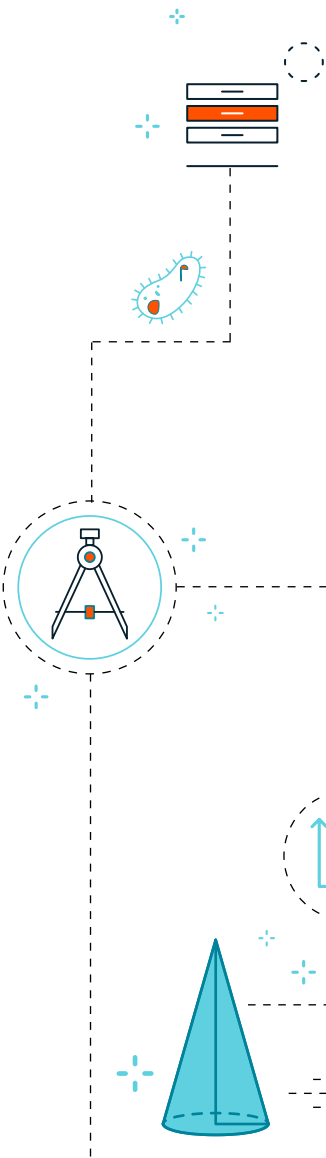
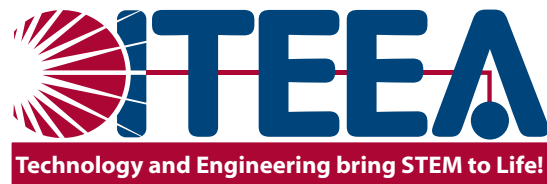


ADVANCE PROGRAM



ITEEA 
BALTIMORE  
MARCH 11-14
2020

INTERNATIONAL TECHNOLOGY AND ENGINEERING EDUCATORS ASSOCIATION



BALTIMORE 2020

TECHNOLOGICAL AND ENGINEERING LITERACY FOR ALL!

INVITATION

from ITEEA's President



On behalf of the ITEEA Board of Directors, Conference Planning Committee, and the ITEEA Headquarters staff, it is both my honor and privilege to invite you to attend and participate in the 82nd Annual ITEEA Conference. This year's conference will be held March 11-14, 2020 in Baltimore, Maryland.

The theme for ITEEA's 82nd Annual Conference is:
"Technological and Engineering Literacy for All!"...

Providing access and equity for all PreK-12 students to become technologically and engineering literate through high-quality STEM instruction is imperative. Students who study technology and engineering through an integrative STEM education approach learn about the technological world that inventors, engineers, and other innovators have created. The goal is to produce students with a more conceptual understanding of technology and engineering and its place in society. These students must conceptualize and evaluate new technologies that they may have never seen. By "doing and making," students become "makers" for the future.

This year's conference strands are:

Strand 1: Innovative strategies to support Technological and Engineering Literacy for All.

Strand 2: Providing or making connections to bridge the divide between Integrative sTEM Education and sTEM career opportunities.

Strand 3: Connecting people, facilities, and resources to find solutions to the challenges facing our profession.

Strand 4: Attracting underrepresented populations to I-sTEM education.

As I enter my 38th year of teaching technology and engineering students at the high school level, I look back at how teaching in this area has evolved over this time. I started my career as an "Industrial Arts" instructor, developed "Technology Education" experiences, and have added "Engineering" to my course descriptions. How was I able to keep current with these changes? By attending the Minnesota Technology and Engineering Educators Association (ITEEA's Minnesota affiliate organization) and ITEEA conferences along with other professional development through area colleges and businesses.

I invite you to join us at the ITEEA conference this year in Baltimore. The theme and strands are designed to help Technology and Engineering educators integrate I-STEM activities into their classrooms. There will be many professional development opportunities for you to build your programs!

Our profession now includes elementary Engineering and STEM educators who have joined our traditional middle and high school educators in preparing students for the 21st century workforce. The knowledge, skills, and abilities that students will need is highlighted in the many professional development presentations, learning activities, and workshops that make up this conference.

Why should you attend this year's conference? Let me put it to you in the form of a "Top 10" list of reasons:

10. An opportunity to experience Baltimore's Inner Harbor.
9. Walk through the Exhibit area and get firsthand information on the newest and best products for Technology and Engineering education.
8. Attend the Celebration Reception in the Exhibit hall and join us for a tasty treat.
7. Invite your building/District administrators to see how they can enhance T&E and STEM programs in their schools by following the Administrator Strand of professional development.
6. Visit the Engineering byDesign™ Learning Lounge and discover the resources available to teachers through ITEEA.
5. Interact with future T&E educators through the TEECA competitions area and presentations.
4. Explore the STEM Showcase and pick up that new activity that you can bring back to enhance the learning experience for your students.
3. Attend the general sessions to recognize this year's award winners and hear great presentations from our featured speakers.
2. Network with over a thousand other T&E and STEM educators, K-12 and postsecondary.
1. Participate in the best content-orientated professional development available!

These are just 10 of many reasons to make the 82nd ITEEA conference part of your professional development for the 2019-20 school year. I look forward to seeing you in Baltimore!

Michael A. Sandell, DTE
 ITEEA President

HIGHLIGHTS at ITEEA's Baltimore Conference

Technological and Engineering Literacy for ALL!

The annual ITEEA conference provides an unparalleled opportunity for technology and engineering educators to gain comprehensive professional development and networking experiences. ITEEA members pay a reduced rate to attend and can choose from dozens of interest sessions, workshops, and social events. This is a unique opportunity to learn from and share with other technology and engineering STEM education professionals in a variety of formats.

2020 ITEEA Conference Highlights

ITEEA STEM Showcase

Highlighting Best Practices Through Integrative STEM Education!

The ITEEA STEM Showcase is a unique and exciting event that features dozens of ideas, techniques, and best practices related to learning activities, marketing materials, career guidance, facility design, program design, assessment methods, equity, or classroom and laboratory management techniques. Showcasers illustrate a single element of technology or engineering teaching and learning that they feel they have exemplified. Contact Katie de la Paz at kdelapaz@iteea.org for additional information.

Attendees are invited to join ITEEA in the exhibit area for our Celebration Reception immediately following the STEM Showcase.

Continuing Education Credit

The Maryland State Department of Education (MSDE) will allow ITEEA 2020 attendees to apply and receive one Continuing Professional Development (CPD) credit for attending and fulfilling written obligations from the 2020 ITEEA Annual Conference. MSDE CPD 16-66-04 is approved for the International Technology and Engineering Educators Association's Collaborating to Build a Diverse STEM-Literate Society. Middle and high school technology and engineering teachers should contact Dr. Loveland for the registration application and CPD details. He can be reached at tloveland@umes.edu.

Administrator I-STEM Education Professional Development Strand

Bring your Administrator at no additional cost (registration reimbursed postconference; see p. 9). A special strand of presentations designed for Administrators will be offered to build understanding and support for your comprehensive program.

Engineering for Social Good

Go Baby Go is back! Visit teams as they work together to modify battery-operated toy ride-on cars for babies and toddlers who experience limited mobility and be on hand for the presentation of the "Dream Ride" vehicles! This innovative design project highlights the diversity of children with developmental delays and integrates the school within the community. Additionally, see the presentation of the first-ever REACH Challenge Awards, which will go to teams that use their STEM skills to REACH a member of their community who has a challenge to overcome, and design a solution to help!

New From EbD™

On Wednesday March 11, 2020, ITEEA's EbD STEM Center for Teaching and Learning™ is unveiling the 2019-2020 course revisions at preconference workshops: *EbD TEEMS™ Grade 6, Our World and Me*, our standalone AP CS prep course, and *Foundations of Technology ONLINE*, our new student-facing online introductory high school level course. Join us Thursday and Friday, March 12-13, for four-hour, action-packed, course-centered EbD Labs™ chock full of hands-on learning experiences. An elementary, middle school, and high school EbD Lab™ will be offered each day. Space is limited, so reserve your seat now.

STEM Schools of Excellence

Outstanding schools will be recognized for their commitment to providing robust Integrative STEM Education programs as "STEM Schools of Excellence." See the first-ever awards presentation at ITEEA's Program Excellence General Session on Thursday, March 12th.

The most important benefit that you can get from an association is the ability to contribute to and share with others as well as learn from their experiences. We will continue to work to provide ITEEA members with these important opportunities.

4 Featured Keynote Speakers

Program Excellence General Session

Thursday, March 12

9:00am–10:50am

Featured Speaker:

Freeman A. Hrabowski



Program Excellence Awards sponsored by Paxton-Patterson.

PAXTON PATTERSON

Teacher Excellence General Session

Friday, March 13

9:00am–10:50am

Featured Speaker:

Jeanette J. Epps



Teacher Excellence Awards sponsored by Goodheart-Willcox Publisher.

G-W
PUBLISHER

Freeman A. Hrabowski

President, University of Maryland, Baltimore County (UMBC)

The Culture of Science and Teaching

Dr. Freeman A. Hrabowski, President of UMBC (University of Maryland, Baltimore County) since 1992, is a consultant on science and math education to national agencies, universities, and school systems. He was named by President Obama to chair the President's Advisory Commission on Educational Excellence for African Americans. He also chaired the National Academies' committee that produced the report, *Expanding Underrepresented Minority Participation: America's Science and Technology Talent at the Crossroads* (2011). His 2013 TED talk highlights the "[Four Pillars of College Success in Science](#)."

Named one of the 100 Most Influential People in the World by *TIME* (2012) and one of America's Best Leaders by *U.S. News & World Report* (2008), he also received TIAA-CREF's Theodore M. Hesburgh Award for Leadership Excellence (2011), the Carnegie Corporation's Academic Leadership Award (2011), and the Heinz Award (2012) for contributions to improving the "Human Condition." UMBC has been recognized as a model for inclusive excellence by such publications as *U.S. News*, which in the past 10 years has recognized UMBC as a national leader in academic innovation and undergraduate teaching. Dr. Hrabowski's most recent book, *Holding Fast to Dreams: Empowering Youth from the Civil Rights Crusade to STEM Achievement*, describes the events and experiences that played a central role in his development as an educator and leader.

Jeanette J. Epps

NASA Astronaut

From Engineer to Astronaut

Jeanette J. Epps was selected by NASA in 2009 as an astronaut. She completed astronaut candidate training which included scientific and technical briefings, intensive instruction in International Space Station systems, spacewalk training, robotics, T-38 flight training and wilderness survival training. The New York native was a NASA Fellow during graduate school and authored several journal and conference articles describing her research. Dr. Epps worked for Ford Motor Company where she received both a provisional patent and a U.S. patent for her research. After leaving Ford, she joined the Central Intelligence Agency (CIA) for seven years working as a Technical Intelligence Officer before becoming an astronaut. She currently serves in the ISS Operations Branch working issues in support of space station crews.

Dr. Epps received both her Master of Science and Doctorate of Philosophy in Aerospace Engineering from the University of Maryland.

Visit the NASA website to learn more about Astronaut Jeanette Epps:

<https://www.nasa.gov/astronauts/biographies/jeanette-j-epps/biography>

Featured Meal Function Events

5

Thursday



CSL Breakfast and Business Meeting

Thursday, March 12, 2020

7:30am–8:30am

Cost: \$38; ticket required

(included in CSL Conference Package and as part of the VIP Administrator Strand)

Thursday

PATT International/PATT Luncheon



Thursday, March 12, 2020

12:00pm–1:30pm

Cost: \$48; ticket required

Title

Critical Issues of STEM Education

Featured Speaker:

Mark Kuen-Yi Lin
Taiwan Normal University
Taipei, Taiwan

Friday



ITEEA Foundation/Maley "Spirit of Excellence" Breakfast



Friday, March 13, 2020

7:00am–8:45am

Cost: \$40; ticket required

Title

To Teach is to Engineer

Featured Speaker:

Jamie Gurganus
University of Maryland –
Baltimore County

University host:
UMES, UMBC, and
Millersville University

Friday



TEECA Awards Program

Friday, March 13, 2020

5:00pm–6:15pm

Cost: \$15; ticket required

(included in Student Registration Package)

The TEECA Awards Program recognizes the winners from the various competitions at the conference, outstanding chapters and members, as well as the accomplishments of TEECA during the 2019–20 year.

Teachers and Advisors are welcome.

Refreshments will be included.

Saturday

EPT Breakfast

Saturday, March 14, 2020

7:00am–8:45am

Cost: \$40; ticket required

This gathering of ITEEA's official honor society is open to all conference participants.



Saturday



ITEEA Awards and Recognition Brunch



Saturday, March 14, 2020

10:15am–11:45pm

Cost: \$50; ticket required

Featured Speaker:

Phil Reed, DTE

6 Preconference Workshops

Choose from seven specialized preconference workshops available in 2020. Workshop times and registration pricing vary—see individual listings.



Engineering byDesign™ Workshops

High School Preconference Workshop

Computer Science Principles byDesign

(high school/no prerequisite)

Wednesday, March 11

1:00-5:00pm

Computer Science Principles byDesign aligns with the framework for the Advanced Placement (AP) Computer Science Principles exam. Rigorous and engaging, this new EbD™ offering is built directly upon the success of the NSF-supported Beauty and Joy of Computing curriculum, with the goal of attracting students in groups that are historically underrepresented in computer science. Computational thinking practices are woven throughout.

- Intro to Programming
- Abstraction
- Data Processing and Lists
- How the Internet Works
- Algorithms and Simulations
- How Computers Work

Open to all attendees. Laptop/smart device required.

Limit: 50 participants.

\$95 - ticket required; no charge for Consortium members

Middle/High School Preconference Workshop

Foundations of Technology ONLINE (Grade 8/9)

Wednesday, March 11

1:00-5:00pm

Foundations of Technology prepares students to understand and apply technological concepts and processes that are the cornerstone for the high school technology program. Group and individual activities engage students in creating ideas, developing innovations, and engineering practical solutions. Technology content, resources, and laboratory/classroom activities apply student applications of science, mathematics, and other school subjects in authentic situations.

The online course is new for 2020-2021 and allows students to take the course in a variety of situations with minimal guidance from an instructor.

Open to all attendees. Laptop/smart device required.

Limit: 50 participants.

\$95 - ticket required; no charge for Consortium members

Elementary School Preconference Workshop

EbD TEEMS™ Grade 6: Our World and Me

(Grade 6)

Wednesday, March 11

1:00-5:00pm

Coding, computational thinking, and programming help to control many things in the world around us. Computational thinking and understanding electronic sensor systems are important to students' technological literacy. EbD TEEMS™ Grade 6 provides an overview of coding, computational thinking and programming concepts with everyday examples. Students will build their knowledge and apply it to create an automated prototype.

Open to all attendees. Laptop/smart device required.

Limit: 50 participants.

\$95 - ticket required; no charge for Consortium members

Design Thinking Crash Course

Wednesday, March 11

1:00pm-4:00pm

This workshop will immerse you in human-centered design-thinking strategies through active learning. We will engage, experience, reflect, and discuss transferring design-thinking strategies to your classroom. Be ready for observations, interviews, "Point of View" statements, composite character profiles, and maybe, dancing. Participants will receive an exclusive sneak peek at the ITEEA Reach Challenge. Monday-morning-ready approved.

Presenters: Nathan Mentzer, Gavin Wood, and Shawn Farrington

Limit: 50 participants.

\$95 – ticket required

Literacy Through the Lens of Technology:

Librarians Supporting Literacy Through STEM Programs

Wednesday, March 11

1:00-4:00pm

Librarians support print, media, and digital literacies, and now STEM has been added to the list. This three-hour workshop is designed for librarians who would like to collaborate more with STEM educators in their building, district, and state.

Presenters: Deborah K. Marshall and Lisa Ward

Limit: 50 participants.

\$95 – ticket required

STEM in Elementary: Implementing a STEM Program in Elementary School

Wednesday, March 11

4:00-7:00pm

Facilitated by award-winning elementary STEM professionals, this session will engage participants in discussing and designing school and classroom-tested strategies to engage students in STEM, integrate STEM into the school, and build school, home, and community connections through hands-on STEM-based activities. Participants will leave with strategies and at least one activity they can use to implement STEM in their classrooms.

Presenters: Julie Sicks-Panus and Thomas Roberts

Limit: 50 participants.

\$50 – ticket required

Implementing Coding and Microcontrollers Through Hands-On STEM Applications

Wednesday, March 11

1:00pm-4:00pm

Hosted by TeacherGeek®

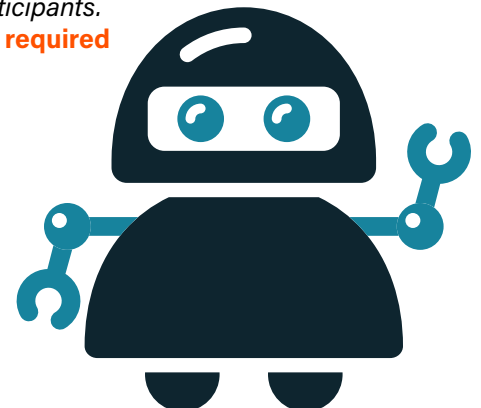
Increasing students' ability to think computationally has become a nationwide initiative. Additionally, preparing students to design and think innovatively so they are better prepared for critical-shortage STEM careers has also been a focus. How can both of these initiatives be addressed to prepare a more technologically and engineering literate society? One solution is through cost-effective microcontrollers integrated within hands-on, content-rich STEM design challenges! Learn various ways to code the microcontrollers sold by TeacherGeek® and how to integrate them with TeacherGeek's® fabrication materials to teach various science, engineering, and math concepts. The microcontrollers and TeacherGeek® materials are extremely user friendly, and this presentation will focus on applications for upper elementary through middle school settings (Grades 3-7). Correlating lesson plans, worksheets, and other standards-based instructional resources will be provided. **Each participant will receive a microcontroller and TeacherGeek® fabrication materials.** No prior coding or fabrication experience is required.

Participants are expected to bring a laptop to code their microcontroller.

Presenter: Darren Coon, CEO of TeacherGeek, and Tyler Love

Limit: 50 participants.

\$115 – ticket required



Educational Field Trips

Educational Field Trips

Be sure to check the on-site program or mobile app for complete details. Participation is limited on each field trip, first-come, first-served, so register early. Due to the limited availability of these educational field trips, you must be a fully registered conference attendee in order to qualify for participation.

Wednesday, March 11, 2020

Johns Hopkins Medicine Simulation Center/Sollers Point Technical High School

12:30pm-5:00pm

Transportation: Chartered bus.

The Johns Hopkins Medicine Simulation Center is a fully accredited state-of-the-art medical training facility that incorporates five types of simulation, including standardized patients and teaching associates, human patient simulation, virtual reality, task trainers, and computerized simulation.

The main goal of the Simulation Center is to improve safety within patient care. Current and future health care professionals "practice on plastic," honing their skills, refining advanced techniques, and learning valuable social interactive tools for delivering important news to patients.

A partnership between the School of Medicine and the Johns Hopkins Hospital gave birth to the Simulation Center, which highlights the commitment of both institutions to providing cutting-edge technology in the field of health care.

Sollers Point Technical High School provides blended, responsive, and data-driven instruction in order to develop students who are career- and college-ready. Every SPTHS student will complete a career and technical program and earn an industry certification or license. Sollers Point High School is a Leeds-certified building.

*This field trip includes stops at both locations.
Maximum: 50 people. Registered attendees only.*

\$50 – ticket required



Saturday, March 14, 2020

Oriole Park at Camden Yards

Take a Stroll Through The Ballpark That Forever Changed Baseball!

12:00pm-1:30pm

Transportation: Participants will walk from the hotel to the site.

The tour of Oriole Park at Camden Yards is a walking tour that is accessible to all.

Oriole Park revolutionized baseball when it debuted on Opening Day 1992. Now, here's your chance to go behind the scenes of this historic ballpark and learn more about how it has continued to change the baseball fan's experience ever since.

The tour covers many areas in our ballpark. We will talk about the B & O warehouse and Babe Ruth, visit Legends Park, and overlook the bullpens. When we enter the ballpark, we will see a luxury suite, the club level memorabilia, the control room, and lower press level. We will also go to the field level to the warning track and the dugout and the umpires' tunnel. The homerun baseball markers on Eutaw Street and the flag court will also be shown on the tour.



Maximum: 50 people. Registered attendees only.

\$20 per person – ticket required

The tour may be altered according to events in the ballpark without notice.

CSL Educational Field Trip and Professional Learning

Wednesday, March 11, 2020

CSL Preconference Field Trip – Baltimore Museum of Industry

11:30am-2:30pm

Transportation: Charm City Circulator Bus, Banner route (free)

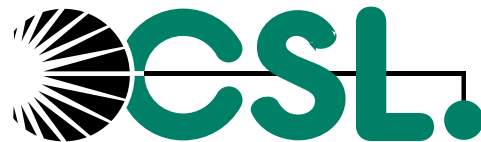
Come tour the Baltimore Museum of Industry.

Baltimore's Museum of Industry is a connection factory. Only when you suit up to shuck oysters, develop your own video game, or watch a blacksmith forge iron does your connection reveal itself. We don't know what your connection to Baltimore's Industry story is, but we do know one thing: this is where you'll find it. Exhibits include an oyster, fruit, and vegetable cannery, the Decker Gallery, Garment Loft, Machine Shop, Pharmacy, Print Shop, The Fall of Bethlehem Steel Photo exhibit, and others. This guided tour is free to the first 40 CSL members to register (\$10 for non-CSL members).

*Participants will gather at 11:30am at the Baltimore Museum of Industry (BMI) and need to provide their own transportation to and from the museum. A free Banner shuttle to BMI departs every 10 minutes from the Otterbein stop (kitty-corner to the Convention Center) at the southeast corner of Charles and Conway streets. The Otterbein is stop #419, and BMI is stop #415; the shuttle runs in both directions if you choose to use it for your return as well.

Limit: 80 participants.

\$10 – ticket required



Integrative STEM Leadership PreK-12 Sponsored Administrator Strand at ITEEA's 82nd Conference

March 11-14, 2020 in Baltimore, Maryland



The International Technology and Engineering Educators Association's (ITEEA) STEM Center for Teaching and Learning™ (STEM CTL™) and ITEEA's Council for Supervision and Leadership invite administrators to attend the 82nd Annual Conference and have the registration fee will be reimbursed postconference (Note: participation in designated Admin Strand sessions required for reimbursement and certificate). Come and see what your teachers are learning and experiencing at our conference. But don't stop there. ITEEA is offering a specifically designed Integrative STEM leadership strand for educational administrators. This is a unique opportunity to network, bring back knowledge and strategies to your school, and implement effective K-12 Integrative STEM Education instruction.

ITEEA's 82nd Annual Conference in Baltimore, MD is both a meeting and exhibition event where PreK-12 teachers, teacher educators, and supervisors come together to share ideas, network, and learn. Some of the 2020 highlights include:

- New Engineering byDesign™ courses – Computer Science Principles byDesign, Foundations of Technology Online, and EbD TEEMS™ Grade 6
- Research on the T&E of STEM – Council on Technology and Engineering Teacher Education (CTETE)
- Leadership in Technology and Engineering Education – Council for Supervision and Leadership (CSL)
- I-STEM Education in Action – sessions that feature strategies and best practices of Integrative STEM Education
- I-STEM Education hands-on workshops
- Updates on federal policies in CTE and STEM education
- Pathways to industry credentials for students
- Integrative STEM Education Resources and Opportunities for your School or District

This conference is a unique opportunity for administrators to build understanding and support for programs—as well as to see firsthand how ITEEA's member-educators Bring STEM to Life through Integrative STEM Education!

www.iteea.org/Activities/Conference/ITEEA_Conference_2020/161486/AdminReg_2020.aspx

Professional Learning

Integrative STEM Leadership

PreK-12 Sponsored Administrator Strand Programming



STEM CTL

ADMIN STRAND



CSL

Council for Supervision and Leadership

CSL/Administrator Strand Conference Schedule

March 11-14, 2020

Wednesday, March 11, 2020

11:30am–2:30pm

CSL Preconference Field Trip

Baltimore Museum of Industry (see page 9 for details)

Transportation: Charm City Circulator Bus, Banner route (free)

4:30pm

STEM4 Paper Panel – PreK-12 Classroom Best Practices:

The Integrative STEM Ed Approach (general conference)

6:00pm–7:00pm

CSL President's Reception

Council for Supervision and Leadership (CSL) President's Reception for all CSL Members and Administrator Strand Registrants.

Join CSL for light hors d'oeuvres and networking with STEM administrators from around the country.

Presenter: Troy Blunier, CSL President and Instructional Assistant Professor, Illinois State University

Thursday, March 12, 2020

7:30am–9:00am

CSL Awards Breakfast and Business Meeting

CSL Members and Administrator Strand registrants are invited to attend.

9:00am–10:50am

Program Excellence General Session

 (general conference)

11:00am–6:00pm

Exhibits Open

12:00pm

Lunch (not provided)

1:00pm

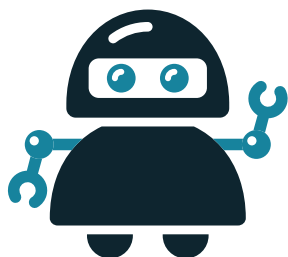
Welcome

Presenters: Nancye Hart, Interim Director, ITEEA's STEM Center for Teaching and Learning™; Rebecca Turner, Curriculum Coordinator, ITEEA's STEM Center for Teaching and Learning™; Joanna Papadopoulos, Special Projects Associate, Ph.D. Candidate at Virginia Tech

1:10pm–1:55pm

ITEEA 101 & CSL Forum

Presenters: Nancye Hart, Interim Director, ITEEA's STEM Center for Teaching and Learning™; Troy Blunier, President CSL and Instructional Assistant Professor, Illinois State University



2:00pm–2:50pm

Excellence in STEM Education

A roundtable question-and-answer session with Programs, Teachers, and Administrators in schools of excellence from across the country. Come find out what sets them apart from the rest.

Presenter: CSL Administrator and STEM Excellence Panel

2:50pm–3:00pm

I-STEM Education in Action

Attend sessions chosen by CSL members that feature strategies and best practices of Integrative STEM Education. Be ready to share your experiences and knowledge acquisition during the I-STEM Ed Share session on Friday, March 13 at 3:00pm.

Presenter: Nancye Hart, Interim Director ITEEA STEM Center for Teaching and Learning™

3:00pm–4:00pm

STEL Updates/Where are We?

An update from ITEEA on the revision to the *Standards for Technological and Engineering Literacy*. What work has been done, what remains, where are we, and where are we headed?

Presenter: Dr. Johnny Moye, CSL

3:00pm–4:00pm

Safety in the STEM Classroom Professional Development Micro-Badging Series and More!

Micro-badging is a hot topic in education! These bite-sized visual representations provide clear evidence that learners have acquired a specific skill and are sought after by employers. Micro-badges are portable, easy to consume, and easy to trust. The STEM Center for Teaching and Learning™ developed a Safety micro-badging 10-hour professional development series that was released September 1, 2019. The series focuses on safety in the STEM classroom and consists of ten one-hour sessions on a variety of safety topics. Participants may register for any number of sessions, from one to ten. But, there's more! Investigate ways that STEM CTL is creating hybrid training sessions to maximize time and efficiency.

Presenters: Nancye Hart, Interim Director ITEEA STEM Center for Teaching and Learning™; Joanna Papadopoulos, Special Projects Associate, Ph.D. Candidate at Virginia Tech

4:00pm–5:30pm

STEM Showcase

 (general conference)

5:30pm–6:30pm

Opening Celebration Reception

 (general conference)

Friday, March 13, 2020

7:45am–8:45am

Breakfast

CSL Members and Administrator Strand registrants are invited to attend.

Professional Learning

Integrative STEM Leadership

PreK-12 Sponsored Administrator Strand Programming



STEM CTL
ADMIN STRAND

11



CSL
Council for Supervision and Leadership

CSL/Administrator Strand Conference Schedule

March 11-14, 2020

9:00am–10:50am

Teacher Excellence General Session (*general conference*)

11:00am–2:00pm

Exhibits open

11:30am–1:00pm

Lunch (not provided)

1:00pm–1:55pm

Policy, Legislation, and Perkins V National Update

Overarching legislative update, policy and funding issues currently at play, and how Perkins implementation is going nationally.

Presenter: Michael Matthews, Government Relations Manager, Association for Career and Technical Education

1:00pm–1:55pm

Flexibility, Affordability, Accountability: A Holistic Approach to Curriculum and PD with EbD™ PreK – 12

Engineering byDesign™ – What is it? Using a standards-based approach, this model provides an overview of how to bring STEM to elementary, middle, and high schools. Using the FAA approach (Flexibility, Affordability, and Accountability), the program is suitable for any school or district seeking to implement an Integrative STEM system.

Presenter: Joanna Papadopoulos, STEM CTL™ Special Projects Associate, Ph.D. Candidate at Virginia Tech

2:00pm–3:00pm

Roundtable Discussion: How EbD™ Curriculum and Perkins V are Companionable

Engineering By Design™ (EbD™) is an integrated STEM curriculum resource for Grades PK-12 that is aligned to the *Common Core State Standards*, *Next Generation Science Standards*, and *Standards for Technological Literacy*. Both Illinois and Kansas have had schools develop state-approved Engineering and Applied Mathematics CTE pathways. Both states are transitioning to Perkins V, and EbD™ will work well to help states address their Perkins V needs. ITEEA oversees EbD™ and has already identified national industry-recognized certifications that EbD™ learners can successfully acquire that will help states address this aspect of Perkins V. Utilizing EbD™ can help schools address other priorities of Perkins V, and this breakout will explore these priorities.

Facilitators: Clelia McCrory, ESSDACK Career Education Specialist, KS and Steven Parrott, Technology & Engineering Principal Consultant, Illinois State Board of Education

3:00pm–3:55pm

I-STEM Education in Action Share

Closure: Opportunities and Next Steps

Integrative STEM provides many opportunities for moving forward. During the two days, information has been provided that will help frame how STEM can be implemented. This session will build upon

that information to offer opportunities that are available to make STEM a reality in any school or district.

Presenters: Nancye Hart, Interim Director, ITEEA's STEM Center for Teaching and Learning™; Troy Blunier, President CSL and Instructional Assistant Professor, Illinois State University

1:00pm–4:50pm

EbD Labs

High School

Foundations of Technology (*Grades 9-10*)

Foundations of Technology prepares students to understand and apply technological concepts and processes that are the cornerstone for the high school technology program. Group and individual activities engage students in creating ideas, developing innovations, and engineering practical solutions. Technology content, resources, and laboratory/classroom activities apply student applications of science, mathematics, and other school subjects in authentic situations.

Middle School

Invention and Innovation (*Grade 7*)

Learn all about invention and innovation! Explore opportunities students have to study the history of inventions and innovations, including their impacts on society. Learn about the core concepts of technology and about the various approaches to solving problems, including engineering design and experimentation. Discover how students apply their creativity in the invention and innovation of new products, processes, or systems. Learn about how various inventions and innovations impact lives. Another important aspect of the program is the use of inquiry and design-based instructional strategies as a curriculum delivery model. Design challenges are used not only as a strategy for student engagement, but also to foster the development of creativity and innovative thinking.

Elementary

EbD-TEEMS (*Grades 3-6*)

The EbD-TEEMS™ Integrative-STEM Curricula for Grades 3-6 program leverages technological design challenges in an environmental context as the focus for learning. Science and mathematics conceptual development is supported through deliberate and strategic integration of key content and skills, and as the result of aligning the conceptual sequence of the EbD-TEEMS™ Integrative-STEM Curricula for Grades 3-6 to the conceptual sequence of widely adopted science and mathematics curricular programs. A central design component that is unique to the EbD-TEEMS™ program is the use of the Grand Challenges for Engineering identified by the National Academy of Engineering as a context for problem solving. Another important aspect of the program is the use of inquiry and design-based instructional strategies as a curriculum delivery model. Design challenges are used not only as a strategy for student engagement, but also to foster the development of creativity and innovative thinking.

EbDLabs™

EbDLabs™ provide an excellent opportunity for teachers and other educators to experience one of the Engineering byDesign™ (EbD™) courses in a workshop environment. Comprehensive professional development is provided for each course or instructional component. Whether or not you are in a Consortium state, whether you are currently teaching an EbD™ course, or just want to find out more—these workshops are not to be missed. All EbDLabs™ will be hands-on, minds-on, preparing teachers with the fundamentals necessary to implement the materials.



\$50 each; ticket required
Limit: 30 participants

Computer/Smart Device required for all EbDLabs™.

Thursday, March 12, 1:00pm–4:50pm

Elementary School EbDLab™ (Grades PreK–2)
EbD-TEEMS™: PreK-2

Middle School EbDLab™ (Grades 6–8)
Engineering for All (Efa)

High School EbDLab™ (Grades 10–12)
Technological Design

Friday, March 13, 1:00pm–4:50pm

Elementary School EbDLab™ (Grades 3–6)
EbD-TEEMS™: 3–6

Middle School EbDLab™ (Grade 7)
Invention and Innovation

High School EbDLab™ (Grades 9–10)
Foundations of Technology

STEM Professional Learning Session Highlights

In addition to generalized Integrative STEM Learning Sessions, Baltimore Programming includes specialized sessions on Girls and Women in STEM, Diversity and Underserved Populations, Elementary STEM, International, and Technology and Engineering Educators of Maryland and Pennsylvania.

Panel sessions will be presented on 3-D Printing/Scanning and Graphic Arts, STEM Careers, Robotics, Mastering Social Media, and Animation Mathematics/App Creation.

Sample STEM Learning Sessions:

- Navigating the ITEEA Conference & New Member Support
- Developing a K-12 I-STEM Program: Overcoming the Challenges
- Family STEM Night: The Ultimate Community Outreach
- Planning for the Future of Technology and Engineering Education
- Adaptive Design: Engaging Students to Make Life Easier for Others.
- Measuring the Efficacy and Reach of Your STEM Programming
- Creating a STEAM Space from the Ground Up
- Failure in the Classroom
- Problem Framing: Improving Student Success in Engineering Problem Solving
- ROAVcopters - Bridging I-STEM Literacy and Careers
- Cultivating Creativity in the Classroom
- EbD Safety Micro-badging and More!
- Engineering for Social Good: STEM Projects that Change Lives



International Sessions/PATT (Pupils Attitudes Towards Technology)

PATT is an international community of technology education colleagues (researchers, teacher educators, teachers, etc.) who are interested in educational research as a support to developments in technology teaching. PATT is open to all. There is no membership requirement. PATT sessions at the ITEEA Annual Conference can be attended by all conference participants. The PATT registration package includes registration for the ITEEA Conference, the International Luncheon, PATT Reception, and Electronic Proceedings. The PATT strand at the ITEEA conference also includes an international roundtable discussion in which snapshots from different countries are presented.



The PATT/International Sessions at the 82nd Annual ITEEA Conference are directly related to the theme of the overall conference. These sessions specifically aim to present and discuss papers (1) from a variety of countries and (2) with a research character. As such, the PATT sessions function as a research-oriented international subconference of the ITEEA Annual Conference. PATT sessions offer U.S. ITEEA members an opportunity to get an orientation of what goes on in the rest of the world in terms of technology education developments. For international participants, the International/PATT sessions offer a comfortable combination of an international meeting and the opportunity to see developments in the USA by also attending other ITEEA sessions. PATT programming can be found at: www.iteea.org/Activities/Conference/ITEEA_Conference_2020/161486.aspx#tabs. Proceedings of previous PATT/International conferences can also be found on the ITEEA website: www.iteea.org/PATTConferences.aspx.



2020 STEM Showcase and TEECA Educational Display Competition

Bringing Teachers and Ideas Together

Thursday, March 12, 2020
4:00pm–5:30pm

The ITEEA STEM Showcase is an exhibition of best practices in the teaching of technology and engineering education. The Showcase provides a forum for teachers, TSA Advisors, and others to feature an idea, technique, or best practice related to learning activities, marketing materials, career guidance, facility design, program design, assessment methods, equity, or classroom and laboratory management techniques. Don't miss out on this unique learning and networking opportunity!

It is sure to be an exciting event! For more information, contact Katie de la Paz at kdelapaz@iteea.org.

The STEM Showcase is an exhibition of best practices in the teaching of technology and engineering education.

TEECA Competitive Events

(Technology and Engineering Education Collegiate Association)

TEECA is the single largest body of preservice technology and engineering teachers in the nation. TEECA is well represented at the ITEEA Annual Conference, with over 20 universities participating annually, as well as over 300 preservice teachers, faculty advisors, and other state education officers from around the nation in attendance. TEECA hosts a number of competitions at the ITEEA Annual Conference and holds an awards program on Friday evening to celebrate and award the winners. www.iteea.org/teeca_competitions.aspx



Wednesday, 8:30pm-10:00pm
Technology Challenge

Thursday, 8:00am-3:30pm
VEX Robotics

Thursday, 1:00pm-3:00pm
Transportation

Thursday, 4:00pm-5:30pm
Educational Display Contest

Thursday, 6:00pm-9:00pm
Manufacturing

Thursday, TBD on-site
Communication Turn-In

Friday, 8:00am-11:00am
Teaching Lesson

Friday, 11:00am-12:30p
Problem Solving

SPONSORSHIPS

*are available for some
TEECA Competitive Events.
Contact Bob Jonas at
bjonas@iteea.org.*

Council and Other Programming

These councils and groups will hold meetings and offer programming during the ITEEA conference.

Programming is posted on the ITEEA website at:
www.iteea.org/Activities/Conference/ITEEA_Conference_2020/161486.aspx#tabs



Additional Conference Programming

Wednesday, March 11, 2020

8:00am-11:30am	ITEEA Executive Committee Meeting
12:00pm-5:00pm	ITEEA Board Meeting
4:00pm-6:00pm	CTETE Executive Committee Meeting
8:00pm-9:30pm	ESC Board Meeting
8:00pm-10:00pm	STEL Revision Leadership Meeting
8:00pm-10:00pm	CTETE Yearbook Committee Meeting

Thursday, March 12, 2020

7:00am-8:30am	President's Roundtable Breakfast (for State Affiliate Reps/Leadership Teams and Invitation Only)
7:30am-8:45am	CSL Awards Breakfast and Business Meeting
8:00am-9:00am	Tech Talk Café
12:00pm-1:30pm	International/PATT Luncheon
11:00pm-12:00pm	Networking and Stimulating Research
2:00 PM-5:00pm	Project Excite (CS 4 All)
5:30 PM-6:30pm	ITEEA Opening Reception

Friday, March 13, 2020

7:00am-8:45am	FTEE Maley "Spirit of Excellence" Breakfast
7:45am-8:45am	CSL/Administrator Networking Breakfast
11:00am-12:15pm	ITEEA Committee and Review Board
12:15 PM-1:15pm	ITEEA Sweet Treats Celebration
1:00 PM-4:00pm	EbD™ Consortium State Directors Meeting
1:00 PM-4:00pm	CTETE Business Meeting
3:00 PM-4:00pm	Task Force Work Session
4:00 PM-5:00pm	Governance Session
4:00 PM-5:00pm	EPT Reception
5:00 PM-6:00pm	EPT Exemplary Initiation
5:30 PM-6:30pm	PATT/International Reception
4:00 PM-5:30pm	ESC Post-Conference Board Meeting

Saturday, March 14, 2020

7:00am-8:45am	EPT Breakfast
7:45am-8:45am	Program Excellence Breakfast
9:00am-10:00am	CTETE Executive Board Meeting
10:15am-11:45am	ITEEA Awards and Recognition Brunch
12:00pm-3:00pm	ITEEA Board of Directors Meeting

Full conference programming is available at:
www.iteea.org/Baltoprogramming.aspx

Check out the Exhibit Hall

for Suppliers, Competition, Learning, and FUN!

Exhibits Open:

Thursday, March 12: 11:00am-6:00pm
Friday, March 13: 11:00am-2:00pm

Dedicated Exhibit Hours

Thursday, March 12: 11:00am-1:00pm
Friday, March 13: 11:00am-1:00pm

Exhibit in Baltimore!

ITEEA reaches more than 60,000 educators throughout the U.S. and Internationally and continuously evolves learning experiences and efforts to advance science, technology, design, and engineering.

We invite you to exhibit at ITEEA's Annual Conference to be part of the world's largest and most comprehensive expo for technology and engineering educators—bringing together qualified attendee decision makers and cutting-edge industry products and services to help advance STEM education.

For over 80 years ITEEA has delivered by connecting influential educators with cutting-edge technology, services, and new products for technology and engineering educators. Including, to name just a few, in these specialty areas:

- STEM/I-STEM
- Technology and Engineering Education
- Computer Sciences
- Programming
- Robotics
- Career and Technical Schools
- Mathematics
- Science
- Engineering
- Technology

ITEEA's exhibit hall offers everything, from cutting-edge technology and service providers to resource organizations and more. As the world's largest and most comprehensive expo for technology and engineering educators, the 2020 ITEEA conference offers solutions to help advance STEM education.

So make plans now to check out the state-of-the-art products and services in the hall to help you excel in the classroom. Chart your own journey to visit suppliers that most interest you!

Exhibitors: Do not miss this opportunity to showcase your products and services in front of thousands of educators as they gather at a convenient Baltimore destination.

To exhibit or for more information, Contact Bob Jonas at 703-609-3974 or bjonas@iteea.org.

ITEEA Dream Ride...Go Baby Go Style!

Go Baby Go! provides mobility (and play!) to very young children in the form of adapted toy ride-on cars. At this special showcase event, Technology and Engineering Education educators and students hope to introduce the larger T&EE community to Go Baby Go!

Over the course of the conference, faculty and students will be adapting several motorized ride-on cars near the Exhibit Floor. All conference attendees are encouraged to stop by for as little or as long as they'd like to see the program in action. On Friday the cars will be donated to children with special needs from the area, who'll "test drive" their new rides before taking them home.



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Pitsco Education
SDI Innovations
Switch Vehicles, Inc.

Texas Instruments
The National Academy of Future
STEM Innovators
Unruly Studios, Inc.

Registration Information

Preregistration is now open at www.iteea.org/Registration_2020.aspx.

On-Site Registration and EbD™ Learning Lounge Hours

ITEEA Registration and EbD™ Learning Lounge:
Wednesday, March 11, 11:00am-5:00pm
Thursday, March 12, 8:00am-5:00pm
Friday, March 13, 8:00am-3:00pm

ITEEA Preregistration pickup only:
Wednesday, March 11, 8:00am–11:00am

Registration and the EbD™ Learning Lounge are both located in the Baltimore Convention Center.

Preregistration Discounts

Register prior to February 14, 2020 and save 15% on conference registration fees. Preregistration pricing is \$390 for ITEEA members and \$535 for nonmembers. **After February 14, full conference rates of \$475 for members and \$595 for nonmembers will apply.**

www.iteea.org/Registration_2020.aspx

Preregistration Prize Drawings

Names of those registered by February 14 will be entered into drawings for a \$100 Amazon Gift Card. Prize winners will be announced at the General Sessions on Thursday and Friday mornings. You must be present to win.

ITEEA Preconference Workshops

Workshops will be held on Wednesday, March 11 and carry a \$50-\$115 registration fee. You must be registered for the conference and pay the workshop fee in order to attend. The elementary workshop on Wednesday afternoon is \$50.

Professional Development Learning Sessions

Sessions are scheduled at regular intervals and generally last 45-50 minutes. All ITEEA Professional Development Learning Sessions will take place at the Baltimore Convention Center. Please refer to the conference app or the final conference program for further details.

Refund Policy

ITEEA conference registration refunds will be considered when requested in writing prior to February 14, 2020. All refunds are subject to a \$50 processing fee, which will be deducted from the total. Refund will be issued following the conference. After February 14, 2020 no refunds will be granted. **Meal functions, workshops, and the educational field trips are nonrefundable.**

Make the Most of Your Conference Experience with the ITEEA Mobile App!

Prior to the 2020 conference you will be able to download the official ITEEA mobile app to access events, speaker information, exhibitors, and much more! The updated 2020 app will guarantee less walking and keep your day structured—all from the palm of your hand:

- Detailed agenda at your fingertips.
- Meeting room and exhibit floor maps.
- Cyber networking – including speakers and exhibitors.
- Polls, surveys, and more.
- Browse exhibitors, mark your favorites, route to various booths, take notes on them, and more!
- Interactively add sessions from the app to your custom app schedule, then sync across your multiple devices!
- Stay up to date with real-time alerts.
- Follow the social media buzz; even tweet from the app #iteea2020!
- Browse local Baltimore restaurants, things to do, and sights to see and reference helpful travel information and much more!

More information will be available soon!

Limitations and Liability

The International Technology and Engineering Educators Association, its directors, employees, contractors, consultants, committees, and hosting organizations are not responsible for any personal injury, loss, or damages resulting from travel to, from, during, or as a result of attendance at the 82nd Annual ITEEA Conference, nor for any expenses incurred as a result of travel arrangement changes for any reason, including strikes, illness, weather, acts of God, national security breaches, or other causes.

ITEEA HAS CREATED A WEBPAGE where 2020 Baltimore conference attendees can access coupons and other offers from Baltimore restaurants and retailers for their time onsite. The offers will also be available via ITEEA's conference app, which will be released in late February. www.iteea.org/168158.aspx

Accommodations/ Housing Package



Official Housing Website

<https://book.passkey.com/e/49970093>

Hotel reservations are now being accepted for ITEEA's 82nd Annual Conference. Through this website you can book, modify, or cancel your hotel reservations at any time and receive updated information about the event. We look forward to seeing you in Baltimore!

If any night required for your stay is not available, if you need to make multiple reservations, or if you are experiencing any difficulty accessing this site, please call 800-282-6632 or 410-837-4636 (international), between the hours of 8:30am-5:30pm ET Monday-Friday, for assistance.

NOTE: ITEEA's special group rate for the conference is available ONLY through this housing website.

Hotel Information

Hilton Baltimore Inner Harbor

Address: 401 W. Pratt Street, Baltimore, MD, 21202

Rates: \$189 single/double (\$222.08 with tax), \$199 triple, \$209 quad.

Taxes: 17.5% per room, per room night (6% state, 9.5% occupancy, 2% TID tax)

Parking (rates as of August 2019):

Self parking: \$32.00 (\$35 IN/OUT Access)

Valet parking: \$45.00 (per night (IN/OUT))

Other Parking Information: MAX Height 7'2. \$35 per night IN/OUT Self Parking.

Hyatt Regency Baltimore

Address: 300 Light Street, Baltimore, MD, 21202

Rates: \$189 single/double (\$222.08 with tax), \$209 triple, \$219 quad.

Taxes: 17.5% per room, per room night (6% state, 9.5% occupancy, 2% TID tax)

Parking:

Discounted Self-Parking Fees: \$15 for daily or overnight for ITEEA Guests.

Valet parking at prevailing rate (no discount), \$42

Days Inn Wyndham Baltimore Inner Harbor

Address: 100 Hopkins Place, Baltimore, MD, 21202

Rates: \$139 single/double/triple/quad (\$163.33 with tax).

Taxes: 17.5% per room, per room night (6% state, 9.5% occupancy, 2% TID tax)

Parking: Self-Parking \$31 per day

Cutoff date for hotel reservations: February 14, 2020

ATTENTION STUDENTS: ITEEA has secured special **STUDENT HOUSING RATES** for TEECA students only. The link to student housing can be acquired from Trevor Robinson at trevor.robinson@usu.edu. You **MUST** be a TEECA student to qualify for this rate.

Important Information:

Please do not make hotel arrangements or share any personal information through any means other than through the ITEEA Housing Bureau. If you receive a call or email from anyone representing the Association, please be warned that we do not reach out to you for hotel reservations. This is a deceptive practice and is not in any way affiliated with the Association. You will not be contacted by the housing bureau unless there is a question about your existing reservation or in response to an inquiry made by you.



Baltimore, Maryland

There's a buzz about Baltimore... that makes people who visit fall in love with its vibe. With the world-famous Inner Harbor, renowned museums and attractions, award-winning restaurants, a locally loved music scene, and hip and historic neighborhoods, get ready to explore a truly authentic American city.

Baltimore is one of the nation's oldest ports: dating back more than three centuries, it was a major point of entry for immigrants from all over the world. Many key structures that were built in the early days of the city still stand today, a testament to the pioneering spirit and vision of its first residents. Our museums and historic sites transport you back in time and honor well-known personalities, celebrate significant industries, and commemorate great events.

Baltimore is famous for its beautiful waterfront, world-class museums, one-of-a-kind attractions, three centuries of history, and much more. With more than 130 attractions, museums, historic sites, and performing arts groups, Baltimore promises something for everyone.

Our shining jewel, the Inner Harbor, is surrounded by renowned attractions, a variety of restaurants, unique shopping, first-class hotels, and the Baltimore Visitor Center. It's all within a quick walk—or as we say, “just two feet away”—from the Baltimore Convention Center.

For the kid in all of us, there's a zoo, aquarium, science center, and nationally recognized children's museum conveniently located in the city. You can mix learning with fun at these and other sites that offer hands-on activities. In any season, there are endless opportunities to discover what Baltimore is all about, from touring Fort McHenry, the birthplace of our national anthem, to enjoying a day on the bay or an authentic crab feast.

In addition to being accessible, having a compact waterfront “convention campus” and excellent facilities and hotels, Baltimore is also a vibrant cultural center, a place with a sense of history and a destination that maintains a playful spirit and flavors all its own.

Airport

Baltimore/Washington International Airport (BWI)
Approximately 10 miles from airport to conference hotels.

Taxi

Service is available on a first-come, first-serve basis from the lower level curb of all terminals. All taxis are metered. Approximate cost from Baltimore/Washington International Airport to downtown hotels is \$35.00.

Local Transportation

The conference hotels are conveniently located only a few blocks from the Light Rail. Cost is \$1.90 each way, and hotels are closest to the Pratt Street Light Rail Station.

Directions

TO HILTON HOTEL

From 83 South: Follow 83 to Lombard Street. Right on Lombard Street. Left on Green Street, left on Pratt Street. Hotel is two blocks on the right.

From I-95 North: Exit 53 (395 North), stay in left lane. Turn left on Camden, right on Paca, right on Pratt Street. Hotel on the right. Please note that during Camden Yards events, Camden Street may be closed. From Exit 53 follow to Russell Street, turn right on Pratt. Hotel is on the right.

95 South through Ft. McHenry Tunnel: Take Ft. McHenry Tunnel to Exit 53 (395 North), stay in left lane. Turn left on Camden, right on Paca, right on Pratt Street. Hotel on the right. Please note that during Camden Yards events Camden Street may be closed. From Exit 53 follow to Russell Street, turn right on Pratt. Hotel is on the right.

ITEEA Conference Daily Commuters - Parking Options

For local attendees planning to drive in each day for the conference, the Orioles Stadium, Lot C is an option. It is a 10-minute walk to the Baltimore Convention Center. Daily parking is \$15 for 2-12 hours, \$24 for 12+ hours. Overnight parking is NOT permitted in this lot.

Directions to Lot C:

- **From the North or South:** From I-95, take Exit 53 to I-395. Exit right towards M.L. King Jr. Blvd. Take the Russell Steet exit. Turn right onto Lee Street. Lot C is on the right.
- **From Downtown:** Take Lombard Street or Pratt Street to Howard Street. Turn onto Howard Street south. Turn right at Conway Street. Veer left and continue south on the Warehouse Service Road. Continue straight into Lot C.

Directions to the Baltimore Convention Center and other parking information can be found at www.bccenter.org/p/attend/directions--parking.



Four Ways to Get Around Town

1. Charm City Circulator: Free bus service with four routes that go north-south and east-west to many attractions and hotels. Take the Bonner route to get from the Inner Harbor to Fort McHenry. The Circulator runs every 15-20 minutes, seven days a week: hours vary.

2. Baltimore Water Taxi: Baltimore's most scenic way to get around, with stops from the Inner Harbor to Canton. For a one-price, all-day pass, you can ride around the harbor or hop on and off to visit attractions and have lunch.

3. Electric Scooters: Baltimore's newest mode of transportation, Bird, Jump, Lime, and Spin electric scooters are available throughout the city. With an app, you can pick up a scooter wherever you find one, scoot around town, and drop the scooter when you are done. Helmets and drivers' licenses required.

4. MTA: Maryland's public transit authority operates the Light Rail and the Metro subway, plus more than 60 bus routes throughout the city. Check the website for schedules and routes at: mta.maryland.gov.