinC courses will encourage students to continue to further their credentials obtained.

Booth # 008

Norwalk Community College Recruitment and Retention of Women in Engineering and Engineering Technology

A diverse workforce is essential for the global competitiveness of U.S. industries. To answer this need, Norwalk Community College seeks to increase the enrollment and the retention of women in its Engineering and Engineering Technology program. The booth will present the project's findings, strategies, and samples of material devised for this project.

Booth # 009

University of South Florida PathTech LIFE: Constructing a National Survey of Engineering Technology Students through Regional and Statewide Testing

PathTech LIFE is a national survey administered to 3,216 students enrolled in technician education AS/ AAS degree or certificate programs or coursework in 96 participating community colleges. PathTech LIFE seeks to understand how learning, interests, family, and employment influence matriculation and progress toward completing coursework, certificates, and degrees among students from various backgrounds and stages of life.

Booth # 010

University of South Florida PathTech LISTEN: Mixed Methods Longitudinal Investigations of Students in Technician Education

PathTech LISTEN advances knowledge of pathways into and out of technician education through longitudinal interviews and a follow-up survey of PathTech LIFE survey respondents. This project attempts to better understand (1) factors that motivated students to pursue technician education, (2) how students faced academic and personal challenges while enrolled, and (3) post-enrollment educational and employment outcomes.

Booth # 011

CUNY New York City College of Technology

Advanced Design and Fabrication of Prosthetic and Medical Devices

This showcase will display samples of medical and prosthetic devices designed and fabricated by students and describe the fabrication process in some state-ofthe-art equipment.

Booth # 101

Los Angeles Mission College Increasing the Student Biotech Pipeline

The goal of this project is to develop new academic pathways in biotechnology leading to stackable certificates and an AS degree. These programs will prepare students for jobs in biotechnology. The focus of this showcase is on applying project-based learning in biotechnology classes as well as high school workshops.

Booth # 102

University of Hawaii CyberSecure: Extended Cybersecurity Education, Curriculum, and Workforce Development

The NSF ATE CyberSecure project will focus on activities that target underrepresented minorities and women, across a variety of programs and disciplines. In particular, the project will create new cybersecurity curricula for the Internet of Things (IoT) and for the accounting, healthcare, and hospitality and tourism industries, which are important to Hawaii's economy.

Booth # 103

Sinclair Community College The STEM Guitar Project

The STEM Guitar project engages students in an integrated learning system emphasizing the how and why of the guitar, using experiential learning but still providing purposeful links to the academics of math, science, and engineering technology. The 21st century workforce requires knowledge and competencies in STEM skills to contribute to a strong economy and to be competitive at the international level.

Booth # 104

University of Pittsburgh People with Disabilities Achieving Career Employment (PACE)

PACE develops advanced manufacturing (AM) training/ employment opportunities for veterans and people with disabilities (V/PwD) (i.e., orthopedic, neurological, cognitive impairments). Working with industry, academic, and advocacy experts, PACE is designing, developing, and delivering didactic and experiential training curricula tailored for V/ PwD and providing guidance to academic institutions and industry on making their own AM programs accommodating to V/PwD.

Booth # 105

Asheville-Buncombe Technical Community College

Skilled Workers Get Jobs: High School Engagement to Increase Perception of Technology and Engineering Careers

Building on successful implementation strategies from prior ATE projects, this project focuses on area high schools. The project seeks to engage students, parents/guardians, and high school personnel to: (1) improve the understanding and perception of technology and engineering careers and educational opportunities in targeted programs, and (2) increase the number and diversity of technicians available for the workforce.

Booth # 106

Palomar College Unmanned Aircraft System Operations Technician Education Program (UASTEP)

UASTEP is a comprehensive program that prepares students to become licensed commercial unmanned aircraft system (or drone) operators and entrepreneurs. This showcase provides an overview of the curriculum and programs developed by the UASTEP project team, the outreach activities and impacts of the project to date, and the educational pathways that were created for high school and community college students.

Booth # 107

Excelsior College Ensuring Workforce Readiness for the Energy and Manufacturing Industries through Educational Simulations

Excelsior College and Polk State College offer two-year technical students comprehensive preparation for entering the skilled trades in the energy and manufacturing sectors. Our institutions are united around a goal to provide virtual education, and to meet the needs of adult working students. The project proposes building out the exceptional learning component of industry requirements for earning certificates in a virtual environment.

Booth # 201

Flathead Valley Community College

TeaM SCoRE Biotechnology: Teachers in Montana Strengthening the Continuity of Rural Education in Biotechnology

The TeaM SCoRE Biotechnology project provides secondary educators in Montana with professional development workshops in biotechnology and the support for implementing new laboratory curriculum. This showcase will demonstrate how high school teachers are building their students' awareness of biotechnology careers through engaging project-based laboratory activities.

Booth # 202

Dakota County Technical College Nano-Link: Regional Center for Nanotechnology Education

Nano-Link promotes nanotechnology education at multiple grade levels with comprehensive resources, products, and services for students, educators, community, and industry partners. Nano-Link teams with programs and schools across the United States to ensure the need for a skilled nano workforce is met.

Booth # 203

Edmonds Community College Technician Education in Additive Manufacturing and Materials (TEAMM)

As 3D printers increase their capability of utilizing multiple materials, it is imperative technicians understand these material's properties. TEAMM is forging a new collaborative network of stakeholders that addresses the identification and adaption of skills standards that keeps pace with advances in research and development. TEAMM supports utilization of social networking technologies, proactive expansion of key stakeholders, and professional development.

Booth # 204

North Arkansas College Effectively Delivering Networking and Cybersecurity Education in a Rural Environment

North Arkansas College is infusing its IT/network systems program with cybersecurity components and adding alternate modes of course delivery to increase the number of skilled technicians who are trained in network technology with a security focus. This showcase will focus on the college's first semester of delivery from the classes in Harrison to students at our remote Carroll County Center site.

Booth # 205

Tidewater Community College SMART Center: Southeast Maritime and Transportation Center

The SMART Center is proud to be a National Science Foundation ATE Center. We are helping transform the future of the maritime and transportation industry with a 21st century trained workforce. We provide students, educators, and employers with career awareness and pathways tools, classroom resources, workshops, and connections with industry leaders.

Booth # 206

Miami Dade College, InterAmerican Campus Dade Enterprise Cloud Computing Initiative

Partnering with Amazon Web Services, Miami Dade College will offer a new educational pathway in the rapidly growing field of cloud computing, summer boot camps to build a K-16 pipeline, and professional cloud certification training to technology faculty. This project aims to increase the number of certified cloud computing technicians from underrepresented minority groups to meet workforce needs.

Booth # 207

St. Johns River State College Enhancing Critical Reasoning in Computer Education

The project draws from a problembased learning inquiry model to integrate critical thinking skills in current computer science curriculum at St. Johns River State College, thus increasing practical knowledge and work readiness. Students develop technical skills and creative abilities to innovate, adapt, and thrive in the industry.

Booth # 208

Lewis-Clark State College Technical Career Pathways for Rural Manufacturing: Using a Sector Approach to Support the Northwest Intermountain Metal Manufacturers (NIMM)

Technical career pathways works with high school students to introduce them to, and prepare them for careers in the metal manufacturing industry in the inland Pacific Northwest.

Booth # 209

University of Wisconsin–Madison Contextualize to Learn: Preparing Faculty toward Math Contextualization for Student Success in Advanced Technological Education

This targeted research focuses on how faculty development around math contextualization translates into ATE student success in math. In year two, faculty development continues, and research is conducted using classroom observations, surveys, and interviews. Our findings illuminate faculty engagement with math contextualization and the resulting math learning experiences among ATE students.

Booth # 210

National Alliance for Partnerships in Equity (NAPE) Educators' Equity in STEM II

Educators' Equity in STEM II provided high-quality professional development using NAPE's Micromessaging Program with teams of STEM/CTE instructors from 15 community and technical colleges from around the country in 2017–2018 and 2018–2019 to build educators' capacity to implement effective classroom solutions to broaden the participation of women, students of color, and students with disabilities in STEM career and technical education.

Booth # 211

Eastern Shore Community College Creating Technical Scholars (CTS): A Model for Structured Pathways

CTS creates a seamless transition pathway from secondary to postsecondary education and employment in high-tech positions through development of a Technical Studies AAS degree. Local employers, school districts, and four-year institutions create flexible career pathways with an emphasis on serving underrepresented populations. This structured pathway will allow trades classes to be efficiently applied to a two-year degree.

Booth # 212

Rowan College of Burlington County Comprehensive Integration of Advanced Manufacturing Competencies throughout an Associate's Degree and a Stackable Certificate Curricula

The overarching goal of the project is to align the degree program requirements to the needs of highgrowth manufacturing industries. Students will benefit from clearly articulated and cost-effective pathways toward achieving a 3+1 baccalaureate degree with a fouryear institution partner. Required skills are identified and emphasized through curriculum development, industry collaboration, and creation of an advisory board.

Booth # 213

Hillsborough Community College FLATE: Florida's Advanced Technological Education Center of Excellence

FLATE leads the development and implementation of its robust industry-aligned, credential-based technical manufacturing education system that supports Florida's industry. Since 2004, FLATE has been frequently recognized nationally and internationally for its best-in-class and innovative professional development, curriculum and outreach/ recruitment solutions. Focusing on building a strong and sustainable community inclusive of all Florida's manufacturing stakeholders drives FLATE to excellence and innovation.
Virginia Space Grant Consortium Geospatial Technician Education – Unmmaned Aircraft Systems (GeoTEd-UAS)

GeoTEd-UAS is providing employers with well trained small unmanned aircraft systems (sUAS) operator technicians. Thomas Nelson and Mountain Empire Community Colleges, Virginia Space Grant Consortium, and Virginia Tech are partners. GeoTEd-UAS includes four goals: (1) DACUM for a small UAS operator technician; (2) sUAS courses and pathways; (3) faculty professional development and mentoring; and (4) outreach for high school students.

Booth # 301

Mohawk Valley Community College Microcredentialing for the Unmanned Aerial Systems Workforce (MUASW)

The MUASW project is developing short-term sUAS training programs to rapidly train technicians in sUAS manufacturing, electronics, and data analysis and sUAS end users in the incorporation of sUAS technologies into emergency services and agriculture/infrastructure inspection. The project will work closely with industry employers to create five micro-credentials, three occupational advancement workshops, and two new AAS degrees.

Booth # 302

Prince George's Community College National CyberWatch Center

The National CyberWatch Center is a collaboration of more than 300+ academic institutions, commercial, and government partners. Its mission is to lead collaborative efforts to advance cybersecurity education and strengthen the national cybersecurity workforce. CyberWatch is focused on growing program and faculty capabilities based on models of excellence, promoting the cybersecurity profession, expanding career pathways for students, and advancing research in cybersecurity.

Booth # 303

Spartanburg Community College (SCC) Working with Industry to Incorporate Cybersecurity into Networking Programs

This project at Spartanburg Community College is designed to address the shortage of skilled technicians trained in network/ cybersecurity technology in upstate South Carolina. A business and industry leadership team representing regional industry employers will co-lead this process. This project will conduct faculty training, course development, and targeted recruitment of veterans, high school Cyber Patriot team members, and undecided majors at SCC.

Booth # 304

Riverside Community College District, Norco Campus Norco College Apprenticeship Program

The Norco College Apprenticeship Program seeks to fully integrate the apprenticeship model (extensive work-based learning combined with education and training) into the state's higher education system by the contributions of administrators and faculty working directly with one another and the state's apprenticeship and workforce agencies.

Booth # 305

North Dakota State College of Science

North Dakota Welds (NDWelds) Program: Advancing Welding Technician Skills for Students and Training for Educators

NDWelds will enhance welding technician skills for secondary school students, two-year college students, secondary school teachers, and two-year college faculty members. The project objectives will be accomplished through the alignment of welding curriculum, focused outreach activities to include welding camps for girls, and training and recruitment of CTE instructors.

Booth # 306

Sinclair Community College Building an Academic Pathway for the Aerial Sensing Data Analyst

Aerial Sensing Data Analysts work with various data types including visual and multispectral/ hyperspectral imagery and video, LiDAR, RADAR, acoustic, and CBRNE sources. Analysts are in demand supporting both traditional and unmanned aircraft operations. This project provides opportunities for traditionally underrepresented populations, veterans, and the incumbent workforce to increase their preparedness for entrylevel employment in the growing interdisciplinary fields of UAS/GIS.

Booth # 307

Indian Hills Community College MPEC: Midwest Photonics Education Center

MPEC supports the expanding advanced manufacturing photonics-related industry. Working with a network of educational institutions and business partners in Midwestern states, Indian Hills Community College is leading an effort to increase the quality and number of trained photonics technicians. MPEC provides professional development opportunities, delivers photonics training, creates educational partnerships, and assists institutions in curriculum and laboratory development.

Booth # 308

Truckee Meadows Community College Advanced Manufacturing and Automation Flexible Delivery

The Advanced Manufacturing and Automation Flexible Delivery project will address the critical need for competent technicians in manufacturing fields within Western Nevada by providing a flexible delivery method for the Advanced Manufacturing program. The goal of this project is to provide our technicians with appropriate curriculum, easier access to course materials online, and a lab scheduling system.

Booth # 309

Pellissippi State Community College Water/Wastewater Certified Operator Education Project

In partnership with local utility districts, Pellissippi State Community College is developing a new Environmental Science Technology AAS degree. Graduates will be eligible for employment in regional water quality and wastewater treatment laboratories and plant facilities. Graduates will also be able to sit for state certifications more quickly than workers who have been trained on the job.

Booth # 310

Front Range Community College (FRCC) Biotech Jumpstart: Building Competency and Career Awareness through Scientific Inquiry

The goal of the project is to increase the local biotech workforce. Two inquiry-based biotech labs will be developed for high schools and community colleges science classes to build students' biotech skills. FRCC students will serve as learning assistants to engage students' learning in the inquiry labs. Career exploration activities will be organized to attract students to biotech careers.

Booth # 311

Florida State University Assessing Educational Pathways for Manufacturing in Rural Communities: An Investigation of New and Existing Programs in Northwest Florida

Building on prior research on career pathways in information technologies, this targeted research project investigates the alignment of curriculum, employer needs, and new employee experience in advanced manufacturing and tests the usefulness of tools and processes developed to assess such alignment in rural institutions.

Booth # 312

Riverside Community College District, Norco Campus *SCA: National Center for Supply Chain Automation*

The technologies used to support the national supply chain are becoming more advanced every day. These new technologies are being implemented to increase production, decrease costs, improve accuracy, and meet the needs of the e-commerce revolution. Ample workforce to maintain these new technologies does not currently exist.

Booth # 313

SUNY College at Buffalo Preparing Future STEM Technicians by Using Assessment as a Teaching and Learning Tool in Course-Based Research at Community Colleges

This project is developing and testing a method for evaluating course-based research in technician education programs. It builds on "EvaluateUR," an evidencebased method used to measure a broad range of outcomes that include both content knowledge and outcomes important in the workplace. We seek partners interested in piloting the method in their courses.

Booth # 314

Rochester Institute of Technology DeafTEC: Technological Education Center for Deaf and Hard-of-Hearing Students

DeafTEC is developing partnerships among high schools, community colleges, and industry to improve access to STEM education and employment for deaf and hardof-hearing (deaf/hh) students through professional development and a national dual credit program. DeafTEC is building a comprehensive collection of resources on teaching deaf/hh students including student veterans with hearing loss in STEM-related programs and for employers hiring deaf/hh individuals.

Booth # 401

University of Central Florida OP-TEC: The National Center for Optics and Photonics Education

OP-TEC works with secondary, postsecondary, industry, and professional society partners to increase and sustain our nation's capacity to produce photonics, optics, and laser technicians. OP-TEC focuses on curriculum and faculty development, college enlistment, and technical support for infusing photonics into existing AAS programs where photonics is an enabling technology.

Montana State University The Photonics Technology Education Project

Gallatin College of Montana State University is developing a Photonics Technology AAS program by utilizing industry and fouryear partnerships, and leveraging relationships with the Montana Photonics Industry Alliance.

Booth # 403

Lane Community College Independent Learner Energy Education Design project

The Independent Learner Energy Education Design Project is an innovative method of using energy industry employees as field-work mentors for a fully online two-year degree in energy management. Students will work with fieldwork mentors to complete course hands-on assignments to satisfy course requirements.

Booth # 404

Fulton-Montgomery Community College

FMCC TECH-Lane NSF ATE Project

This project is creating a career and technical education pathway to develop the middle skills workforce. The project allows high school students in a new, innovative program to complete the first year of a two-year Electrical Technology AAS program. Students are able to continue one more year and enter the workforce as a technician a year early.

Booth # 405

Community College of Beaver County (CCBC)

Process Technology: Flexible Entry/ Flexible Exit Curriculum Adaptation

CCBC will enhance a regionally distinctive Process Technology program by converting a traditional lecture/lab format to a flexible entry/flexible exit delivery format to increase student accessibility and the number of credentialed process technicians in the tri-state region (PA, OH, WV). This project will adapt best practices from a successful model developed by Polk State College with a prior NSF award.

Booth # 406

Monterey Peninsula College MATE: Marine Advanced Technology Education Support Center

The MATE Center uses marine technology to improve STEM education and the workforce through: underwater robotics competitions; at-sea internships; professional development for educators focusing on marine engineering and technology; SeaMATE—a student-run online store selling underwater robotics kits and textbooks; workforce studies; and partnering with like-minded educational institutions, employers, and professional societies.

Booth # 407

Shoreline Community College Meeting Industry Demands for an Immunobiotechnology-Capable Workforce through College and Secondary Technician Education

Immunobiotechnology includes the development of diagnostics and drugs derived from the immune system. Enhanced educational experiences for two-year college degree and certificate-seeking students to meet industry needs includes independent research projects and new courses in quality systems, drug development, cancer biology, and immunoinformatics. The project also provides immunobiotechnology curricula for secondary science educators to recruit the next generation of scientists.

Booth # 408

Parkland College Unmanned Aerial Systems Technology Curriculum to Meet Industry Demand

Parkland College is developing Unmanned Aircraft Systems (UAS) courses to meet the growing need of a rapidly expanding sector. Outreach will be directed towards high schools to help implement the use of UAS in the classroom.

Booth # 409

Florida Keys Community College (FKCC)

Developing a 21st Century Training Program in the Florida Keys for Renewable Alternative Energy Technology: Wind, Solar, and Tidal Power

At no time in human history has the need for clean renewable energy been more critical. Located in one of the sunniest and windiest cities in Florida, and surrounded by vast oceanic forces, FKCC developed an AS degree for engineering technology focused on career pathways for solar, wind, and ocean power to help train the 21st century workforce for renewable energy.

Booth # 410

Clark College Rural Access Mechatronics Program (RAMP)

RAMP has been designed to hybridize our fundamental courses to reach our rural community members who otherwise cannot get to the college on a daily basis. Our first year of the project was dedicated to training faculty, and the last year has focused on training students who might not otherwise get the hands-on skills this program offers.

Booth # 411

Brookdale Community College *E-MATE 2.0: Building Capacity for Interactive Teaching and Learning*

E-MATE 2.0 is a project focused on building interactive instructional materials in four STEM disciplines: chemistry, environmental science, networking/cybersecurity, and physics. A team of subject matter experts (SMEs) and instructional designers work in each area to identify topics that students typically struggle with—so-called "pain points"—and then storyboard ideas, and build, test, and refine interactive content.

Booth # 412

Oakland Community College Learning Program for CoBots in Advanced Manufacturing Systems

Oakland Community College and Wayne State University have: collaborative robot projects (CoBots) involving robots that can safely work alongside human workers. This project aims to develop an advanced, industrydriven, hands-on learning environment and educational curriculum focused on collaborative robotics and integration of the technology into advanced manufacturing systems. Eight modules have been developed and integrated in engineering and engineering technology programs.

Booth # 413

Springfield Technical Community College Problem-Based Learning in Advanced Photonics Manufacturing Education

Springfield Technical Community College, in partnership with MIT's AIM Photonics Academy, the New England Board of Higher Education, the NSF ATE Regional Center for Next Generation Manufacturing, and photonics industry partners is creating eight new online multimedia problem-based learning (PBL) modules focused on advanced photonics manufacturing. The project builds on three prior NSF ATE-funded PBL projects of NEBHE.

Booth # 414

St. Petersburg College Biomedical Engineering Technology – Pathways to Medical Device Manufacturing, Networking, and Cybersecurity

Biomedical engineering technology (BMET) at St. Petersburg College is bridging the gap between medical device technology and computer networking and cybersecurity. This showcase will show the multiple academic pathways being developed for BMET students and credential badging.

Booth # 501

Valencia Community College Engineering Technology Supply Chain Automation

This grant will train technicians to work in automated warehouse operations. In addition, a key objective of this grant will be to develop a high school career pathway program for advanced manufacturing that includes an emphasis on supply chain automation. To that end, the grant will also fund high school instructor training in the areas of mechatronics and automated warehouse operations.

Booth # 502

Chemeketa Community College Creating Career Pathways for Manufacturing Systems Technicians

Chemeketa Community College is developing a curriculum for food and beverage processors and processing equipment manufacturers utilizing the DACUM process. This may lead to a new industry-driven education program for manufacturing systems technicians though the development of stackable certificates embedded in a two-year AS degree, with clear pathways to employment.

Booth # 503

Indian River State College LASER-TEC: Southeast Regional Center for Laser and Fiber Optics Education

LASER-TEC's mission is to develop and sustain a pipeline of qualified laser and fiber optics technicians to meet the industry needs in the United States. The center offers funding opportunities, advisory support, and resources for colleges interested in offering courses or a program in lasers or fiber optics.

Booth # 504

Education Development Center (EDC) Creating Pathways for Big Data Careers

Partners, EDC, Bunker Hill CC (MA), Johnson County CC (KS), Sinclair CC (OH), and Normandale CC (MN) are developing courses/programs focusing on middle-skilled data workers. Products to share include: (1) a profile identifying the major duties and tasks performed by middle-skilled data practitioners; (2) performance-based rubrics to guide assessment; (3) a gap analysis tool; and (4) stackable credentials model.

Collin County Community College CTC: National Convergence Technology Center

The National CTC mentors colleges through a "community of practice" that provides networking and resources; engages national industry leaders to help strengthen curriculum and validate job skills; delivers free faculty training on cutting-edge IT topics; disseminates strategies to recruit and retain underserved student populations; and supports seven regional hubs of high schools, community colleges, and universities to develop 2+2+2 pathways.

Booth # 506

Lake-Sumter State College Enhancing an Energy Technology Associate Degree Program to Meet Employer Needs

Lake-Sumter State College is working to meet employer needs in the electric utility industry. The Energy Technology program with a specialization in substation/relay technology will serve as an outreach to underserved populations. This is a model recruitment program to attract students from diverse populations to the Energy Technology Manufacturing AS degree program.

Booth # 507

Macomb Community College CAAT: Resource Center for Advanced Automotive Technology

CAAT creates curriculum in advanced automotive technology areas, including connected and autonomous vehicles, which is free for downloading at www. autocaat.org. CAAT also provides professional development opportunities through its annual conference and conducts numerous STEM activities and outreach events to middle and high school students.

Booth # 508

Allan Hancock College Creating Precision Agriculture and Crop Protection Career Pathways via Industry Partnerships

Through local agricultural industry partnerships, Allan Hancock College will provide advanced crop science studies to give students an advantage in workforce readiness. The creation of two career pathways, precision agriculture and crop protection, will offer training and support for future employment or for advancement in a current agricultural position.

Booth # 509

West Hills Community College Welding Education Long-Distance Community Outreach (WELDCO)

WELDCO is working toward the development of technician skills through a distance education program. If technical skills such as welding can be effectively taught using online resources and simulators, disadvantaged areas such as the California Central Valley will benefit.

Booth # 510

University of Alaska Southeast, Juneau Campus

Enhancing Aquaculture: Education for Underserved Alaskan Communities to Promote Workforce Development in Fishery Industries

The Alaska Salmon Culture Semester is meant to give students the background and hands-on skills to work in the Alaska aquaculture industry in just 3.5 months. Different from most four-year academic programs, curricula was created with industry input, will be taught in functioning hatcheries, and will give students the skills base they need to expedite transition directly into the workforce.

Booth # 511

Manhattan Area Technical College Critical Environments Engineering Technology Program (CEET)

CEET is working to develop a certificate program and an associate degree program to train students of various disciplines to work in building spaces that have critical environments (e.g., laboratories, medical facilities, and production facilities with special environmental requirements). This showcase will focus on the initial vision for the CEET curriculum and program.

Booth # 512

Raritan Valley Community College (RVCC) Commercial Energy Management Technology (CEM-Tech)

CEM-Tech is a three-year project with an aim to address a deficiency identified by government and industry, which is a severe nationwide shortage of trained commercial building technicians and programs in the areas of energy auditing, automation, commissioning, and retro-commissioning. RVCC has developed industry aligned curriculum and state-of-the-art laboratories towards certificate and AAS degrees.

Booth # 513

North Florida Community College Manufacturing Certifications for Rural High School Students through Community College Dual Enrollment

North Florida Community College is obtaining industry certifications through the Manufacturing Skills Standards Council for dual-enrolled high school students in rural underserved counties of North Florida. Students learn through both online curriculum offered through ToolingU and hands-on training in the labs of the program. Eleven local industries have partnered with the program.

Booth # 514

University of North Georgia Applying Geospatial and Engineering Technology

The project goal is to improve the education of engineering and science technicians at the undergraduate level by preparing students to succeed in engineering and science technology professions through associate degree and certificate programs in geospatial and engineering technology. Curriculum development, workforce development, and dissemination of products and processes are objectives of the project.

Booth # 601

SageFox Consulting Group, LLC Exploring Past Investment in Learning through Grant Funded Undergraduate Advanced Technology Education Centers (EPILOGUE)

What is the legacy of ATE centers post-funding? The EPILOGUE project will explore this question over the next two years by investigating which centerdeveloped ideas, innovations, knowledge, and products continue to evolve, are utilized, and continue to influence technician education programs post-funding. The lessons learned will hopefully address questions current centers have for their own plans for scaling and sustainability.

Booth # 602

Renton Technical College Next Level Networking Project

The Next Level Networking Project provided for the development of a new Bachelor of Applied Science (BAS) degree program in Computer Network Architecture. The first of its kind in Washington State, this program has become a leader in 2+2 education and articulation with high schools and university master's degree programs.

Booth # 603

Harford Community College Developing an Accelerated Cybersecurity Program Aligned with Workforce Needs

Harford Community College will address the demand for qualified cybersecurity technicians. The program's objectives are: (1) to develop an accelerated, 18-month Information Assurance and Cybersecurity AAS degree program that produces at least 40 graduates; (2) to adapt two of the program's courses to a competency-based format; and (3) to determine whether a competency-based approach is more effective than an outcomes-based approach.

Booth # 604

Somerset Community College Additive Manufacturing: Expanding Futures in Appalachia

This project is a model for the integration of additive manufacturing into industry and the creation of a need for technicians. Somerset Community College has developed enhanced additive applications, educated over 600 students, generated case studies, facilitated savings for companies, and formed best practices approaches to interest resistant businesses in integrating cutting-edge technologies.

Booth # 605

Pellet Productions, Inc. Increasing ATE Career Placement for Students with Autism Spectrum Disorder (ASD): Identification and Dissemination of Best Practices

Showcasing best practices from community colleges across the country, Stairway to STEM will produce online instructional content for educators seeking to create an inclusive classroom experience for students with Autism Spectrum Disorder (ASD). Awareness and recruitment videos will present the college pathways and technician career opportunities for students with ASD in STEM.

Booth # 606

Pellet Productions, Inc. Preventing Digital Dust: Supporting the Creation and Dissemination of High-Quality Videos for Advanced Technological Education

This project will instruct ATE grantees on how to produce engaging educational content that impacts their target audiences through a five-part online course. Plus, it provides a redesigned, searchable ATETV.org website that allows uploads for disseminating new and existing technician education content and helps prevent valuable content from becoming digital dust.

Booth # 607

Harford Community College Regional Additive Manufacturing Pathways (RAMP)

RAMP is a partnership of public high schools, the Aberdeen Proving Ground, the National Resource Center for Materials Technology Education (MatEdU), and industry. RAMP addresses the need of educated technicians in the additive manufacturing field. RAMP will develop and sustain a pipeline of AM technicians through outreach to rural secondary school students, professional development for faculty, and AM certificate programs.

Booth # 608

CUNY Borough of Manhattan Community College Fostering Student Success in Cybersecurity and Information Assurance

The project will create a cybersecurity concentration in each of the AAS degree programs of Computer Network Technology and Computer Information Systems. Working with high schools, fouryear colleges, ATE centers, and industry, the project will adapt and implement educational materials and pedagogical strategies to expand opportunities for minority and underrepresented students to pursue careers in cybersecurity and information assurance.

Highline Community College International Collegiate Cyber Defense Invitational (ICCDI) Competition

The International Collegiate Cyber Defense Invitational was created as a Red Team/Blue Team event to connect future cyber defenders on a global level. It is unique in that students earn points for collaboration and helping other teams. In 2018, it was hosted faceto-face in two locations with a third hosting remote participants across 14 time zones.

Booth # 610

University of Hawaii, Honolulu Community College Development of a Data Analytics Education Pathway

Honolulu Community College is expanding its CAE cybersecurity program to create the first ITC pathway to the University of Hawaii's flagship campus by articulating a new data analytics certificate program with the university's Shidler College of Business. Inaugural K-20 faculty cohort training will be conducted in 2019 utilizing the first of five prototype data analytics education courses, building on the ODI profile of the data practitioner.

Booth # 611 CORD

Preparing Technicians for the Future of Work

Preparing Technicians for the Future of Work is an initiative designed to facilitate regional collaborations between industry partners and community college educators within and across disciplines—that will result in transformative changes in associate degree programs to better prepare U.S. technicians for the future workplace.

Booth # 612

Monroe County Community College

Advanced Welder Education

This project is developing curriculum conforming to Advanced Level Welder (Level 2), QC 11 standards, revised as of August 2017, as defined by American Welding Society SENSE program. The project is partnering with local high school career and technical education program instructors to help them implement Entry Level Welder (Level 1) QC 10, standards at the high school level with a pathway to college.

Booth # 613

Florida State College at Jacksonville (FSCJ) Enhancing the Instrumentation and Control Technician Program: Instrumentation Acquisition

FSCJ's Foundation was actively involved in identifying, and recruiting local companies interested in developing an expanded Instrumentation and Control track to fill skills gaps within incumbent workers as well as prepare new graduates with skill sets to enter into the instrumentation and control industry.

Booth # 614

Western Technical College Automation Workforce Development through Aligned Industry Partnerships and Training – Project ADAPT

Project ADAPT is a mechatronics training program intended to mitigate workforce shortages by producing skilled graduates who will increase and sustain advanced industrial automation processes. Success will come from engaging industry, secondary, and postsecondary students and teachers. Curriculum will be identified, developed, and dual credit will be offered to local secondary schools through a mobile lab, creating a pipeline to postsecondary institutions.

Booth # 615

Northland Community & Technical College Unmanned Aircraft Systems and Geospatial Information Technology Integration into Technician Education

Design a collaborative model for educational institutions to cultivate the necessary advances in knowledge to address the rapid improvements in GIT and UAS technology. This collaborative model will enhance technician education, form new educational pathways and partnerships, increase resources available to faculty, and lead to a highly skilled workforce in GIT and UAS technologies.

Booth # 616

Bristol Community College New England Water Treatment Training (NEWTT) Program

NEWTT project's goal is to prepare the next generation of Drinking Water and Wastewater Operators through curriculum development and distribution, construction of a model laboratory training facility, development of an educational pipeline from high school to careers, recruitment of underrepresented populations and veterans, and the lending of equipment to help develop new programs.

Booth # 617

American Statistical Association Summit on Two-Year College Data Science Curricula

In May 2018, a summit was held to discuss the feasibility and challenges associated with developing data science programs at two-year colleges. Summit discussions informed curriculum recommendations that are being developed for three types of programs—transfer to a fouryear program, direct to workforce program, and a certificate program designed for those already in the workplace. Stop by to discuss preliminary recommendations.

Booth # 618

Forsyth Technical Community College Skills for Biomedical Emerging Technology Applications

This project focuses on advanced technological education around convergent technology platforms supporting product research, and development and/or manufacturing at the interface between biomedical devices and tissue engineering. The objectives are to (1) define BETA core skills for national use by educators, researchers and employers; and (2) connect BETA competencies to the emergence of technician specialists with a new, higher-level set of specialized core skills.

Booth # 619

Howard Community College, Carroll Community College Collaborative Project: Addressing the Need for Innovative Education of Audio Visual Specialists

Audio visual system specialists are needed to support the communication needs for businesses and organizations. This innovative program fulfills unmet industry need with comprehensive and transformative training that is pedagogically engineered to prepare students to support educational, conference, corporate, and entertainment events at venues with integrated, high-technology communication needs.

Booth # 620

Springfield Technical Community College The Internet of Things Education Project (IoT)

This project will develop curricula for an IoT systems field technician certificate, provide professional development opportunities to faculty, and expose students to IoTbased STEM applications during summer workshops. Targeted IoT application areas will include: industrial IoT, e-healthcare, autonomous vehicle technology, and the overarching topic of IoT cybersecurity.

Booth # 621

Washtenaw Community College Training Tomorrow's Technicians in Lightweight Materials: Properties, Optimization, and Manufacturing Processes

Over the last two years, Washtenaw Community College has, in partnership with Wayne State University and Square One Education Network, provided education and training to both K-12 and community college instructors on the power of light weighting. Our showcase will highlight the application of these trainings in the development of a lighter and smarter *Go Kart*.

Booth # 700 CORD

Necessary Skills Now Network

The Necessary Skills Now Network, an ATE Coordination Network, aims to advance educators and employers' awareness of, access to, and ability to collaborate around employability skills development in support of technician education across the STEM disciplines. Launching in October, the Network will create a community of practice, faculty development workshops and courses, and a repository of teaching resources.

Booth # 701

Mount Hood Community College Cooperative Local Internships as a Novel Innovation in Cybersecurity

Last year the Oregon SBDC served 6,000 small businesses and the majority have either no cybersecurity protection at all or have only default levels of protection provided by computer vendors. This creates a vast platform from which hackers can harvest devices and data. The program delivers cybersecurity training, advising, and resources to promote cyber awareness for small businesses.

Booth # 702

Laney College BEST: Building Efficiency for a Sustainable Tomorrow Center

BEST continues to advance the cause of building operations and technicians through multiple projects. This showcase will highlight development of a High Performance Building Operations Professional certification; hands-on activities for building automation, heating and air conditioning, energy management; and career awareness/marketing resources.

Booth # 703

CUNY Bronx Community College Pathways to Geospatial Technology and Careers

The program is fostering education, research, and workforce skills by offering a series of intuitive yearround workshops that promote spatial thinking, cutting-edge research internships in geospatial big data, and professional development programs for educators. In collaboration with a consortium of industry, new courses, programs, and out-of-the-box internships are being designed to create pathways in geospatial technology and careers.

Booth # 704

Union County College Cyber Service! Interdisciplinary and Experiential Education for Cyber Forensics Technicians

Cyber Service! addresses the nation's critical cybersecurity workforce shortage. Our innovative curricular design focuses on the education of middle-skill cyber forensics technicians. Experiential education and a service-learning capstone course are integrated into the curriculum to keep students engaged, provide career readiness skills, and instill a commitment to civic responsibility. The AAS degree in Cyber Forensics serves as a national model.

Florida State College at Jacksonville iNoVATE Expansion Project

This project is creating online curricula for five courses that align with the Microsoft Certified Solutions Expert (MCSE) server infrastructure certification, along with two additional courses, Virtual Internship, and Virtual Capstone.

Booth # 706

Northeast State Technical Community College Integrating Soft/Entrepreneurial Skills for Success in Cybersecurity

The project goals are: (1) to integrate "soft skills" such as teamwork, effective communication, and relationship building; and entrepreneurial skills such as leadership, salesmanship, accountability, goal orientation, persuasion, and influence into the current curriculum and new courses; and (2) to build enrollment in the IA program by focusing on area high schools, the community, and industry outreach.

Booth # 707

Cold Spring Harbor Laboratory Biotechnology in American High Schools: Continuing Research

In 1998, the DNA Learning Center surveyed 4,100 high school biology teachers, providing a snapshot of the advent of hands-on biotech instruction in American schools. We have now repeated this study with 2,200 teachers to track changes in biotech education and suggest where it needs to focus over the next 20 years. Our results have policy and funding implications.

Booth # 708

CUNY Bronx Community College (BCC–CUNY)

Chemical and BioEnergy Technology for Sustainability (CBETS)

The CBETS project has succeded in creating two new courses within the Chemistry AS degree program at BCC–CUNY. Information about the courses, Biofuels and Bioproducts, and Intro to Chemical Engineering, will be shared. Additionally, survey data from student participants from local high schools, BCC, and City College is presented.

Booth # 709

Westchester Community College Photonics and Laser Project (PALTEC)

PALTEC is a new program training students in the high demand field of photonics. The project will modify three existing classes to include photonics and create two new classes. The project will also focus on recruiting and retaining female and minority students.

Booth # 710

South Louisiana Community College (SLCC) Advancing Technicians in Manufacturing

SLCC will build program capacity for technician education by preparing students for the Manufacturing Skill Standards Council's (MSSC's) Certified Production Technicians (CPTs) exam. SLCC will embark on an opportunity to provide industry-recognized credentials to students through MSSC's CPT program while gaining hands-on experience. Graduates with CPT will reduce initial training time and hiring cost for employers.

Booth # 800

Clemson University CA2VES : Center for Aviation and Automotive Technological Education Using Virtual E-School

CA2VES is at the forefront of creating and disseminating digital learning tools to enhance the technician education experience. This showcase will allow participants to interact with our custom virtual reality environments and browse our online learning platform, EducateWorkforce.com.

Booth # 801

University of New Mexico NM Green: Advancing Sustainable Construction Technology Education

The goal of this project is to produce more technicians qualified for jobs in green construction. Key activities include a certificate program in green construction technologies; development of a pipeline of students focused on green construction technology, including an internship program and development of dual credit courses; and recruit underrepresented minority students to STEM fields.

Booth # 802

Dordt College Strengthening and Sharing a Holistic Technician Education Program Implemented at a Small,

Rural, Private College

Pro-Tech degrees at Dordt College (Sioux Center, IA) offer a holistic technician education that builds strong technical abilities on a foundation of cross-contextual skills, character traits, and core values. The innovative Manufacturing and Agriculture Operations degree programs—which feature paid internships, two full days per week—are being strengthened by adapting proven materials from ATE-funded projects and centers.

Booth # 803

Utah Valley University Integrating Environmentally Improved Photolithography Technology and Virtual Reality into Advanced Nanotechnology Education

This showcase presents advanced nanotechnology training using virtual reality and environmentally safe laboratory experiments. Learning modules are aligned with the industry requirements.

Booth # 804

Rowan-Cabarrus Community College Increasing Women in Engineering and Industrial Technologies Programs

This showcase will display our college's efforts to increase the number of women in engineering and industrial technologies programs. During the showcase, we will display the "kits" that we used during our Taste of Industry event to expose future students to careers in engineering and industrial technologies.

Booth # 805

Connecticut Pre-Engineering Program, Inc. Engineering Technology Challenge (ETC)

The Engineering Technology Challenge (ETC) program engages a diverse group of underrepresented students from urban comprehensive high schools in Saturday programs focused on manufacturing technology. The program creates teams of high school students, mentored by community college students, faculty, and industry professionals in industry-driven problem-based learning projects, including the integration of professional skills and teamwork.

Booth # 806

Alamance Community College Mechatronics Technology Institute

The Mechatronics Technology Institute partners with the local advanced manufacturing industry and Alamance County high school system to prepare STEM teachers and counselors to become a part of the mechatronics educationto-workforce pipeline.

Booth # 807

Lincoln Land Community College (LLCC) Development of a Competency-Based Education (CBE) Program in Cybersecurity

As many businesses become more information oriented and network reliant, cybersecurity is becoming a critical priority. LLCC is offering a CBE certificate for individuals with previous IT work-related experience interested in advancing in the cybersecurity field. It will provide an IT foundation that will branch into a number of career specializations.

Booth # 808

Lone Star College System College District Advanced Programmable Logic Controllers, Robotics, and Networking

The Lone Star College System College District is working with industry partners to identify specific needs for new mechatronics curricula and leveraging existing mechatronics curriculum. The goal of this project is to develop two new mechatronics courses that incorporate computer networking to better prepare technicians for the digital control systems that they will encounter.

Booth # 809

Galveston College Engineering Technology Instrumentation Project (ETI)

The goal of the ETI project is to improve the education of STEM technicians in the college's current electrical/electronics program into an instrumentation program and to recruit a diverse group of students. Galveston College seeks to achieve this goal by developing an integrated curriculum framework for technician education and extensively using job shadowing and internships from our Industry and Business Implementation Team.

Booth # 900

Skagit Valley College Composites Recycling Technician Education Program

The Composites Recycling Technician Education Program is creating an innovative curriculum to address the emerging need for composite and material science technicians who will identify, sort, handle, and catalogue composite fiberglass and carbon fiber waste stream material in manufacturing settings. The program's goal is to develop a certificate pathway that can be adapted to multiple educational settings and industries.

Booth # 901

Cape Cod Community College Massachusetts Credentials and Careers in Aviation (MCCA)

The MCCA grant project has established a set of stackable certificates and an associate degree pathway that prepares FAA-certified aviation maintenance technicians, enhancing the region's workforce. To do so, this capacity building project developed a fully equipped training facility and built local, regional, and national employer partnerships. A hybrid pathway is under development to broaden program reach.

Wake Technical Community College

Robotics Awake: Promoting the Diffusion of Innovation through Curriculum Development and a Technician Training Community College Extension Model

Collaborating with industry and educational partners, Wake Technical Community College spent the first year of its three-year grant developing a curriculum for a Collaborative Robotics certification program focused on collaborative robotics in a manufacturing setting. This curriculum currently consists of three stackable certification credentials: Collaborative Robotics Technician 1, Collaborative Robotics Technician 2, and Collaborative Robotics Programmer.

Booth # 903

Community College of Baltimore County, Essex

STEM Core in Central Maryland for Cybersecurity Education

STEM Core's goal is to increase the number of cybersecurity professionals by accelerating mathematics, providing high-touch advising with a student support specialist, and offering summer internships as a culmination of a year of intensive mathematics and cybersecurity education.

Booth # 904

Eastern Iowa Community College 3D ImPACT: Integrated Project Approach to College Teaching

3D ImPACT is an integrated teaching approach to increase the number of skilled workers in additive manufacturing through curriculum development; an integrated, project-based capstone course (welding, computer numeric control machining, mechanical design technology, logistics, information technology, and engineering technology); and professional development for faculty.

Booth # 905

Skyline College Biobridge Program

The BioBridge program at Skyline College is designed to attract students from groups underrepresented in STEM fields and launch them on a pathway to further education and careers in biotechnology. BioBridge employs an innovative learning community model; contextualized literacy, math, and 21st century skills instruction; project-based skills practice in a lab environment; workbased learning opportunities; and wraparound supports for students.

Booth # 906

Dallas County Community College District, Brookhaven College Integrating Construction Engineering and Geospatial Technician Projects

This "constructioneering" project is a content module development project focusing on interdisciplinary instruction in commercial construction engineering. The content modules will improve education of engineering technicians and geospatial technicians in the application of new technologies. Industry workflow efficiency improves when technicians have increased understanding across both disciplines. This showcase focuses on the industry-involved planning workshop that launched the project.

Booth # 907

Jefferson State Community College Advancing Education in Production Technology

This showcase will reflect the mechanical drive systems used to train manufacturing systems technology students to becoming certified production technicians.

Booth # 908

Atlantic Cape Community College Small Unmanned Aircraft Systems Operations and Maintenance Training Project

This project aims to advance technician education and training in the rapidly evolving and critically important field of small commercial unmanned aircraft systems; and plans to develop a curriculum for a new academic program that will prepare students to work as technicians in UAS operation, maintenance, and repair.

Booth # 909

Miami Dade College (MDC) Cybersecurity Opportunities and Methods that Promote Access and Student Success (COMPASS)

The overall goal of MDC's COMPASS project is to increase the number of underrepresented minorities entering the cybersecurity workforce by developing capacity to support and implement a pathway for underrepresented minority, firsttime-in-college, and nontraditional students affordable access to a state approved one-year college credit certificate and/or a two-year AS degree in cybersecurity.

2018 ATE STUDENT/ALUMNI PARTICIPATION



AACC AND NSF WISH TO CONGRATULATE THE FOLLOWING ATE STUDENTS AND RECENT ALUMNI SELECTED TO ATTEND THE 2018 ATE CONFERENCE.

Steven Ansorge, Madison Area Technical College, WI Ryan Arnold, Motlow State Community College, TN Abraham Assefaw, Columbus State Community College, OH Logan Ballard, Clark State Community College, OH Deivid Beytayoub, Los Angeles Pierce College, CA Stephanie Black, Idaho State University, ID Zachary Bowling, Indian Hills Community College, IA Leroy Brown, Bronx Community College, NY Megan Buckles, Northeast State Community College, TN B. Adam Burke, Eastern Iowa Community College, IA Fatoumata Camara, New York City College of Technology, NY Nicaela Cartagena, Bronx Community College of the City University of New York, NY Xiao Lin Chen, New York City College of Technology, NY Halie Davis, Del Mar College, TX Colleen Day, Highline College, WA Jose de Artola, Los Angeles Mission College, CA Luyen Doan, Hagerstown Community College, MD Shelby Durden, U.S. Department of Agriculture, FL Moamen Elkelany, Tennessee Tech University, TN Mikela Garza, Palomar College, CA Jorge Gonzalez, Sinclair Community College, OH Jesse H. Gutaukas, Tunxis Community College, Central Connecticut State University, CT Jessica Hamway, Idaho State University, ID Richard Santiago Hernandez, Madera Community College Center, CA Terry Howerton, Atkins Academic and Technology High School, NC Ashley Johnson, Northwestern Connecticut Community College, CT Kendra Joyner, Asheville-Buncombe Technical Community College, NC Carson Kelley, Northwest Vista College, TX Sophie Kesek, Moraine Valley Community College, IL

Stephen Lanham, Hagerstown Community College, MD Seethal Meda, Montgomery County Community College, PA Cody Moore, Florida Keys Community College, FL Delaney Morales, Madera Community College Center, CA Yasmin Musa, Motlow State Community College, TN Jill Napert, Bristol Community College, MA Valeria Nazaire, Miami Dade College, FL R. Deborah Overath, Texas Southmost College, TX Daniela Pastor Pereda, Los Angeles Pierce College, CA Sonya Anahi Perales, Gateway Community College, Central Connecticut State University, CT Gerardo Perez, Palomar College, CA Abigail Rasnick, Northeast State Community College, TN Nolan Rebernick, Madison Area Technical College, WI Cesar Ramirez Rodriguez, Indian Hills Community College, IA Marquel Russell, Asnuntuck Community College, CT Alexis Salcido, Madera Community College Center, CA Ricketta Self, Alamance Community College, NC Shraman Sen, New York University, NY Dhrumil Shah, Tunxis Community College, University of Connecticut, CT Daisy Silva, Madera Community College Center, CA Pam Sisto, Moraine Valley Community College, IL Evelyn Torrico, Mt. San Antonio College, CA Silvia Torrico, Mt. San Antonio College, CA Ean L. Towne, Collin College, TX Caryn Truitt, Highline College, WA Dale Twigg, Asnuntuck Community College, CT Kandis Vogel, Delgado Community College, LA Kyle Wendt, Tennessee Tech University, TN Jeremiah White, Clark State Community College, OH



See evaluation come to life

Our webinars showcase practical examples and demonstrations that demystify the evaluation process. These live, interactive learning events feature the expertise of experienced evaluators and successful project leaders. Information-rich handouts summarize key points and include links to learn more.

Use data for ATE research, development, and evaluation

The annual survey of ATE grantees has generated almost 20 years' worth of data about ATE project and center activities and achievements and the students and faculty served through ATE programming. You can use the results to learn about the program and for your own research, proposal development, and evaluation purposes.





Improve your evaluation work now

Our resource library houses an array of checklists, templates, guides, and other resources to help you improve your evaluation work immediately. Tools such as the ATE evaluation planning checklist, logic model template, and data collection planning worksheet help shorten the evaluation learning curve.

Learn from your peers

The EvaluATE-curated blog features the wisdom, experiences, and perspectives of a wide range of ATE community members, including project leaders, evaluators, researchers, and grants specialists. Blog authors share their real-world examples and lessons learned so that you can benefit from their evaluation experience and get ideas for your own practice.





EvaluATE is the evaluation support center for the National Science Foundation's Advanced Technological Education (ATE) program. We are supported by NSF under grant number 1600992.

ATE STUDENT AND ALUMNI POSTER SESSION

Thursday, October 25 12:30 – 2:00 pm

Poster #1

Alamance Community College Ricketta Self

This poster will share information on Alamance Community College's mechatronics program. The program includes training in programmable logic controllers (PLCs), automation, and robotics. Students learn to program PLCs from Rockwell and Siemens. The mechatronics program moved into a new facility the fall of 2017. With this move the program has grown and students now have access to a robotic arm, which they can program to run a product.

Poster #2

Asheville-Buncombe Technical Community College Kendra Joyner

This poster will highlight a student's experience as a woman in computer technologies. The poster will include information on completed student projects, work experience, and A-B Tech's Women in Technology Society. The student project also includes the use of the BlippAR app to create interactive posters.

Poster #3

Asnuntuck Community College Marquell Russell, Dale Twigg

This poster will highlight Asnuntuck Community College's Advanced Manufacturing and CNC Machining Program. This program is a total of 34 credits administered over two semesters that leads to a certificate. Students enjoy a 90 percent job placement rate and have the opportunity to transfer credits earned to a two- or four-year college upon graduation.

Regency

Poster #4

Atkins Academic and Technology High School Terry Howerton

After participating in the Bioscience Industry Fellowship Program, this presenter will describe what he has learned from visiting multiple companies and programs regarding the skills needed for employment in the biopharmaceutical and biotech industry.

Poster #5

Bristol Community College Jill Napert

In 2017, this presenter transitioned from full-time public school teaching to the drinking water treatment industry with the help of Professor Robert Rak and the Blue Center for Water Technologies at Bristol Community College. This poster highlights a new career as a plant operator at the Taunton River Desalination Plant in North Dighton, Massachusetts.

Poster #6

Bronx Community College of the City College of New York Nicaela Cartagena

This poster outlines the presenter's work in helping younger generations understand the importance of geospatial technology by partaking in GIS workshops as an assistant and instructor. The poster will also feature research on the ancient Maya civilization in Belize, Central America, through processes in map making.

Poster #7

Central Connecticut State University, University of Connecticut Jesse H. Gutaukas, Dhrumil Shah

Today, because of the high price of prosthetics, it is very difficult for disadvantaged families to provide a better life for their children who rely on these devices. The goal of this team is to design and create a more affordable prosthetic hand for children using innovative technologies to lower the cost of production and increase product accessibility.

Poster #8

Clark State Community College Logan Ballard, Jeremiah White

The poster will contain details of the highly structured and modularized DREAMs project. DREAMs stands for Developing Rigorous and Enhanced Academic Modules. The purpose of this project is to develop cybersecurity learning modules in a lab environment for high school students without any previous cybersecurity knowledge or experience.

Poster #9

Collin County Community College Ean L. Towne

This poster highlights an examination of network segmentation strategies to minimize cyber attacks. As a part of a defense-in-depth strategy to network security, preventing unfettered access to pivot points and reducing the possibility of malware dispersion through peerto-peer connectivity is necessary.

Poster #10 Columbus State Community College Abraham Assefaw

This poster will include information on a new, cutting-edge program the Logistics Engineering Technology (LET) program—started and only offered at Columbus State Community College. The poster will share the importance of this degree within the logistics field, outline where the demand and need came from to start the program, and include different job fields for the LET degree.

Poster #11 Del Mar College Halie Davis

Water samples were collected from the Corpus Christi Bay area twice after rainfall and tested for two bacteria species related to sewage contamination. Students looked for a connection to the species of bacteria before and after rainfall and found higher levels of bacteria present after rainfall.

Poster #12

Delgado Community College Kandis Vogel

The poster will contain information about the biotechnology program offered at Delgado Community College and what the program provides to technologists going into the biotech field. It will also provide a number of career paths that technologists can go into after completing the program. The presenter's personal career path and interests will be shared as well.

Poster #13

Eastern Iowa Community College B. Adam Burke

This poster will highlight a student project involving AR App development for the Water INTENSE project that used Unity to bring together a 3D model in an Android interface to demonstrate water pump assembly, operation, and maintenance. Within a short timeline, the student team implemented Agile methodology to complete the project to hand it off to the next program team.

Poster #14

Florida Keys Community College Cody Moore

In this poster, the student presenter will highlight renewal energy course work and academic and career pathways.

Poster #15

Gateway Community College, Central Connecticut State University Sonya Anahi Perales

Understanding fracture and pore networks is important because they play a large part in how water and contaminants travel through or become trapped in rock layers within the Earth. Using emerging technology and machinery, the goal of this student team is to create 3D-printed and computergenerated realistic scale models of fracture and pore networks to assist the U.S. Geological Survey in furthering their research.

Poster #16 Hagerstown Community College Luyen Doan

Three dimensional (3D) printing is a relatively low-cost solution for creating prototype designs. Manufacturers, schools, and hobbyists use this technology to solve many problems such as creating replacement parts for those that may have failed, or making custom parts for unique applications. This poster will highlight how 3D printed parts can be made to have various properties such as strength, heat resistance, flexibility, as well as phosphoresence.

Poster #17

Hagerstown Community College Stephen Lanham

This poster presentation will include before and after pictures of the areas in the Electrical and Mechanical technology labs of Hagerstown Community College that the student presenter reorganized over the summer to work toward the goal of creating a lean workplace. The poster will share information on Partkeepr, an open source inventory management system, that is used to keep track of the equipment and how the equipment is organized.

Poster #18

Highline College Colleen Day, Caryn Truitt

This poster will highlight the many facets of cybersecurity and address such questions as: What is cybersecurity? How do you know if you want to go into cybersecurity? The poster will feature a cybersecurity tree to show the lineage of the fields, interests, and directions needed to pursue a career in cybersecurity.

ATE STUDENT AND ALUMNI POSTER SESSION

Poster #19

Idaho State University Stephanie Black, Jessica Hamway

Students from Idaho State University's Energy Systems Technology and Education Center program will share information on this two-year AS degree program that offers majors in mechanical, instrumentation, and electrical technologies, with nuclear and cyber physical security options.

Poster #20

Indian Hills Community College Zachary Bowling, Cesar Ramirez Rodriguez

This poster will focus on the laser program at Indian Hills Community College. It will share information about classes, what students can expect to learn, as well as what the program can bring to someone who attends for their future in the workplace. This poster will also show and talk about how many people get a job right after graduation or even before.

Poster #21

Indian River State College Shelby Durden

In this study, students assessed the effects of citrus cultivars genetically modified to over-express an altered plant thionin with the intent to enhance host resistance to HLB. Disease testing of these transgenic plants can take up to a year. To combat this issue, a quick lab-based detached leaf assay was developed to establish line performance at the seedling stage.

Poster #22

Los Angeles Mission College Jose de Artola

Biotechnology research laboratory assistant certification teaches applied chemistry and biological laboratory techniques. By learning laboratory safety and bench techniques, genetic sequence amplification (qPCR), cell culture, and aqueous solution preparation, as well as working on projects such as greywater filtration, students are prepared to work in biotechnology industry settings.

Poster #23

Los Angeles Pierce College Daniela Pastor Pereda, Deivid Beytayoub

This poster will display a rain water capture system that was developed in a low-income neighborhood in Los Angeles County. This project was also supported by Treepeople, which is a nonprofit that plants trees for free around Los Angeles.

Poster #24

Madera Community College Delany Morales, Daisy Silva

Posters 24 and 25 share information on Madera Community College's project to create seamless 2+2+2 pathways from high school to two-year colleges and fouryear institutions for student interested in pursuing education in agriculture business and related fields. Students will work towards a certificate, AS degree, and/ or transfer to four-year colleges and universities.

Poster #25

Madera Community College Richard Santiago Hernandez, Alexis Salcido

Posters 24 and 25 share information on Madera Community College's project to create seamless 2+2+2 pathways from high school to two-year colleges and fouryear institutions for student interested in pursuing education in agriculture business and related fields. Students will work towards a certificate, AS degree, and/ or transfer to four-year colleges and universities.

Poster #26

Madison Area Technical College Nolan Rebernick

Electroluminescence (EL) imaging is generally used to gather qualitative data for photovoltaic cells in an effort to quickly identify defective regions. This work focuses on quantifying EL images to generate dark IV curves and voltage maps for multijunction photovoltaic cells.

Poster #27

Madison Area Technical College Steven Ansorge

This poster will provide an overview of Madison Area Technical College's photovoltaic rooftop array from its design, installation, and benefits of the 1.9 MW system that is the largest rooftop array in the state of Wisconsin. The poster will also highlight the development of an institution-wide photovoltaic plan with student leader involvement. There will be a guide to getting students more involved in their colleges PV plans.

Poster #28 Miami Dade College Valeria Nazaire

Metastasis is the spreading of cancer cells throughout the body through multiple invasionassociated steps. This poster features research that was used to evaluate the effect of Schinus tree extracts on breast cancer cell migration. Data revealed that treatment with Schinus extracts significantly decreased migration velocity in BT549 cells compared to untreated and solvent-treated controls.

Poster #29

Montgomery County Community College Seethal Meda

This poster highlights a collegecompany collaborative study on the role of frataxin on neuron development during mESC differentiation. Friedreich's Ataxia is a neurodegenerative disorder caused by a loss of function of the frataxin gene. In a collaborative project with Chondrial Therapeutics, Inc., the role of the frataxin gene in neuron development during mouse embryonic stem cell differentiation was analyzed with immunofluorescence.

Poster #30

Moraine Valley Community College Pam Sisto, Sophie Kesek

This poster represents the Center for Systems Security and Information Assurance at Moraine Valley Community College. Industrial security has become a major security issue for our nation. This poster illustrates the threats, vulnerabilities, and countermeasures being taught and implemented in industrial control security courses.

Poster #31

Motlow State Community College Yasmin Musa

A low-cost remote supervisory control capability is added to a packaging process, in which a low-voltage signal is used to communicate between a distant HMI control panel and a PLC network using the AC power line as a communication medium. Remote supervisory control is achieved using a user-defined toolbox of control functions.

Poster #32

Motlow State Community College Ryan Arnold

Smart Manufacturing (SM) has increasingly been under the spotlight. However, current efforts in deploying SM technologies in the U.S. do not provide a workforce trained to utilize and perform SM technologies. This poster presents some SM technologies such as Internet of Things, cyber physical systems, and common industry 4.0 standards.

Poster #33

Mt. San Antonio College Evelyn Torrico, Silvia Torrico

The Mt. SAC STEM Teacher Preparation Program recruits, mentors, and trains students who are interested in becoming highly qualified middle and high school math and science teachers, and support their transfer to fouryear institutions to earn their baccalaureate degree and teaching credentials in STEM.

Poster #34

New York City College of Technology Fatoumata Camara

Clubfoot is a congenital deformity of the foot that occurs in approximately 1:1000 births with half of them being bi-lateral (both feet). The foot has a typical appearance of pointing downwards and twisted inwards. A clubfoot brace keeps the corrected foot growing like it should. Our goal is to design a clubfoot brace that will be both affordable and less time consuming for clients.

Poster #35

New York City College of Technology Xiao Lin Chen

This poster highlights the design of a prototype using Internet of Things (IoT) in a prosthetic limb. All the devices in this sensor network (WSN) system are communicating through Firebase using a Raspberry Pi 3 board. An Arduino microprocessor is being used to send and receive data from various sensors; and a web, voice control, and Android application are being developed to monitor the patient's health.

Poster #36

New York University Shraman Sen

The poster features a study that demonstrates the application of geospatial analyses for determination of spatial correlations between different socioeconomic variables in New York City. It describes the importance of geospatial analyses for international agencies such as the World Bank, which are invested in designing and implementing global development programs for managing natural and human resources.

ATE STUDENT AND ALUMNI POSTER SESSION

Poster #37

Northeast State Community College Megan Buckles, Abigail Rasnick

This poster concerns the need for more individuals to study cyber defense. This career field is growing at a faster-than-average rate and there are not enough people to fill these positions. Cyber defense is an ever-changing and challenging career field; technical know-how and soft skills are important.

Poster #38

Northwestern Connecticut Community College Ashley Johnson

Northwestern Connecticut Community College (NWCCC) and local high school Northwestern Regional 7 participated in a joint project that provided data about the presence of antibiotic-resistant bacteria in soil. The project allowed NWCCC to act as a lab for the high school, process their independently acquired samples, and gather data that will be entered into a national study.

Poster #39

Northwest Vista College Carson Kelley

This poster will highlight Project AIM-TEC and its vision to: provide educational preparation to students with knowledge and skills in micronano-bio technologies; strengthen the transition points from high school to college, and college to the workforce; expand awareness of nanotechnology benefits and current and potential impacts; and the various educational and career pathways available.

Poster #40

Palomar College Mikela Garza, Gerardo Perez

This poster shows an orthophoto, 3D model, and Normalized Difference Vegetation Index (NDVI) captured with a small unmanned aircraft system. An orthophoto can convey construction progress. The 3D model can help with visualizing the terrain; and the NDVI can be used to analyze vegetation health around campus.

Poster #41

Sinclair Community College Jorge Gonzalez

This poster will highlight the STEM Guitar Building Project where lab technicians build guitar bodies, necks, and fret boards while using and operating CNC machines.

Poster #42

Tennessee Tech University Moamen Elkelany, Kyle Wendt

Additive manufacturing is becoming extremely important in every aspect of life. In this poster, students will show several projects and case studies that have been accomplished through their ATE projects. Samples will also be distributed.

Poster #43

Texas Southmost College R. Deborah Overath

Through the Biosciences Industry Fellowship Program, this presenter gained knowledge and hands-on experience with cutting-edge, bioscience-related techniques and technology. The presenter gained a deeper appreciation for the careers available in the biosciences industry and the skills they require, including soft skills. In addition, this poster will explore the life sciences industry in the state of Texas.

CONFERENCE STEERING COMMITTEE



Many thanks to the following individuals for their dedicated assistance in planning the 2018 ATE Conference.

Cathy Balas, Clark State Community College, OH Ann Beheler, National Convergence Technology Center, Collin College, TX Rachael Bower, ATE Central, University of Wisconsin-Madison, WI Osa Brand, Mentor-Connect, VA Chris Carter, Virginia Space Grant Consortium, VA V. Celeste Carter, National Science Foundation, VA Hope Cotner, Center for Occupational Research and Development, TX Mel Cossette, National Resource Center for Materials Technology Education, Edmonds Community College, WA Sharon Gusky, Northwestern Connecticut Community College, CT James Guenther, Delgado Community College, LA Ellen Hause, American Association of Community Colleges, DC Ken Mays, Central Oregon Community College, OR Louise Petruzzella, Shoreline Community College, WA Gerhard Salinger, National Science Foundation (Retired), NM Pamela J. Silvers, Asheville-Buncombe Technical College, NC Thomas Singer, Sinclair Community College, OH Gordon Snyder, National Center for Optics and Photonics Education, MA Lori Wingate, EvaluATE, Western Michigan University, MI

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ATE PRINCIPAL INVESTIGATORS CONFERENCE





