Join the American Society for Engineering Education in Columbus!

124th Annual Conference & Exposition

JUNE 25 – 28, 2017
COLUMBUS, OHIO

The ASEE Annual Conference and Exposition is the only conference dedicated to all disciplines of engineering and engineering technology education. As the premier event of its kind, the ASEE Annual Conference and Exposition fosters an exchange of ideas, enhances teaching methods and curricula, and provides unparalleled networking opportunities for engineering and engineering technology education stakeholders, including deans, faculty members, researchers, and industry and government professionals.

The conference features more than 400 technical sessions, with peer-reviewed papers spanning all disciplines of engineering education; distinguished lectures, including the main plenary; award receptions and banquets; the "Greet the Stars" orientation for new ASEE members and first-time conference attendees; and the ASEE Division Mixer. The Exhibit Hall is also home to several exciting events, including the "Focus on Exhibits" Welcome Reception, Brunch, Summertime Social, and Luncheon. We look forward to welcoming you to Columbus!

For detailed session information visit www.asee.org/osl.

SATURDAY, JUNE 24

- NEW THIS YEAR! Registration Open 4:00 pm – 7:00 pm
- P–12 Workshop 8:00 am – 5:00 pm
- ASEE Oversight Committee Meeting - 8:00 am – 10:00 am
- ASEE Finance Committee Meeting 10:00 am – Noon
- ASEE Executive Committee Meeting - 12:30 pm – 2:30 pm
- ASEE Long Range Planning - 2:30 pm – 4:00 pm
- ASEE Diversity & P12 Committee Meetings - 4:00 pm – 5:30 pm
- NEW THIS YEAR! Taste of Columbus 6:00 pm – 9:00 pm

SUNDAY, JUNE 25

- Registration Open - 7:00 am – 7:00 pm
- Exhibit Hall Open - 5:45 pm – 7:15 pm
- NEW THIS YEAR! Technical Session & Business Meetings 8:00 am – 9:30 am
- Finance Committee Meetings 8:00 am – 9:00 am
- NEW THIS YEAR! Technical Session & Business Meetings 9:45 am – 11:15 am
- ASEE Board of Directors Meeting - 9:00 am – 1:00 pm
- NEW THIS YEAR! Division Business Meetings & Technical Sessions 11:30 am – 1:00 pm
- Greet the Stars! New Members and First Time Attendees Luncheon 1:15 pm – 2:15 pm
- PIC I V Meeting 2:30 pm – 3:30 pm
- NEW THIS YEAR! Technical Session 2:30 pm to 3:45 pm
- Division Mixer - 4:00 pm – 5:30 pm
- Focus on Exhibits Welcome Reception 5:45 pm – 7:15 pm

MONDAY, JUNE 26

- Registration Open - 7:00 am – 5:00 pm
- Exhibit Hall Open - 9:30 am – 6:00 pm
- Monday Plenary - 8:00 am – 9:30 am
- Focus on Exhibits Brunch & NSF Poster Session - 9:45 am – 11:15 pm
- Technical Session & Business Meeting 11:30 am – 1:00 pm
- Technical Session & Business Meeting 1:30 – 3:00 pm
- Technical Session & Business Meeting 3:15 pm – 4:45 pm
- Focus on Exhibits Summertime Social 5:00 pm – 6:00 pm
- Division Social Events (Optional)

TUESDAY, JUNE 27

- Registration Open - 8:00 am – 5:00 pm
- Exhibit Hall Open - 8:00 am – 3:00 pm
- Technical Session & Business Meeting 8:00 am – 9:30 am
- CMC Industry Day Breakfast - 8:00 am – 9:30 am
- Tuesday Plenary - Best Paper Recognition & CMC Industry Speaker 9:45 am – 11:15 pm
- Focus on Exhibits Lunch & ASEE Divsion Poster Sessions - 11:30 am – 1:00 pm
- ASEE Strategic Doing Session 11:30 am – 1:00 pm
- Technical Session & Business Meeting 1:30 pm – 3:00 pm
- CMC Industry Day Technical Session - 1:30 pm – 3:00 pm
- Technical Session & Business Meeting 3:15 pm – 4:45 pm
- ASEE Town Hall on Association Finances 3:15 pm – 4:45 pm
- CMC Industry Day Technical Session 3:15 pm – 4:45 pm
- Division Bussiness Meetings Only (Optional) - 5:00 pm – 6:00 pm
- Institutional Council Reception (by Invitation Only) 7:00 pm – 8:30 pm
- Division Social Events (Optional)

WEDNESDAY, JUNE 28

- Registration Open - 8:00 am – 3:00 pm
- Technical Session & Business Meeting 8:00 am – 9:30 am
- 2017/2018 ASEE Board of Directors Meeting
- Distinguished Lecture 9:45 am – 11:15 am
- Technical Sessions & Business Meetings 11:30 am – 1:00 pm
- ASEE Annual Awards Luncheon 11:30 am – 1:00 pm
- Technical Session & Business Meeting 1:30 pm – 3:00 pm
- Annual Workshops Session 1 1:30 pm – 3:30 pm
- Technical Session & Business Meeting 3:15 pm – 4:45 pm
- Annual Workshops Session 2 3:45 pm – 5:45 pm
- ASEE President's Farewell Reception 6:00 pm to 7:00 pm
- International Forum 8:00 am – 5:00 pm

14TH ANNUAL WORKSHOP ON PREK-12 ENGINEERING EDUCATION

Presented by Dassault Systèmes

Date: Saturday, June 24, 2017
Location: Columbus Convention Center
Time: 7:30 a.m. - 5:00 p.m.

This day-long program for teachers and engineering educators will provide an energizing, interactive overview of successful engineering education instruction for PreK-12 learners.

NEW to the 2017 workshop is the Counselor's Connection, a track for PreK-12 academic advising/counseling professionals.

All attending PreK-12 Teachers will receive a complimentary pass to participate in the Wednesday workshops of the 124th ASEE Annual Conference and exposition!

Back by popular demand: The PreK-12 Curriculum Showcase. All educators are invited to display their original ideas and innovative models that show how they integrate engineering and STEM. These will be shared with attendees during a special workshop session culminating the day.

6TH ANNUAL INTERNATIONAL FORUM

Presented by Boeing

Date: Wednesday, June 28, 2017
Location: Hyatt Regency Columbus
Time: 7:30 a.m. - 7:00 p.m.

The International Forum brings together engineering academics and industry professional from around the globe to share novel engineering education initiatives, experiences, and best practices. This is the premier event for non-U.S. and Canadian engineering education faculty members to interact with their colleagues on issues related to preparing the new "global engineer," and is conducted in collaboration with sister societies devoted to engineering education. Keynote and plenary speakers for 2017 include:

- **Martin Vigild,** president of the European Society for Engineering Education (SEFI) and senior vice president of the Technical University of Denmark
- **B.L. (Rama) Ramakrishna,** director of National Academy of Engineering's Grand Challenge Scholars Program
- **Fei-Yue Wang,** of the Chinese Academy of Sciences, discussing iSTREAM, a new K-12 science education program for the IT era
- **Michael Auer,** co-founder of the International Association of Online Engineering, speaking about online engineering education—global needs and opportunites.

Can't travel to Columbus? This year's forum will feature a virtual session!

S152 - 2017 COMMUNITY ENGAGEMENT DIVISION SERVICE EVENT—TOY ADAPTATION FOR CHILDREN WITH SPECIAL NEEDS

Sponsored by Virginia Tech

Date: Saturday, June 24, 2017 1:00 PM to 4:00 PM
Location: Ohio State University
Time: 1:00 p.m. tp 4:00 p.m.

Free ticketed event

Join us for our annual community engagement project. This year the Community Engagement Division has partnered with the Toy Adaptation Program at Ohio State University to host an adaptive toy event. Many toys rely on switches, toggles, or buttons to work, but these can be difficult for some children with special needs to activate.

During this event, we will reverse engineer everyday toys and add an adaptor that can be used with a variety of switches to allow children with special needs to enjoy and use the toys. Adapted toys often cost four or five times more than the standard versions; however, the toys that we adapt will be donated to local toy libraries and families, giving their children access to a large variety of toys.

You also will have the opportunity to talk with community and campus partners to learn more about how they have established this program and how you may be able to bring this to your campus.

S760 – NEW THIS YEAR! TASTE OF COLUMBUS & FLAVORS OF P-12

Date: Saturday, June 24, 2017
Location: Battelle Grand, Columbus Convention Center
Time: 6:00 p.m. – 9:00 p.m.

Free ticketed event

Join your friends and colleagues as we showcase our host city COLUMBUS!

This event will feature food from local restaurants, local attractions, games, prizes, and a series of P-12-related hands-on activities.

A special event for all to enjoy!

ASEE ACTIVE! GROUP WALK/RUN EVENT

Dates: Sunday, June 25; Monday, June 26; Tuesday, June 27, 2017
Location: Arnold Schwarzenegger Statue
Time: 6:30 a.m. – 7:30 a.m.

Looking for people to run or walk outdoors with? Don't know the local scene?

Meet up with your colleagues at the Arnold (Schwarzenegger) Statue on N. High St. in front of the Convention Center at 6:30 am and we'll head out on a group run/walk highlighting the Scioto Mile, which contains over 175 acres of active greenspace along the Scioto River in the heart of Columbus. Pace and distance will be determined based on attendee preference; there will be at least one walking group and one running group available. All runners and walkers are welcome!

ASEE Active! is endorsed by the Ad Hoc Committee for Interdivisional Cooperation and the Connecting Us Team of the ASEE Board's Strategic Doing initiative, and is focused on building community among ASEE members through participation in healthy recreational activities.

SUNRISE GENTLE YOGA CLASS

Date: Sunday, June 25; Monday, June 26; Tuesday, June 27, 2017
Location: Ohio Center B, Columbus Convention Center
Time: 7:00 a.m. – 7:45 a.m.

Start your day with a renewing stretch and meditation class!

U460- GREET THE STARS! (FIRST TIMERS' ORIENTATION LUNCH)

Date: Sunday, June 25, 2017
Location: Regency Ballroom, Hyatt Regency Columbus
Time: 1:15 p.m. – 2:45 p.m.

Are you a new member? A first-time attendee? Join your friends, colleagues, and the ASEE Board of Directors at this special luncheon. Here we will discuss an overview of the conference and the benefits of membership.

Anyone who joined ASEE for the first time since January 1, 2017 and/or is a first-time Annual Conference attendee is eligble to attend.

U658 – ASEE DIVISION MIXER

Sponsored by Ohio State University

Date: Sunday, June 25, 2017
Location: Regency Ballroom, Hyatt Regency Columbus
Time: 4:00 p.m. – 5:30 p.m.

One of our most popular events!

The Division Mixer kicks off the conference with music, drinks, food, and colleagues. This event is both a networking opportunity and a chance for divisions to showcase and promote themselves to prospective members. Tables staffed by participating divisions may feature contests and prize giveaways.

This event is complimentary for all attendees.

U660B – FOCUS ON EXHIBITS: WELCOME RECEPTION

Date: Sunday, June 25, 2017
Location: Exhibit Hall A & B, Columbus Convention Center
Time: 5:45 p.m. – 7:15 p.m.

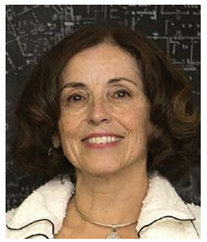
Join your colleagues at the Grand Opening of the Exhibit Hall, immediately following the Division Mixer (above). Our exhibit hall is packed with exciting products, solutions, and technologies, with new and inspiring content year after year. Roam the expansive space while enjoying refreshments, catching up with old friends, and making new ones.

This event is open to all attendees and will feature complimentary beer, wine, and refreshments.

M158 – ASEE MONDAY PLENARY

Date: Monday, June 26, 2017
Location: Battelle Grand, Columbus Convention Center
Time: 8:00 a.m. – 9:30 a.m.

Join your friends and colleagues at our Annual Monday Plenary.



FRANCE CÓRDOVA
Director
National Science Foundation

France Córdova is Director of the National Science Foundation, a position she has held since March 2014. Prior to her service at NSF, she was the president of Purdue University. An astrophysicist, her scientific contributions are in the areas of observational and experimental astrophysics, multispectral research on X-ray and gamma ray sources, and space-borne instrumentation. She has published more than 150 scientific papers.

The Monday Plenary also will feature the National Student STEM Winners.

M260C – BACK BY POPULAR DEMAND! FOCUS ON INNOVATION PAVILION

Date: Monday, June 26, 2017
Location: Exhibit Hall A & B, Columbus Convention Center
Time: 9:45 a.m. – 11:15 a.m.

Join your friends and colleagues at a special Q&A with our National Student STEM Winners.

Located in the back of Exhibit Hall A&B.

M260B – FOCUS ON EXHIBITS: BRUNCH & NSF GRANTEES POSTER SESSION

Date: Monday, June 26, 2017
Location: Exhibit Hall A & B, Columbus Convention Center
Time: 9:45 a.m. – 11:15 a.m.

Our exhibitors welcome you back for food and drink to start the day. Whether it's a NASCAR, 3-D printer, or quality textbooks for your classes, you'll likely find something interesting in the hall.

This event is complimentary for all attendees.

M360 – GREET THE STARS! NEW MEMBERS AND FIRST-TIME ATTENDEES LUNCHEON

Date: Monday, June 26, 2017
Location: Regency Ballroom, Hyatt Regency Columbus
Time: 11:30 AM – 1:00 PM

Are you a new member? A first-time attendee? Join your friends, colleagues, and the ASEE Board of Directors at this special luncheon.

Here we will discuss an overview of the conference and benefits of membership.

(Anyone who joined ASEE for the first time since January 1, 2017 is eligible to attend).

M660 – FOCUS ON EXHIBITS: SUMMERTIME SOCIAL

Date: Monday, June 26, 2017
Location: Exhibit Hall A & B, Columbus Convention Center
Time: 5:00 p.m. – 6:00 p.m.

Nothing says summer like a refreshing glass of sweet, cold lemonade. Escape the hot June temps and see what's "hot" on the Exhibit Hall floor.

This event is complimentary for all attendees.

T257 – TUESDAY PLENARY

Date: Tuesday, June 27, 2017
Location: Battelle Grand, Columbus Convention Center
Time: 9:45 a.m. – 11:15 p.m.

Join your friends and colleagues as we recognize the winners of the National Outstanding Teaching Award, and the 2016 Best Overall PIC Paper, Overall Best Zone Paper, and Best Diversity Paper.

The Corporate Member Council keynote speaker also will be featured.

JEFFREY WADSWORTH
President, CEO
Battelle Memorial Institute

Jeffrey Wadsworth is president and CEO of Battelle Memorial Institute, the world's largest nonprofit R&D organization, headquartered in Columbus, Ohio. Jeff worked at Stanford, Lockheed, and Lawrence Livermore National Laboratory prior to joining Battelle in 2002 as part of the White House Transition Planning Office for the Department of Homeland Security (DHS). He was then director of Oak Ridge National Laboratory and subsequently headed Battelle's Global Laboratory Operations, directing laboratories for the U.S. Department of Energy, DHS, and others. He became Battelle's eighth president and CEO in 2009. Jeff earned bachelor and doctoral degrees at Sheffield University in England and has published nearly 300 scientific papers, one book, and holds four U.S. patents. He has six honorary doctorates, fellowships in three technical societies, is a member of the National Academy of Engineering and the Chinese Academy of Engineering. He currently serves on the board of trustees at Ohio State University where he recently finished serving as the board chairman. Jeff is helping to lead national efforts to enhance STEM (science, technology, engineering, and math) education through the launch of STEM schools and developing state and national networks of STEM schools.

BEST OVERALL PIC PAPER: PIC III
Kurt Paterson, James Madison University; **Chris Swan,** Tufts University; D**avid Watkins,** Michigan Technological University
Paper: *Going is Not Knowing: Challenges in Creating Intercultural Engineers*

BEST OVERALL ZONE PAPER: ZONE III
Norman Dennis and **Edgar Clausen,** University of Arkansas
Paper: *Clinical Faculty Development Program*

BEST DIVERSITY PAPER
Vanessa Svihla, Abhaya Datye, Jaime Gomez, Victor Law, and **Sophia Bowers,** University of New Mexico
Paper: *Mapping Assets of Diverse Groups for Chemical Engineering Design Problem Framing Ability*

T360A – FOCUS ON EXHIBITS: LUNCH & ASEE DIVISION POSTER SESSIONS SPONSORED BY NORTHROP GRUMMAN

Date: Tuesday, June 27, 2017
Location: Exhibit Hall A & B, Columbus Convention Center
Time: 11:30 p.m. – 1:00 p.m.

ASEE Division Poster Sessions are available for perusing over lunch. If there's a booth you've yet to explore, this closing Exhibit Hall session will also be your last chance.

This event is complimentary for all attendees.

T360B – BACK BY POPULAR DEMAND! FIRST ROBOTICS COMPETITION

Date: Tuesday, June 27, 2017
Location: Exhibit Hall A & B, Columbus Convention Center
Time: 11:30 p.m. – 1:00 p.m.

W360 – ASEE ANNUAL AWARDS CEREMONY AND LUNCH

Date: Wednesday, June 28, 2017
Location: Franklin AB, Hyatt Regency Columbus
Time: 11:30 a.m. – 1:00 p.m.

ASEE offers awards in a variety of areas, from best paper and teaching recognition, professional and technical honors, to a lifetime achievement award. This event showcases some of ASEE's best and brightest.

Award winners and their guest are complimentary; all others can attend for $50.

NEW THIS YEAR! WEDNESDAY WORKSHOPS

Date: Wednesday, June 28, 2017
Location: Columbus Convention Center
Time: 1:30 p.m. – 5:45 p.m.

The ASEE Annual Conference workshops have been moved to Wednesday! They will feature workshops from divisions such as ERM, New Engineering Educators Division, Liberal Education/ Engineering & Society Division, Design in Engineering Education Division, Biomedical Division, Continuing Professional Development Division, and many others. Be sure to check it out!

DISTINGUISHED LECTURE SERIES

Sponsored by WebsEdge

Date: Wednesday, June 28, 2017
Location: Columbus Convention Center
Time: 9:45 a.m. – 11:15 p.m.

W111 – MAKING MANUFACTURING COOL AGAIN: MAGNET'S REVOLUTIONARY APPROACH TO ENGINEERING EDUCATION

For more than 30 years, MAGNET, the Manufacturing Advocacy and Growth Network, has championed northeast Ohio manufacturing, helping small manufacturers grow throughout the region. MAGNET offers a wide range of hands on consulting services to manufacturers as part of the national NIST Manufacturing Extension Partnership (MEP) and Ohio MEP. These services, which include product and process development, workforce initiatives, and lean/operations consulting, help companies by improving top line revenue and job retention as well as driving manufacturing and economic development in northeast Ohio. Through growing the region's manufacturing sector, MAGNET helps create more vibrant communities, increases economic inclusion, and builds a stronger northeast Ohio.

As part of the Ohio Manufacturing Extension Partnership, MAGNET exists to help grow manufacturing in northeast Ohio. To fill our growing workforce needs, MAGNET is heavily involved in not only placing students in co op and internship programs, but also making manufacturing cool at the high school level. MAGNET is actively promoting manufacturing careers and STEM education, thereby driving a broader and stronger pipeline for northeast Ohio manufacturers.

ETHAN KARP
President and CEO
Manufacturing Advocacy and Growth Network

Ethan Karp joined MAGNET in December 2013 as vice president of client services and marketing. Since being named president and CEO of MAGNET in March 2015, Karp has brought his wide range of experiences to drive business growth and economic prosperity through innovation in northeast Ohio. He has built an array of services and partnerships to provide the opportunities, resources, and knowledge necessary for local companies to expand through product development, new processes for manufacturing, and taking advantage of new markets.

W 114A – THE INTEGRATION OF TEACHING, LEARNING, AND ASSESSMENT: A DESIGN-BASED APPROACH

There have been numerous advances in our understanding of the nature of learning and knowing in multiple disciplinary areas. Unfortunately, relatively little of that knowledge has been systematically applied to the work of teaching, learning, and assessment in either K-12 or postsecondary educational environments. Going from research to practice is no simple matter, however. It requires a process of translation through design that is complex and time consuming. This presentation will focus on a design-based approach to the integration of teaching, learning, and assessment that draws upon ideas and principles derived from such National Research Council Reports as "How People Learn" (2000), "Knowing What Students Know" (2001), and "Education for Life and Work" (2013). The work of redesigning the College Board's Advanced Placement courses in Biology, Chemistry, and Physics will be used to illustrate such an approach to the application of critical principles about learning, instruction, and assessment. The presentation also will consider the interpersonal and intrapersonal dimensions of competence that, along with the cognitive dimension, are critical to success in education, the workforce, and adult life.

JAMES W. PELLEGRINO
Distinguished Professor,
College of Education
University of Illinois, Chicago

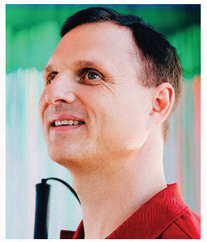
James W. Pellegrino is Liberal Arts and Sciences Distinguished Professor and Distinguished Professor of Education at the University of Illinois at Chicago. He also serves as co-director of UIC's interdisciplinary Learning Sciences Research Institute. Pellegrino's research and development interests focus on children's and adult's thinking and learning and the implications of cognitive research and theory for assessment and instructional practice. Much of his current work is focused on analyses of complex learning and instructional environments, including those incorporating powerful information technology tools, with the goal of better understanding the nature of student learning and the conditions that enhance deep understanding.

Pellegrino's unique blend of expertise—which combines knowledge of cognitive science, psychometrics, educational technology, instructional practice, and educational policy—has led to his appointment as head of several National Research Council/National Academy of Sciences study committees. These include chair of the Study Committee for the Evaluation of the National and State Assessments of Educational Progress, co-chair of the Study Committee on Learning Research and Educational Practice, and co-chair of the Study Committee on the Foundations of Assessment, which issued the report "Knowing What Students Know: The Science and Design of Educational Assessment." He chaired the recent NRC/NAS Study Committee on Deeper Learning and 21st Century Skills and co-chaired the NRC/NAS Study Committee on Developing Assessments of Science Proficiency in K-12. He has served as a member of various study committees, including the NRC/NAS/NAE Study Committee on Improving Learning with Information Technology, and chaired the NRC/NAS Panel on Research on Learning and Instruction for the Strategic Education Research Partnership. He also was a member of the NRC/NAS study committees on Test Design for K-12 Science Achievement; Science Learning: Games, Simulations and Education; and A Conceptual Framework for New Science Education Standards. He is a Fellow of AERA, a lifetime national associate of the National Academy of Sciences, and a past member of the Board on Testing and Assessment of the National Research Council. He is a lifetime member of the National Academy of Education and of the American Academy of Arts and Sciences.

Pellegrino, a senior associate editor of the Journal of Engineering Education, has supervised several large-scale research and development projects funded by the federal government, including the NSF-funded redesign of the College Board's Advanced Placement courses and exams in Biology, Chemistry, and Physics. He has authored or co-authored over 300 books, chapters, journal articles, and reports in the areas of cognition, instruction, and assessment, and has made numerous invited presentations at local, state, national, and international meetings and at universities throughout the world.

W247 - EMBRACING DISABLING CONSTRAINTS TO ENABLE NEW HORIZONS IN ENGINEERING EDUCATION

In 2014-2015, ASEE declared the Year of Action on Diversity in which engineering deans and members of the ASEE community pledged to "commit through specific action to provide increased opportunity to pursue meaningful engineering careers to women and other underrepresented demographic groups." Although more than 1billion people worldwide have a disability, within the engineering field these individuals continue to be an underrepresented voice that is seldom acknowledged or heard. This 2017 ASEE Distinguished Lecture, co-sponsored by the Student Division and the ASEE Diversity Committee, is to provide specific actions for further advancing the ASEE commitment to broadening participation within the engineering community—particularly to those living with impairments or disabilities. It will explore topics intended to stimulate engineering educators, students, and industry partners to collaborate in ways that establish inclusion and universal design as core tenants of our engineering culture across campuses worldwide.



MATT KING
Software Engineer
Facebook

Matt King is Facebook's first blind engineer and currently serves as an accessibility specialist on their accessibility engineering team. In that position, he assists engineers and designers across Facebook in understanding and incorporating accessibility into their products. King views his position as a powerful catalyst for breaking down barriers imposed by disability to make Facebook's products not only technically accessible, but also equally enjoyable for all people. Additionally, he leads contributions to standards development, such as WAI-ARIA, as a member of the W3C Web Accessibility Initiative. King initially became interested in developing assistive technologies while he was an engineering undergraduate, and his retinitis pigmentosa had progressed to the point where he had to use a screen reader for his coursework. He began to tinker with these technologies and came to know their developers. After college, King worked as an electrical engineer and later as a software developer in IBM's mainframe manufacturing business. A large portion of his free time was devoted to collaborating with developers of IBM screen-reading technologies. In 1998, he began his first full-time job as an accessibility professional, working for the IBM CIO to help improve accessibility for IBM employees. Eventually, he became a senior technical lead and was responsible for accessibility across all of IBM's websites and workplace tools. King's story serves as an inspiration for engineering students, faculty, administrators, and industry to create a more inclusive engineering culture through the development of innovative technologies and products. He has been featured on CNN's Technology and Money segment and Facebook's Employee Spotlight—highlighting the importance of accessibility to thousands of people across the United States and worldwide.

W220 - ADDRESSING THE CRITICAL NEED FOR EFFECTIVELY TRANSLATING ETHICS EDUCATION INTO THE ENGINEERING WORKPLACE

In light of the persistent and recent ethical failures in engineering practice (the VW emissions scandal, for example) there clearly is a problem with the translation of ethical education into ethical practice for engineers. While very few engineering educators expect that a course or two in ethics will be sufficient to ensure ethical behavior, too few support the creation of a culture of ethical engineering in practice—a central goal of ethics education. The hope remains that better preparation for practice will result in safer and more just practices in engineering. Indeed, in the majority of individual cases this is true; however, ethical failures still occur far too regularly. Directly related to this problem, we identified two key points from the open discussion at the 2016 ASEE panel session Infusing Ethics in the Development of Engineers: Exemplary Approaches. First, there are significant limitations in the translation of current education in engineering ethics into ethical practice in industrial settings. Second, overcoming these limitations will require more direct conversation between industry and academia about ethics education.

This distinguished lecture session is a response to those key issues. We believe that there are pressures in

the current culture of the engineering workplace that greatly challenge the ethical engineer on a daily basis to maintain a high ethical standard of practice. The speakers will address these pressures on engineers and suggest strategies to prepare future and current engineers to understand and successfully deal with them. The speakers will bring perspectives from two important industries that employ many engineers and from two academics who have collaborated with these industries to educate engineers in ethics. The session will begin with a brief but detailed overview of the problem, followed by two strategies for overcoming the challenge of translation. The session will conclude with time for Q&A and discussion of how these strategies or others might be adapted for other institutions.

MELISSA STAPLETON BARNES
Eli Lilly and Co.

Melissa Stapleton Barnes became Senior Vice President, Enterprise Risk Management, and Chief Ethics and Compliance Officer for Eli Lilly and Company in January 2013. She also serves as a member of the company's executive committee. Since joining Lilly in 1994, she has held a variety of legal and business roles, including general counsel for Lilly Diabetes and Lilly Oncology, market segment leader for national accounts, and Six Sigma black belt. Prior to joining Lilly, Barnes was a litigator at the law firm of Baker & Daniels in Indianapolis. She earned a B.S. with highest distinction from Purdue and a J.D. from Harvard Law School. In 2012, she was recognized by the Healthcare Businesswomen's Association as a "Rising Star." She currently serves on the board and executive committee of the Center for Performing Arts and is a board member of the Great American Songbook Foundation, Visit Indy, and the Children's Museum.

MICHAEL HILES
Cook Biotech, Inc.

Michael Hiles is the vice president for research & development and chief scientific officer of Cook Biotech Inc., a medical device firm specializing in the development of extracellular matrix technologies for medical purposes. Cook Biotech researches, develops, and manufactures surgical implants and topical medical devices from these materials. Hiles was the first employee of Cook Biotech, which now has nearly 200 employees and has provided more than 2 million patient treatments worldwide. Prior to moving to Cook Biotech, Hiles investigated these same materials for vascular grafts, ligaments, and bladder repair as an associate research scholar in the Hillenbrand Biomedical Engineering Center at Purdue University where he received his B.S. and M.S. degrees in Electrical Engineering and his Ph.D. in veterinary physiology and pharmacology from the Veterinary Medical School. He has published many articles on catheter-based medical instrumentation, cardiac fibrillation, pharmacological intervention in acute animal disease, biomaterials, tissue engineering, and biomechanics of soft tissues. Hiles is an inventor on more than 40 issued or pending patents, serves in an advisory capacity to several industry and academic groups, guest lectures at two academic institutions, and is an adjunct professor in both biomedical engineering and veterinary clinical sciences at Purdue.

JONATHAN BEEVER
University of Central Florida

Jonathan Beever is assistant professor of ethics and digital culture at the University of Central Florida. Before joining the faculty at UCF, Beever completed postdoctoral appointments at both the Rock Ethics Institute at Penn State University and the Weldon School of Biomedical Engineering at Purdue University. He received his Ph.D. from the Department of Philosophy at Purdue University. He is the co-founder of the Purdue Lectures in Ethics, Policy, and Science, an ongoing seminar series on contemporary bioethical issues and the Research Ethics Lecture Series at Penn State University. He has held fellowships with the Kaufmann Foundation, the Aldo Leopold Foundation, and the Global Sustainable Soundscape Network. Beever works and publishes at the intersections of environmental ethics and bioethics, focusing on questions of ethics, science, engineering, and the environment.

ANDREW O. BRIGHTMAN
Purdue University, West Lafayette (College of Engineering)

As the assistant head for academic affairs of the Weldon School of Biomedical Engineering, Brightman has overseen the development of both the undergraduate and the graduate curriculum and participated in the design and teaching of many courses, including the sophomore, junior, and senior-level professional development and engineering design courses. In addition, he has developed a curriculum for a Professional M.S. degree with a concentration in regulatory affairs for medical devices. The concentration includes three courses covering the key areas and documentation involved with pre-clinical and clinical studies, regulatory approval, and regulatory compliance. He has co-taught for 10 years a graduate-level course in Engineering Ethics and developed the ethics curriculum for the School. Brightman has a B.S. from North Carolina State University and a Ph.D. from Purdue. He has a background in analysis of signaling biomolecules and tissue engineering. He contributed to the research and development of the Small Intestinal Submucosa (SIS) technology at Purdue and with a partner company in the Purdue Research Park. Through this experience he gained knowledge about biomedical technology innovation and translation, which has helped to build the foundation from which he is able to contribute to engineering design, regulatory affairs, and ethical practice. Brightman's current research in ethics investigates a new pedagogy for training engineering students in ethical reasoning.

W248 - SPICE UP EVERY ENGINEER'S EDUCATION WITH A PINCH OF SYSTEMS ENGINEERING

When students graduate with an undergraduate engineering degree, they typically begin their careers as discipline engineers, having been educated as an electrical, mechanical, civil, software, biological, environmental, or similar engineer. They are well-versed in the foundations of engineering and the specifics of their discipline, and can quickly dive into the design of a circuit, the testing of a new software module, deciding whether a structure can withstand expected stress, or a myriad of other activities determined by where they work and what they learned in school. But what engineers often lack is an appreciation of the context in which they work and how to convey effectively their thoughts and decisions. They often lack an understanding of the "big picture" of how their work contributes to a larger team effort that engages many disciplines, and how their contributions fit into the life cycle of a product or service. They often understand what to do, but not why they are doing it or how the decisions they make will impact the larger success of the product or service.

Systems engineers focus on the big picture of product and service development and evolution. They determine what product or service needs to be developed in the first place and precisely specify what the product needs to do in order to meet those needs. They "architect" the system to meet those requirements. They consider not only the primary functions of the system, but also how the system will satisfy safety, security, reliability, and other quality properties on which users depend. They plan how the system might evolve to incorporate new technologies and changing needs. The list goes on and on.

Of course, relatively few people are full-time systems engineers. We need lots of discipline engineers but relatively few who focus on the overall system. Yet, every engineering student could benefit from a "pinch" of systems engineering education. When you look at what it takes to be a successful engineer today and in the future, here is what several leading authorities say: (1) The ASEE Project on the Attributes of a Global Engineer states that a global engineer must "possess a multi-disciplinary, systems perspective."

(2) The ASEE International Engineering Education Special Interest Group concluded that a global engineer must demonstrate an understanding of stages/phases of product life cycle (design, prototyping, testing, production, distribution channels, supplier management), demonstrate an understanding of project planning, management, and the impact of projects on various stakeholder groups, and possess the ability to communicate effectively in a variety of different ways, methods, and media.

(3) In "Thinking Like an Engineer," the U.K. Royal Academy of Engineering includes systems thinking as an "engineering habit of mind" that is central to sound engineering.

(4) The U.S. National Academy of Engineering identified 14 grand engineering challenges for the 21st century, such as making solar energy economical and securing cyberspace. Virtually all of those challenges are systems challenges.

(5) The U.S. President's Council of Advisors on Science and Technology published a report on "Better Healthcare and Lower Costs: Accelerating Improvement Through Systems Engineering," in which they recommended that "systems engineering know-how must be propagated at all levels; ... the United States [must] build a health-care workforce that is equipped with essential-systems engineering competencies that will enable system redesign."

These recommendations are challenging to follow in an already quite crowded engineering curriculum. So the question becomes, "What systems engineering should all engineering students learn, and how should this be done in a way that reflects the practical constraints of engineering education?" Over the past few years, a number of diverse approaches have been developed and tried in universities across the country, some of which have been explored by the International Council on Systems Engineering (INCOSE), which has, as one of its strategic objectives, adding

a pinch of systems engineering into the education of all engineers.

ABET has recently published draft changes to its accreditation criteria that update the definition of engineering design to more clearly reflect systems engineering activities, without ever using the phrase "systems engineering." The proposed definition of engineering design includes "identifying opportunities, generating multiple solutions, evaluating those solutions against requirements, considering risks, and making trade-offs ...possible constraints include accessibility cost, maintainability, sustainability, or usability." ABET effectively concludes that these activities are not just systems engineering; they are part of all good engineering.

The proposed lecture will explore the rationale for including a pinch of systems engineering into the education of all engineers, recount some of the experiences of educators across the nation doing this, and propose a series of recommendations on what next steps could be taken over the next several years across engineering programs nation-wide.

ARTHUR PYSTER
George Mason University

Arthur Pyster is a professor of systems engineering and operations research and the associate dean for research in the Volgenau School of Engineering at George Mason University. Pyster joined George Mason in August 2016 after a diverse career in academia, government, and industry. As associate dean, he leads efforts to grow the size and impact of the school's research portfolio. Beyond traditional teaching and research responsibilities, Pyster is also helping to expand the systems engineering program at George Mason to have a higher impact, especially on Northern Virginia. Previously, Pyster was a professor of systems engineering at Stevens Institute of Technology; deputy executive director and chief operating officer of the Department of Defense University Affiliated Research Center on Systems Engineering; senior vice president and director of systems engineering and Integration at SAIC; and deputy chief information officer and chief scientist for software engineering at the Federal Aviation Administration. Pyster is currently the director for academic matters and a member of the Board of Directors for the International Council on Systems Engineering (INCOSE), where he is also a fellow and recipient of the Founders Award. His research efforts have included leading the development of the Systems Engineering Body of Knowledge, the Graduate Reference Curriculum for Systems Engineering, and the Atlas theory of what enables systems engineers to be effective.

W233 - IGNITING AND SUSTAINING CREATIVITY AND INNOVATION FOR DIVERSE P-12 EDUCATION

The disparity between public and private K-12 education is growing and jeopardizes the quality of our nation's workforce and our country's ability to remain globally competitive. P-12 public education provides students between the ages of 3 and 18 years with the knowledge and skills necessary for post-secondary education, lifelong learning, and careers. Our country is faced with a shortage of engineering and technology workers due to the high dropout rates and the lack of funding and interest in pre-engineering in public schools, particularly at under-resourced, minority-serving schools. Andrew B. Williams discusses the mind-set and funding shift that must take place for government leaders, administrators, teachers, parents, and students to ignite and sustain curiosity, creativity, engagement, and innovation in schools. In this talk, Williams shares solutions and his experiences engaging P12 and undergraduate students in robotics, developing culturally responsive humanoid robotics curriculum for underrepresented girls, and spearheading engineering diversity as the former and first senior engineering diversity manager at Apple, Inc.

ANDREW B. WILLIAMS
Marquette University

Andrew B. Williams is a professor in the Department of Electrical and Computer Engineering and director of the Humanoid Engineering & Intelligent Robotics (HEIR) Lab at Marquette University. He served as the John P. Raynor, S.J., Distinguished Chair in Electrical and Computer Engineering at Marquette University from 2012-2016 and was the first senior engineering diversity manager at Apple, Inc.

At Marquette, he created and now leads the NSF National Robotics Initiative-funded Co-Robots for CompuGirls program, a collaboration with Arizona State University's School of Social Transformation to develop a culturally responsive humanoid robotics curriculum for underrepresented students. He received an NSF Innovation Corps for STEM Learning (I-Corps L) grant to lead an entrepreneurial team for low-cost humanoid robots for K-12 learning. He also co-led a team of faculty from the Marquette University College of Engineering and the Milwaukee Institute of Art Design in the initial development of a joint design and engineering program by engaging global engineering and design corporations headquartered in southeastern Wisconsin.

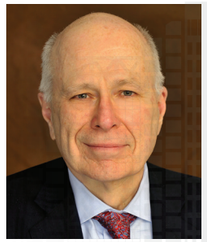
Prior to joining Marquette, Williams was a faculty member and Department Chair of Computer and Information Sciences at Spelman College in Atlanta, Ga.,and a research affiliate at the Georgia Institute of Technology's Human-Automation Systems Lab. At Spelman he founded and directed SpelBots, the first all-women, African American RoboCup autonomous robot soccer team, which came to be known nationally and internationally. In addition, he founded the $2 million NSF-funded Advancing Robotics Technology for Societal Impact (ARTSI) alliance of major research universities and HBCUs, which focused on undergraduate robotics research and faculty development with emphasis on the arts, health care, and entrepreneurship. He also co-led the formation of interdisciplinary informatics research and education teams at Spelman to advance research and increase STEM retention through a $2.5 million NSF-funded effort.

Williams has over 80 technical and educational publications and invited presentations in artificial intelligence, robotics, and K-12 education and outreach and has received grants from the National Institutes of Health and NASA, as well as NSF. He has been an invited participant in three national and international symposia sponsored by the National Academy of Engineering, including the second Global Grand Challenges Summit in Beijing. He has engaged industry to help secure funding and donations from corporations and foundations including Apple, Google, General Electric, Boeing, General Motors, Intel, and Coca-Cola for research and education.

Williams is treasurer of the National GEM Consortium Alumni Association, which represents thousands of African-American, Hispanic, and Native American engineers who have matriculated through Master's and Ph.D. STEM programs as GEM fellows. He received a B.S. and Ph.D. in electrical engineering from the University of Kansas and a M.S. in electrical and computer engineering from Marquette.

W206 - THE UNITED NATIONS SUSTAINABLE DEVELOPMENT GOALS: WHAT CAN ENGINEERING AND ENGINEERING TECHNOLOGY EDUCATORS DO?

The 2030 U.N. Sustainable Development Goals were approved in 2015 and began to be implemented in early 2016. There are 17 goals and 169 targets. Those goals are ambitious with the number one goal being to eliminate extreme poverty by 2030. Achieving the goals will depend heavily on the science and engineering communities finding innovative ways to improve quality of life for all while not over-stressing the environment. The U.N. established the Technology Facilitation Mechanism (TFM) to support implementation of the goals. The TFM will facilitate goal- oriented science and engineering collaborations and partnerships. This is being done in several ways, starting with a 10-member committee to ensure input from the scientific community, the private sector, and civil society into the SDG process. For sharing, there is an annual Multi-stakeholder Forum on Science, Technology and Innovation (STI) for the SDGs. Finally, an online platform as a gateway for sharing information on STI initiatives to support the SDGs is under development. The SDGs are already influencing business strategies for many multinational firms and are beginning to influence industry and government research agendas. This lecture will review the goals, provide an update on the second Multi-stakeholder Forum on STI, and outline ways that engineering faculty can engage and contribute through the science-policy interface. The lecture will close with a call for engineering and technology faculty to lead in ensuring that all engineering and technology graduates have an appropriate knowledge of sustainable development and how their specific field can contribute to achieving the SDGs.



E. WILLIAM COLGLAZIER
Co-chair, U.N. 10-Member Group, Former Science & Technology Adviser to the Secretary of State, and Visiting Scientist in the Center for Science Diplomacy at AAAS.

W258 - 2016 BEST PIC & BEST ZONE PAPER PRESENTATIONS

The 2016 Best Papers for the PICs and Zones will be featured in this special session.

Please note that Best Overall PIC Paper (PIC III) and Best Overall Zone Paper (Zone III) will be featured during the Tuesday Plenary.

BEST PIC PAPERS
PIC I
Peter Schuster and **James Widmann,** California Polytechnic State University
Paper: *All Active All the Time? What Are the Implications of Teaching a Traditional Content-Rich Machine Components/Mechanical Systems Design Course Using Active Learning?*

PIC II
Derek Reamon, Beth Myers, Jacquelyn Sullivan, and **Marissa Forbes,** University of Colorado, Boulder
Paper: *Exploring Student Impressions of and Navigations Through a Flexible and Customizable Multidisciplinary Engineering Program*

PIC IV
Angela Bielefeldt, University of Colorado, Boulder, and **Nathan Canney,** Seattle University
Paper: *Perspectives of Engineers on Ethical Dilemmas in the Workplace*

PIC V
Vedaraman Sriraman, Bobbi Spencer, Kimberly Talley, and **Araceli Ortiz,** Texas State University
Paper: *Early Internships for Engineering Technology Student Retention: A Pilot Study*

BEST ZONE PAPERS
Zone I
Kyle Moses and **Michael Petullo,** United States Military Academy
Paper: *Teaching Computer Security*

Zone II
Sally Pardue and **Nikolas McGehee,** Tennessee Technological University
Paper: *Upper Cumberland Rural STEM Initiative (UCRSI) STEMmobile: A Sustainable Model for K-12 Outreach*

Zone IV
Sandrine Fischer, Eric White, and **Kelli Yogi**
Paper: *Attentional Demand, Encoding, and Affective Payoff of Context-Rich Physics Problems*

W758 - PRESIDENT'S FAREWELL RECEPTION

Date: Wednesday, June 28, 2017
Location: Battelle Grand, Columbus Convention Center
Time: 6:00 p.m. to 7:30 p.m.

ASEE President Louis Martin-Vega hosts a reception as he passes the gavel to incoming President Bevlee Watford. Join your friends and colleagues at this closing event of the 2016 Annual Conference as we bid goodbye to Columbus and look forward to Salt Lake City!

For details on all sessions, go to *www.asee.org/osl*

This year's conference and exposition features an exciting schedule of activities in the Exhibit Hall, including refreshment breaks, product demonstrations, and interactive attractions.

EXPOSITION HOURS

Sunday, June 25	5:45 p.m. to 7:15 p.m.
Monday, June 26	9:30 a.m. to 6:00 p.m.
Tuesday, June 27	8:00 a.m. to 3:00 p.m.

'FOCUS ON EXHIBITS' EVENTS

"Focus on Exhibits" events are exclusive; no sessions or other events will be held during these times. This allows attendees to visit the Exhibit Hall floor and provides an excellent networking opportunity in a dynamic atmosphere. The 2017 ASEE Annual Conference will feature more than four hours of "Focus on Exhibits" events, all of which include complimentary food and drinks.

See the Conference Highlights section (above) for details about important events in the Exhibit Hall.

Also of note, our popular **Two-Year College Model Design Competition** will take place on Monday, June 26, from 9:45 a.m. to 11:15 a.m. during the brunch. In this annual contest sponsored by ASEE's Two-year College Division, teams of first- and second-year engineering and engineering technology students put robots they have designed and built through a series of challenges.

ASEE is pleased to partner again with ABET (formerly the Accreditation Board for Engineering and Technology). Below is a listing of ABET sessions being offered at the 2017 ASEE Annual Conference.

U599 – LISTENING SESSION: ACADEMIC ADVISORY COUNCIL (NEW!)

Panel - ABET Sponsored Sessions
Date: Sunday, June 25, 2017
Location: Room A110, Columbus Convention Center
Time: 2:30 p.m. to 3:45 p.m.

Are you aware that ABET has an Academic Advisory Council (AAC)? Did you know the AAC represents all four ABET commissions? Provosts, deans, and chairs from a variety of institutions across the United States populate the AAC. It is one of three councils that provide recommendations to the ABET Board of Directors on issues of importance, particularly to the academic community. This listening session will highlight the impactful work of the AAC, review its current initiatives, and invite you to present topics and issues for the AAC to consider working on to make meaningful and helpful changes to ABET's processes and practices.

T199A - HOW TO LEAD THE PREPARATIONS FOR AN ON-SITE VISIT

Panel · ABET Sponsored Sessions
Date: Tuesday, June 27, 2017
Location: Room A110, Columbus Convention Center
Time: 8:00 a.m. to 9:30 a.m.

Leading the institutional planning and execution for an on-site ABET visit involves creating an infrastructure of support from many groups of stakeholders. This session features a panel representing both the Engineering and Engineering Technology accreditation commissions and institutional representatives who hosted ABET visits during 2016. Best practices from the viewpoints of both program evaluators and institutional representatives will be of interest to institutional representatives and others preparing for on-site visits.

M399 - ABET ACCREDITATION INFORMATION SESSION 2017

Panel - ABET Sponsored Sessions
Date: Monday, June 26, 2017
Location: Room A110, Columbus Convention Center
Time: 11:30 a.m. to 1:00 p.m.

If you are new to ABET accreditation, or have programs that are seeking ABET accreditation for the first time, this session is for you. Topics include what types of programs are accredited; what the accreditation criteria and procedures are, and who writes them; who serve as evaluators and how they are assigned to your program; who makes final accreditation decisions and how; how assessment tools are used and misused in the ABET process; and to whom ABET matters (and why). Come ready with your questions and feedback for senior ABET representatives.

M499 - LISTENING SESSION: LEARN ABOUT CRITERIA 3 AND 5, AND SHARE YOUR THOUGHTS

Panel - ABET Sponsored Sessions
Date: Monday, June 26, 2017
Location: Room A110, Columbus Convention Center
Time: 1:30 p.m. to 3:00 p.m.

During the 2016 Summer Commission Meeting, we received substantial feedback on the Engineering Accreditation Commission's revised proposal of Criterion 3—Student Outcomes—and Criterion 5—Curriculum. This listening session will share the most recent news of these criteria and review engineering educator ideas and input.

M799 - INTERACTIVE FUNDRAISING CLINICS (NEW!)

Panel - ABET Sponsored Sessions
Date: Monday, June 26, 2017
Location: Room A110, Columbus Convention Center
Time: 6:00 p.m. to 7:30 p.m.

and

T699 – INTERACTIVE FUNDRAISING CLINICS

Date: Tuesday, June 27, 2017
Room A110, Columbus Convention Center
Time: 5:30 p.m. to 7:00 p.m.

New this year! These two invitational events will focus on advancement and major gift strategies for deans, associate deans, department chairs, and professors. One session will be an invitational roster of small colleges, the other for larger institutions, with their distinctive advancement needs and infrastructures. Each 90-minute session will begin with an interactive time for participants to set the discussions. During the second half of the clinic, senior advancement facilitators will review some guiding principles and best practices and then address audience questions.

T499A - BECOMING A PROGRAM EVALUATOR MIGHT BE FOR YOU!

Panel - ABET Sponsored Sessions
Date: Tuesday, June 27, 2017
Location: Room A110, Columbus Convention Center
Time: 1:30 p.m. to 3:00 p.m.

Each year, more than 2,000 academic administrators and faculty, industry and government officials, and technical professionals serve as ABET program evaluators, making initial accreditation recommendations and working together to ensure quality in technical education worldwide. This session provides information for prospective ABET volunteers and covers:

1. ABET's need for new volunteers
2. The nature of program evaluator work
3. What's in it for you
4. Threshold requirements for service and the program evaluator selection process
5. Training requirements
6. The program evaluator "life cycle"

T599 - WHAT'S NEW AT ABET 2017?

Panel – ABET Sponsored Sessions
Date: Tuesday, June 27, 2017
Location: Room A110, Columbus Convention Center
Time: 3:15 p.m. to 4:45 p.m.

ABET representatives will share findings from the Diversity and Inclusion committee as well as current activities and topics that are on the strategy horizon for ABET.

W199A - ABET LISTENING SESSION: ALTERNATIVE VISITS—NEW!!

Panel - ABET Sponsored Sessions
Date: Wednesday, June 28, 2017
Location: Room A110, Columbus Convention Center
Time: 8:00 a.m. to 9:30 a.m.

What might an ABET alternative visit look like in the future? Our Learning Center facility will serve as a resource for digitally connecting site-visit teams to institutions around the globe as well as utilizing technology to serve smaller institutions who are seeking reaccreditation. Alternative visits could also serve as a tool for globally dispersed evaluation teams. Attend this session to discover current conversations about how ABET might use alternative visit models, expanding our service offerings to existing ABET accredited programs.

Corporate Member Council Industry Day

T164 - INDUSTRY DAY: BREAKFAST

Date: Tuesday, June 27, 2017
Location: Delaware C, Hyatt Regency Columbus
Time: 8:00 a.m. to 9:30 a.m.

Free ticketed event
Corporate Member Council and College Industry Partnerships Division Joint Breakfast

T257 - TUESDAY PLENARY

Date: Tue. June 27, 2017

Location: Room A111, Columbus Convention Center
Time: 9:45 a.m. to 11:15 a.m.

Corporate Member Council keynote speaker **Jeffrey Wadsworth,** president and CEO of Battelle Memorial Institute, will also be featured.

T464 - INDUSTRY DAY: PANEL SESSION

Date: Tue. June 27, 2017
Location: Room A111, Columbus Convention Center
Time: 1:30 p.m. to 3:00 p.m.

T564 - INDUSTRY DAY: TECHNICAL SESSION 2

Date: Tue. June 27, 2017
Location: Room A111, Columbus Convention Center
Time: 3:15 PM to 4:45 PM

T766 - INSTITUTIONAL COUNCIL RECEPTION (BY INVITATION ONLY)

Social - Engineering Deans Council, Corporate Member Council, Engineering Research Council, and Engineering Technology Council
Date: Tuesday, June 27, 2017
Location: Urban Arts Space, 50 W. Town Street, Suite 130
Time: 7:00 p.m. to 9:00 p.m.

Free ticketed event—by invitation only.

THANK YOU TO OUR SPONSORS FOR THEIR OUTSTANDING SUPPORT!

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The Ohio State University
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NCEES advancing licensure for engineers and surveyors

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University of Dayton School of Engineering

Brightwood Engineering Education

LEADER

ARM

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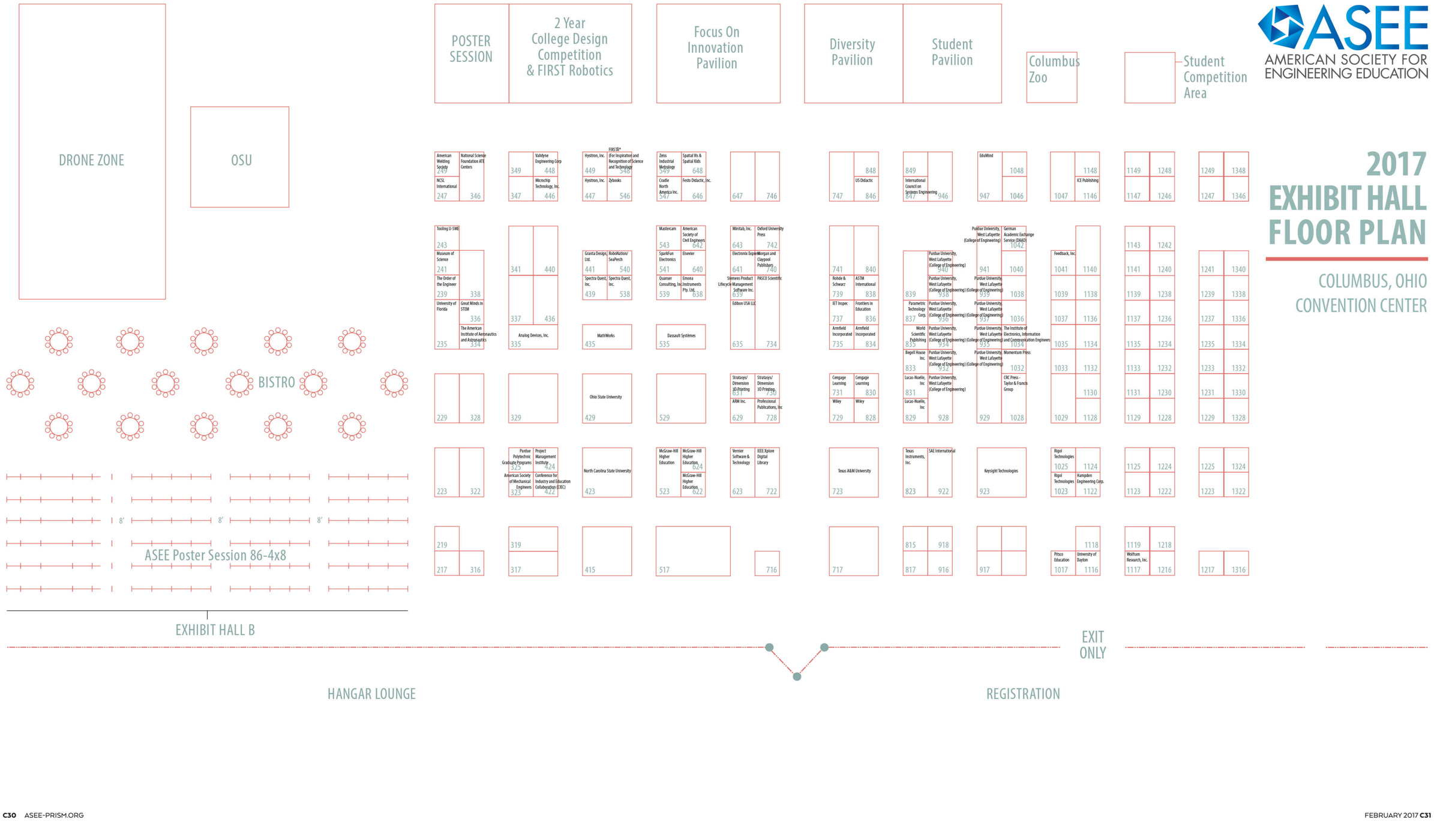


2017 EXHIBIT HALL FLOOR PLAN

COLUMBUS, OHIO
CONVENTION CENTER

REGISTRATION FEES

Rate Type 2017	Early ends 04/09	Advance 04/10 - 05/28	Regular 05/29
Member	US $700	US $750	US $800
Non Member	US $800	US $850	US $900
Life Member	US $85	US $85	US $85
Retiree Member	US $175	US $175	US $175
Student Member	US $0	US $0	US $0
Student Non Member	US $60	US $60	US $60
Industry Day**	US $290	US $290	US $290
Spouse/Guest	US $125	US $175	US $225
Child (7 - 16)*	US $35	US $35	US $35
Child (under 6)*	US $0	US $0	US $0

*AUTHORS
Please be advised all registration fees must be processed by ASEE Headquarters on or before April 9, 2017, at Midnight EST or your paper will be withdrawn. Please review the Author's Kit for more details.

*CHILDREN
Children under 12 are admitted FREE to the Exhibit Hall
Please note: Children under 12 must be accompanied by a registered adult at all times

**INDUSTRY DAY
The industry day rate is only available to members of industry who otherwise would not attend the ASEE Annual Conference and is valid for Tuesday, June 27, 2017, only. ASEE members/(co)-authors are not eligible.

K-12 TEACHERS
$250 for a one-day registration. To register at this rate, please email *conferences@asee.org*
K-12 Teachers are eligible for a one-day FREE Exhibit Hall Pass.
School ID is required

MILITARY
Active and retired military are eligible for a one-day FREE Exhibit Hall Pass
Military ID is required

ASEE MEMBERSHIP
Please be advised with the non-member professional rate, you will receive one year of ASEE membership. Not available for student rate.
The ASEE membership rates are as follows:
1. US $100 for United States residents
2. US $99 for Canadian residents
3. US $114 for all other countries
4. $89 for online membership only

Membership is not instant; it can take up to one month to be applied. If you are a non-member and interested in the ASEE membership rate for the 2017 Annual Conference, the last day you will be eligible to become a member and qualify for the ASEE new member rate is Friday, May 5, 2017.

CANCELLATION POLICY
Registration and ticket cancellations must be made in writing and must be received by ASEE-Convention & Seminar Corp. via mail (1818 N Street NW, Suite 600, Washington, DC 20036; Phone: (202) 649-3829; Fax: (202) 265-8504; E-mail: *registrar@asee.org* on or before Sunday, June 4, 2017. A $50 processing fee will apply to all cancellations. On-site refunds of any ticketed events cannot be honored. There are no exceptions to this policy.

HOUSING LOCATIONS AND INFORMATION

Hotel	Distance	Single	Double
Arena District Hyatt Regency (Headquarters)	Connected to Convention Center	$195	$195
Hilton Columbus Downtown	Connected to Convention Center	$185	$185
Crowne Plaza Hotel Columbus Downton	Connected to Convention Center	$159	$184
The Lofts by Crowne Plaza	Connected to Convention Center	$179	$196
Drury Inn & Suites Convention Center	Connected to Convention Center	$149	$149
Hampton Inn & Suites Downtown Columbus	Across the street from Convention Center	$169	$169
Red Roof Inn Columbus Downtown	One block from Convention Center	$139	$139
Residence Inn	4 blocks from Convention Center	$175	$175

DOWNTOWN COLUMBUS

American Society for Engineering Education

EXPERIENCE COLUMBUS
experiencecolumbus.com

1. **Hampton Inn & Suites Downtown Columbus**,
501 N. High St.
(Across from GCCC)
S/D: $169

2. **Hilton Columbus Downtown**,
401 N. High St.
(connected to GCCC)
S/D: $185

3. **Hyatt Regency Columbus**,
350 N. High St.
(connected to GCCC)
S/D: $195

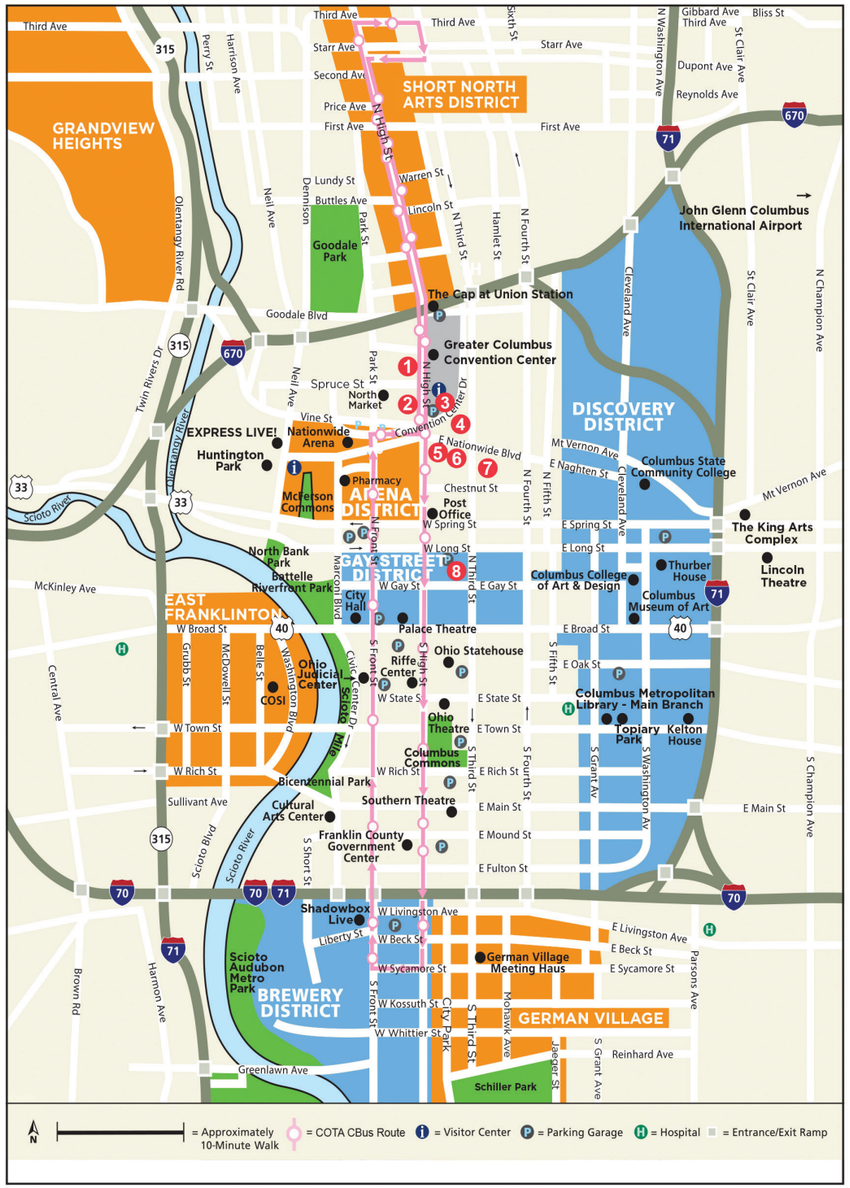
4. **Drury Inn & Suites Convention Center**,
88 E. Nationwide Blvd.
(connected to GCCC)
S/D: $149

5. **Crowne Plaza**,
33 E. Nationwide Blvd.
(connected to GCCC)
S: $159, D: $184

6. **The Lofts**,
55 E. Nationwide Blvd.
(connected to GCCC)
S: $179, D: $196

7. **Red Roof Inn Plus**,
111 E. Nationwide Blvd.
(one block from GCCC)
S/D: $139

8. **Residence Inn by Marriott Columbus Downtown**, 36 E. Gay St.
(4 blocks from GCCC)
S/D: $175



Key:
S=single, D=double
GCCC=Greater Columbus Convention Center

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2018
June 24 – 27
SALT LAKE CITY, UTAH

2019
June 16 – 19
TAMPA, FLORIDA

2020
June 21 – 24
MONTREAL, QUEBEC

2021
June 27 – 30
LONG BEACH, CALIFORNIA

2022
June 26 – 29
MINNEAPOLIS, MINNESOTA

2023
June 25 – 28
BALTIMORE, MARYLAND