

# FINAL PROGRAM



## INTERNATIONAL CONFERENCE ON TRANSPORTATION & DEVELOPMENT 2019

Alexandria, Virginia | June 9–12, 2019

*ASCE's Flagship Conference in Transportation & Development*

**Engineering Smart Mobility for the Smart City**



PROFESSIONAL  
DEVELOPMENT HOURS  
★ EARN UP TO ★  
**22**

#ICTD19 | [www.asce-ictd.org](http://www.asce-ictd.org)

# WELCOME TO ALEXANDRIA

## Welcome!

It is our great pleasure to welcome you to the ASCE International Conference on Transportation and Development (ICTD 2019) organized by the Transportation and Development Institute (T&DI)! ICTD is ASCE's flagship conference in transportation and development. The conference theme, Engineering Smart Mobility for the Smart City, represents our vision for exploring how society will adapt to transportation engineering and development challenges facing the cities today and tomorrow. Enjoy the discussion on innovative and necessary solutions to these needs and how our cities must appropriately adapt.

Alexandria is a vibrant city on the Potomac River, just south of Washington, DC. It's known for its Old Town, with brick sidewalks and well-preserved 18th- and 19th-century buildings. A short metro, transit, or vehicle ride opens you to all the wonders of Washington, D.C. The D.C. metro area, and the planned conference tours, offer many unique real-world examples for transportation and development professionals to feel, think, and learn about smart mobility and smart cities.

ASCE ICTD 2019's three days of technical programs features six plenary sessions which include national leaders from ASCE, T&DI, government agencies, universities, and private industry discussing core conference themes. The program also covers deeper technical content on multiple topics and modes in transportation and development through eight concurrent tracks. Speakers include a unique blend of invited technical experts and academic leaders in podium presentations. In addition, a dedicated poster session provides the opportunity for attendees to learn about cutting edge research in smart cities and smart mobility with direct access to the authors.

The program also includes a variety of special events such as the Younger Members' sessions on "The Best Advice I Ever Received" and a 3-Minute Pitch Competition, along with a wonderful icebreaker reception, T&DI Technical Committee Meetings, and T&DI's Annual Awards Banquet.

The conference concludes by providing two technical tours, one at FHWA's Turner-Fairbanks facility and one at the Reagan National Airport.

ASCE's ICTD 2019 has followed the great success of ICTD 2018 and attracted significant interest indicated by the rich technical program. Each paper included in the conference proceedings went through a rigorous peer review by at least three technical experts and a quality assurance process before becoming a publication of ASCE – the world's largest publisher of Civil Engineering content.

Our unique integration of private, government, and academic leaders makes the ASCE ICTD event series an excellent platform for information exchange, experience sharing, and professional networking. We know ASCE ICTD 2019 will be another wonderful and rewarding experience, and we sincerely hope that you join us again in Seattle, WA, in 2020!

On behalf of the conference leadership, organizing committee, and ASCE T&DI staff, we wish you a very pleasant stay in Alexandria!



**Walt Kulyk, P.E.,  
M.ASCE (Chair)**  
*Federal Transit  
Administration, Retired*



**Eva Lerner-Lam, F.ITE,  
M.ASCE (Co-Chair)**  
*Palisades Consulting  
Group, Inc.*



**David A. Noyce Ph.D,  
P.E., F.ASCE (Co-Chair)**  
*University of Wisconsin-  
Madison*

## STEERING COMMITTEE

**Walt Kulyk, P.E., M.ASCE  
(Chair)**

*Federal Transit  
Administration, Retired*

**Eva Lerner-Lam, F.ITE,  
M.ASCE (Co-Chair)**

*Palisades Consulting Group,  
Inc.*

**David A. Noyce Ph.D, P.E.,  
F.ASCE (Co-Chair)**

*University of Wisconsin-  
Madison*

**Yinhai Wang, Ph.D.,  
M.ASCE (Past-Chair)**

*University of Washington*

**Robert Bryson, P.E.,  
M.ASCE (Transportation  
Safety & Traffic Operations)**

*City of Milwaukee, Retired*

**Jessie Jones, P.E., M.ASCE  
(Planning & Development)**

*Arkansas Department of  
Transportation*

**Diniece Mendes, EIT,  
A.M.ASCE (Infrastructure  
Systems)**

*New York City Department  
of Transportation*

**Walt Kulyk, P.E., M.ASCE  
(Rail & Public Transit)**

*Federal Transit  
Administration, Retired*

**Rich Thuma, P.E., M.ASCE  
(Aviation Planning &  
Operations)**

*Crawford, Murphy & Tilly*

**Zhanmin Zhang, Ph.D.,  
M.ASCE (CAV Impacts &  
Emerging Technologies)**

*University of Texas at Austin*

**Cong Chen, Ph.D., E.I.,  
M.ASCE (Younger Member  
Activities)**

*CUTR, University of South  
Florida*

**Norelis Florentino, P.E.,  
PMP, M.ASCE (Local  
Organizing Committee  
Chair)**

*Shrewsbury*

# SCHEDULE-AT-A-GLANCE

## Sunday, June 9

12:00 pm – 7:00 pm	<b>Registration</b>
1:00 pm – 5:00 pm	<b>Exhibitor Move-in</b>
4:30 pm – 6:00 pm	<b>Pre-Conference Workshop</b>
6:30 pm – 7:30 pm	<b>Ice Breaker Reception, Sponsored by Samsung</b>
7:30 pm – 8:30 pm	<b>Younger Member "The Best Advice I Ever Received" Session</b>

## Monday, June 10

7:00 am – 6:00 pm	<b>Registration</b>
7:30 am – 8:30 am	<b>Light Continental Breakfast</b>
7:30 am – 3:30 pm	<b>Exhibit Hall Open</b>
7:30 am – 7:30 pm	<b>Poster Hall Open</b>
8:30 am – 10:00 am	<b>Plenary Sessions - Imagining and Creating our "Future World"; Understanding and Harnessing Smarter Mobility for Smarter Cities</b>
10:00 am – 10:30 am	<b>Networking Break</b>
10:30 am – 12:00 pm	<b>Plenary Session - Disruptive Technologies: Powerful Enablers for Policymakers and Operating Agencies</b>
12:00 pm – 1:30 pm	<b>Luncheon Address on Preparing for Smart Transportation</b>
1:30 pm – 3:00 pm	<b>Concurrent Technical Sessions</b>
3:00 pm – 3:30 pm	<b>Networking Break</b>
3:30 pm – 5:00 pm	<b>Concurrent Technical Sessions</b>
5:15 pm – 6:30 pm	<b>Poster Session</b>
6:30 pm – 7:30 pm	<b>Younger Member 3-Minute Pitch, Sponsored by Doppelmayr</b>

## Tuesday, June 11

7:00 am – 6:30 pm	<b>Registration</b>
7:30 am – 8:30 am	<b>Light Continental Breakfast</b>
7:30 am – 3:30 pm	<b>Exhibit Hall Open</b>
7:30 am – 3:30 pm	<b>Poster Hall Open</b>
8:30 am – 10:00 am	<b>Plenary Session - Smart Cities, Now!</b>
10:00 am – 10:30 am	<b>Networking Break</b>
10:30 am – 12:00 pm	<b>Plenary Session - Smart Mobility, Now!</b>
12:00 pm – 1:30 pm	<b>Buffet Lunch in Exhibit Hall</b>
1:30 pm – 3:00 pm	<b>Concurrent Technical Sessions</b>
3:00 pm – 3:30 pm	<b>Networking Break</b>
3:30 pm – 5:00 pm	<b>Concurrent Technical Sessions</b>
3:45 pm – 5:00 pm	<b>Exhibitor Move-out</b>
5:15 pm – 6:15 pm	<b>T&amp;DI Committee Meetings</b>
6:30 pm – 8:30 pm	<b>Awards Banquet</b>

## Wednesday, June 12

7:00 am – 1:00 pm	<b>Registration</b>
7:15 am – 8:00 am	<b>Light Continental Breakfast</b>
8:00 am – 9:00 am	<b>Plenary Session - Unmanned Traffic Management (UTM) and the Future of Unmanned Systems in Urban Airspace; Conference Overview from Chairs</b>
9:00 am – 9:15 am	<b>Networking Break</b>
9:15 am – 10:45 am	<b>Concurrent Technical Sessions</b>
10:45 am – 11:00 am	<b>Networking Break</b>
11:00 am – 12:30 pm	<b>Concurrent Technical Sessions</b>
12:30 pm – 1:00 pm	<b>Lunch on Own</b>
1:00 pm – 5:00 pm	<b>Technical Tours</b>

## PROGRAM CONTENT TABS

Schedule-at-a-Glance  
Pre-Conference Events  
Plenary Events  
Technical Program  
Posters  
Technical Tours  
Sponsors and Exhibitors  
Special Events  
Younger Member Events  
Awards  
About T&DI  
T&DI Committees  
General Information & Hotel Floor Plan

## ICTD MOBILE APP

### A QUICK, EASY WAY TO TAP INTO THE ICTD 2019 EXPERIENCE

Download the free conference mobile app and see the full conference schedule, poster list, speaker bios, exhibit hall information, and more! The free app is available on the Apple Store and Google Play store. Just search for the "ASCE Conferences and Events" app, install and open app, then select "ICTD 2019" as your event. You received your login credentials via email prior to the conference. If you don't have an account or are registering on-site, you can ask for the event code at the registration desk. This will allow you to create an account to access the app.



# Pre-Conference **Events**

## **Security in ‘Smart’ Applications—How to Outsmart the Hackers Workshop**

Sunday, June 9 | 4:30 – 6:00 p.m. | [Arbors](#)

## **Ice Breaker Reception**

Sunday, June 9 | 6:30 – 7:30 p.m. | [Plaza Ballroom Foyer](#)

## **Younger Member “The Best Advice I Ever Received” Session**

Sunday, June 9 | 7:30 – 8:30 p.m. | [Arbors](#)

PRE-CONFERENCE  
EVENTS



#ICTD19

SUNDAY | JUNE 9

## Workshop

Earn PDHs, immerse yourself in a new topic, or engage with those in your field to discuss an area of interest! Workshop is available at an additional cost of \$75.

### Security in 'Smart' Applications – How to Outsmart the Hackers

4:30 – 6:00 p.m. | *Arbors*

#### 1.5 PDHs

Arguably the biggest public concern when discussing smart applications, specifically smart vehicles (CAV), is the ability of hackers to enter the control systems or vehicles and effect the operation of one or more vehicles or the traffic control system. The risk of hacking is relevant to any smart system (e.g., city, energy, data) in any smart application. This workshop will explore smart systems from the outside looking in – how do hackers find loopholes in the systems and what can be done to close those holes? Workshop presenters will provide their insight and lead a comprehensive discussion with attendees on the following topics:

- Cybersecurity state of the industry
- Noblis' work with the misbehavior detection system for the CV Pilots
- NEMA's program to improve cyber resilience

**Moderator: Edward Fok**, Transportation Technologist, Federal Highway Administration

#### Panel Members:

**Jean Johnson**, Technical Program Manager, National Electrical Manufacturer Association (NEMA)

**Justin Anderson**, Senior Systems Engineer, Noblis



### Ice Breaker Reception

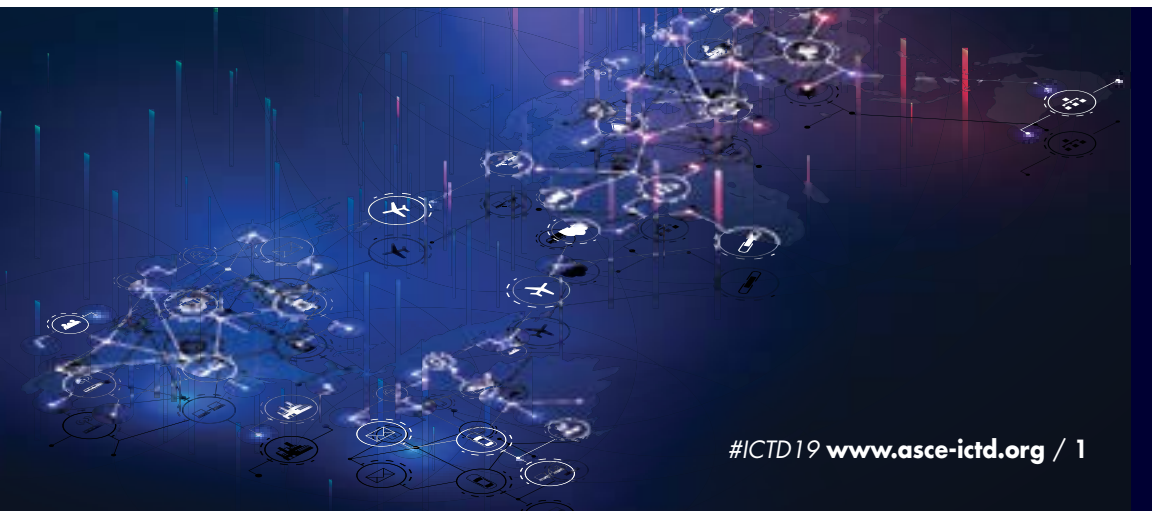
6:30 – 7:30 p.m. | *Plaza Ballroom Foyer*

We invite all ICTD 2019 attendees to join us for the ice breaker reception in the exhibit hall!

### Younger Member "The Best Advice I Ever Received" Session

7:30 – 8:30 p.m. | *Arbors*

Professionals from academia, industry, and government share their stories and job insights, and offer the best wisdom that was given to them in their careers. Learn more in the Younger Member Events tab.





# ASCE 2019 CONVENTION

MIAMI, FLORIDA  
OCTOBER 10-13, 2019

Engineering › Innovating › Leading



**REGISTRATION OPENS  
JUNE 5, 2019**

Register for ASCE Convention 2019 for an **integrated, cross-cultural, multi-disciplinary, technical, and educational program** that explores **the most important issues facing civil engineering today!**

#ASCE19 | [www.asceconvention.org](http://www.asceconvention.org)



## Opening Plenary

### Imagining and Creating our “Future World”

Monday, June 10 | 8:30–9:15 a.m. | [Plaza Ballroom](#)

## Understanding and Harnessing Smarter Mobility for Smarter Cities

Monday, June 10 | 9:15–10:00 a.m. | [Plaza Ballroom](#)

## Disruptive Technologies: Powerful Enablers for Policymakers and Operating Agencies

Monday, June 10 | 10:30 a.m.–12:00 p.m. | [Plaza Ballroom](#)

## Luncheon Address on Preparing for Smart Transportation

Monday, June 10 | 12:00–1:30 p.m. | [Plaza Ballroom](#)

## Smart Cities, Now!

Tuesday, June 11 | 8:30–10:00 a.m. | [Plaza Ballroom](#)

## Smart Mobility, Now!

Tuesday, June 11 | 10:30 a.m.–12:00 p.m. | [Plaza Ballroom](#)

## Unmanned Traffic Management (UTM) and the Future of Unmanned Systems in Urban Airspace

Wednesday, June 12 | 8:00–9:00 a.m. | [Plaza Ballroom](#)



PLENARY EVENTS

#ICTD19

MONDAY | JUNE 10

## Opening Plenary

### Imagining and Creating our “Future World”

8:30–9:15 a.m. | [Plaza Ballroom](#)

**.75 PDHs**

**Moderator: Walt Kulyk**, Federal Transit Administration, Retired



**Robin A. Kemper, P.E., LEED AP, F.SEI, F.ASCE,**

President, American Society of Civil Engineers (ASCE)

Robin A. Kemper is the ASCE president. She has more than 35 years of diverse and extensive structural engineering

experience in design, analysis, and forensics, focused mainly on buildings. Kemper currently is a risk engineer with Zurich North America. She works for both the Professional Liability and Construction Properties Risk Engineering Groups providing technical support to construction project policies, developing best practices, and investigating losses on construction projects.

Kemper also served on the Board of Direction of Engineers Without Borders and the Civil Engineering Industrial Advisory Board of Rensselaer Polytechnic Institute, her alma mater. She is currently a member of the Civil Engineering Industrial Advisory Boards for Rutgers University and the College of New Jersey.



**Yinhai Wang, Ph.D., P.E., M.ASCE,**  
President, ASCE-T&DI

Yinhai Wang is a professor of transportation engineering and the founding director of the Smart Transportation Applications and Research Laboratory (STAR Lab) at

the University of Washington (UW). He also serves as director for Pacific Northwest Transportation Consortium (PacTrans), USDOT University Transportation Center for Federal Region 10. Wang is currently president of Transportation & Development Institute (T&DI) at American Society of Civil Engineers (ASCE) and a member of the IEEE Smart Cities Technical Activities Committee. His active research fields include transportation safety, traffic sensing, e-science of transportation, big-data analytics, traffic operations and simulation, and smart urban mobility. He has published

more than 160 peer reviewed journal articles and delivered more than 170 invited talks and nearly 270 other academic presentations. Additionally, he serves as a member of the Artificial Intelligence and Advanced Computing Committee of the Transportation Research Board (TRB) and associate editor for three journals, including the *Journal of Transportation Engineering Part A*, *Journal of Intelligent Transportation Systems*, and *PLOS One*. He won the ASCE Journal of Transportation Engineering Best Paper Award in 2003 and Institute of Transportation Engineer (ITE) Innovation in Education Award in 2018.

## Understanding and Harnessing Smarter Mobility for Smarter Cities

9:15–10:00 a.m. | [Plaza Ballroom](#)

**.75 PDHs**

**Moderator: Walt Kulyk**, Federal Transit Administration, Retired



**Terry F. Neimeyer,**  
Chairman of the Board, KCI

Terry Neimeyer is KCI's chairman of the board. Neimeyer joined KCI in 1977 and has since served in numerous leadership roles for the company, including chief engineer of civil engineering

operations in Maryland and North Carolina. In December 1995 Neimeyer became president, a position he held until June 2006. He has served as chief executive officer for nearly two decades, and chairman of the board since December 2000.

Neimeyer earned his bachelor's degree in civil engineering from the University of Delaware, his master's degree in environmental engineering from Johns Hopkins University, and his Master of Business Administration from Wilmington College. He is a registered professional engineer in six states, and he earned his Envision Sustainability Professional Credential from the Institute for Sustainable Infrastructure and is a Board Certified Environmental Engineer from the American Academy of Environmental Engineers and Scientists.

Neimeyer has served as chairman of the Maryland Chamber of Commerce, chairman of the American Council of Engineering Companies, president of XL Insurance Design Professional Risk Control Group, and has sat on the board of the U.S. Chamber of Commerce. He is a fellow of both the American Society of Civil Engineers and the American Council of Engineering Companies and a graduate of Leadership Maryland.



**Neil Pedersen**, Executive Director, Transportation Research Board

In February 2015, Neil Pedersen became executive director of the Transportation Research Board (TRB). In that role, he provides executive direction and leadership to

TRB's technical activities, including its annual meeting of more than 12,000 transportation professionals, its more than 200 technical committees, its conferences, and its publications; its peer-reviewed policy consensus studies; its multimodal cooperative research programs; and operation of the Strategic Highway Research Program (SHRP 2) naturalistic driving study safety database.

From 2012 to 2015, Pedersen was deputy director for implementation and communication for SHRP 2. In that role, he led TRB's efforts to ensure that the products of the \$218 million SHRP 2 research program will be used by state DOTs, MPOs, local governments, resource agencies, and other implementation agencies.

Pedersen spent 29 years at the Maryland State Highway Administration, where he served the last eight years as Administrator and Governor's Highway Safety Representative. Prior to that, he was both Deputy Administrator and Director of the Office of Planning and Preliminary Engineering.

During his career, Pedersen has been involved in volunteer leadership roles in both TRB and AASHTO. He chaired a number of TRB committees, including serving as chair of TRB's Executive Committee in 2011. He was also chair of the SHRP 2 Technical Coordination Committee for its Capacity focus area from 2005 until joining TRB staff in 2012. At AASHTO, he was vice chair of the Standing Committee on Highways from 2007 to 2011 as well as several AASHTO policy committees.

## Disruptive Technologies: Powerful Enablers for Policymakers and Operating Agencies

10:30 a.m.–12:00 p.m. | [Plaza Ballroom](#)

### 1.5 PDHs

**Moderator: Eva Lerner-Lam**, Palisades Consulting Group, Inc



**Stephen Buckley**, Vice President and National Director for Planning and Environment, WSP

Steve Buckley currently serves as a vice-president of WSP for Planning and Environment. Buckley is a licensed engineer

and certified planner with more than 20 years of experience in many aspects of the transportation industry. Prior to his current position, Buckley most recently served as General Manager of Transportation for the City of Toronto. Prior to his tenure in Toronto, Buckley led the Transportation Division of the Philadelphia Streets Department and was the Director of Policy and Planning for the Mayor's Office of Transportation and Utilities for the City of Philadelphia. While in Toronto, Buckley initiated and led a City of Toronto Divisional working group on Automated Vehicles and created a Divisional AV Work Plan.

Buckley earned master's degrees in transportation and in city planning from the University of California – Berkeley, and his bachelor's degree in civil engineering from Syracuse University. Buckley recently served as the Chair of the Transportation Research Board's Committee on Transportation Issues in Major Cities and is a lecturer in the University of Pennsylvania's City & Regional Planning Program.



**Lauren Love-Wright**, Vice President of Network Partnerships, Verizon

Lauren Love-Wright is chief marketing officer of Verizon Partner Solutions leading the development and execution of programs to drive \$5 billion in annual revenue

and deliver year over year growth. In this role she is responsible for developing the winning strategy and vision for the wholesale business unit, managing the product portfolio to drive revenue growth and gain market share, and driving transformation by launching new products and services, targeting new customer segments, and developing key partnerships.

Her career with the company spans more than 12 years and includes positions of increasing responsibility in sales, consumer electronics, business and retail services. Prior to her current role, Lauren was president of Verizon Wireless' region covering Michigan, Indiana, and Kentucky where she was responsible for all sales, marketing, operations, financial performance and customer service in the three states.

Love-Wright joined Verizon Wireless in 2003 as associate director for strategic sales for its Illinois/Wisconsin Region. For nearly six years she developed and implemented strategies to expand the customer base across the health care, utilities, distribution, finance and professional services areas and subsequently was promoted to director for strategic sales in 2009.

In early 2012, Love-Wright joined Verizon Wireless' marketing team as director of connected consumer electronics and personal computing devices, responsible for driving strategy to ensure that Verizon Wireless service was embedded in the leading consumer electronics and portable personal computing devices sold in the U.S. Love-Wright returned to the Illinois/Wisconsin Region in 2014 to help lead its retail channel. Love-Wright has a bachelor's degree in computer science and electrical engineering from Spelman College and Georgia Institute of Technology; her master's degree in electrical engineering from Georgia Institute of Technology; and her MBA from Harvard Business School.



**Michael O'Rielly**,  
Commissioner, Federal  
Communications Commission

Michael O'Rielly was nominated for a seat on the Federal Communications Commission by President Barack Obama and was sworn into office

in November 2013. In January 2015, he was confirmed and sworn into office for a second term, which extends until June 30, 2019.

Prior to joining the agency, Commissioner O'Rielly spent almost 20 years working in prominent Republican communication policy and leadership positions for the U.S. House of Representatives and the U.S. Senate. Most recently, he served as a Policy Advisor in the Office of the Senate Republican Whip, led by U.S. Senator John Cornyn (R-TX). Commissioner O'Rielly received his B.A. from the University of Rochester.



**Phil Silver**, Transportation  
Vertical Strategy  
Leader, State & Local  
Government, Amazon Web  
Services (AWS)

Phil Silver leads Amazon Web Services' (AWS) public sector transportation vertical, including activities with

airports, seaports, transit agencies, tolling authorities, traffic departments, parking, DOTs, MPOs, and COGs – practically anything where state and local government operates transportation infrastructure (that includes CAV and Internet of Things (IoT) initiatives). He works with the state and local government field sales, solution architects, partner development, and professional services teams that support ISVs who build with AWS.

Over the past 20 years, Silver held sales and strategy leadership roles in global systems integration firms who are specialists in payments, fare collection, traffic management, tolling, parking, traveler information, logistics, e-commerce, IoT, and advanced analytics. Through it all, he has developed a great network of end-users, technology providers, and consultants. He also gained an appreciation for the technology challenges and opportunities faced by public sector agencies and authorities engaged in smart city / smart transportation initiatives focused on improving services to their patrons. Concurrently he served in the U.S. Navy, capping a 25-year active duty and reserve career with command of two expeditionary warfare units that deployed overseas in support of our Naval Forces, retiring as a Captain.

Along the way, Silver earned a master's in executive leadership from University of San Diego, an MBA from Fordham University, and bachelor degrees in chemistry and history from the University of Florida.



## Luncheon Address on Preparing for Smart Transportation

12:00–1:30 p.m. | *Plaza Ballroom*

### 1.5 PDHs

**Moderator: David A. Noyce**, University of Wisconsin-Madison



**Jeffrey Paniati**, Executive Director & CEO, Institute of Transportation Engineers (ITE)

In October 2015, Jeffrey Paniati became the executive director and CEO of the Institute of Transportation Engineers, an international membership association

of more than 15,500 transportation professionals who work to improve safety and mobility for all transportation system users and help build smart and livable communities.

Prior to joining ITE, Paniati had a 32-year career with the Federal Highway Administration, including holding senior leadership positions in the areas of system management and operations, intelligent transportation systems, and highway safety. He served as executive director from 2008–2015.

Paniati has received numerous honor awards, including the prestigious Presidential Rank Award of Distinguished Executive. He has been inducted into the University of Connecticut Academy of Distinguished Engineers, the ITS America Hall of Fame, and the ITS World Congress Hall of Fame.

Paniati has a bachelor's degree in civil engineering from the University of Connecticut and a master's degree in civil engineering from the University of Maryland. He is a Fellow of ITE and a registered professional engineer.



**Gummada Murthy, Ph.D.**, Associate Director for Operations, American Association of State Highway and Transportation Officials (AASHTO)

Gummada Murthy, is responsible for transportation infrastructure

operations programs and serves as AASHTO liaison for the Subcommittee on Transportations Systems Management Operations, provides program support to Highways Subcommittee on Maintenance, Subcommittee on Traffic Engineering, Special Committee on Wireless Communication

and Technology and the Special Committee on Transportation Security and Emergency Management. Prior to joining AASHTO, Murthy served as Senior Program Officer, TRB, National Academy of Sciences, responsible for implementation of Reliability research focus Area outcomes from the Academy's ongoing Strategic Highway Research Program (SHRP2). Additional career roles include; Director of Operations, VDOT, Virginia, Director, Operations and Maintenance, WSDOT, Washington and Asst. Turnpike Operations Engineer, Florida DOT. He is a graduate of the University of South of Florida, Tampa, Florida and holds Ph.D. and Masters of Science Degree in Civil Engineering from USF with concentration in ITS Operations. He is a licensed professional engineer in Virginia and served on several research and technical panels and expert working groups for TRB's NCHRP, SHRP2, Transportation Systems Operations and Management (TSOM), and TRRB-AASHTO-USDOT lead Connected Vehicle and Autonomous Vehicle programs.



**Patrick Jones**, Executive Director & CEO, International Bridge, Tunnel and Turnpike Association (IBTTA)

Patrick Jones is Executive Director & CEO of the International Bridge, Tunnel and Turnpike Association. Since assuming this

position in 2002, Jones has built IBTTA into the principal advocate for toll-financed transportation and the leader in producing high quality educational experiences for toll industry professionals. Under his leadership, IBTTA revitalized its premier journal Tollways, created the IBTTA Leadership Academy, and introduced many new programs including the Transportation Finance Summit, Violation Enforcement Summit, Special Summit on Open Road Tolling, and its first workshops in South America, Australia and South Africa.

Prior to IBTTA, Jones held senior management positions at the American Trucking Associations, the American Public Transportation Association, and the Health Insurance Association of America.

TUESDAY | JUNE 11

## Smart Cities, Now!

8:30–10:00 a.m. | *Plaza Ballroom*

### 1.5 PDHs

**Moderator: Kumares Sinha**, Purdue University



**Terry Halvorsen**, Chief Information Officer/ Executive Vice President IT Mobile, Samsung Electronics

As the CIO and of EVP IT Mobile at Samsung, Terry Halvorsen works on mobile enterprise strategies and helps navigate government

and regulatory business. Prior to joining Samsung, Halvorsen was the Department of Defense CIO, and was the principal advisor to the Secretary of Defense for Information Management / Information Technology and Information Assurance as well as non-intelligence space systems; critical satellite communications, navigation, and timing programs; spectrum; and telecommunications. He provided strategy, leadership, and guidance to create a unified information management and technology vision for the Department and ensured the delivery of information technology-based capabilities required to support the broad set of Department missions.

Before serving as the Department of the Navy CIO, Halvorsen was the deputy commander, Navy Cyber Forces. He began serving in that position in January 2010 as part of the Navy Cyber reorganization. Previous to that, Mr. Halvorsen served as the Deputy Commander, Naval Network Warfare Command. He was responsible for providing leadership for over 16,000 military and civilian personnel and supporting over 300 ships and approximately 800,000 globally dispersed computer network users. In this position, he was responsible for the business performance of Navy network operations, space operations, information operations and knowledge management.

Halvorsen served as an Army intelligence officer in a variety of assignments, including Operations Just Cause and Desert Storm. He holds a bachelor's degree in history from Widener University and a master's degree in educational technology from the University of West Florida. He is a Rotary International Paul Harris Fellow and an Excellence in Government Leadership Fellow.



**Kristin Musulin**, Senior Editor, Smart Cities Dive

Kristin Musulin is the senior editor of Smart Cities Dive, a Washington, DC-based digital media publication covering the news and trends that shape connectivity, resilience, and livability in U.S. cities.

Musulin closely follows and reports on the topics of shared mobility, autonomous vehicles and 5G, and she is the co-creator of the publication's dockless vehicle mapping resource. Originally from the Philadelphia area, Musulin received her degree in journalism from the University of Maryland and previously worked as the editor of Waste Dive, a fellow publication under the Industry Dive brand.



**Huei Peng**, Director, MCity

Huei Peng received his Ph.D. in Mechanical Engineering from the University of California, Berkeley in 1992. He is director of Mcity, the University of Michigan's public-private partnership devoted to advancing the development of

connected and automated vehicles.

Peng is also the Roger L. McCarthy Professor of Mechanical Engineering at U-M. Peng's research interests include adaptive control and optimal control, with emphasis on their applications to vehicular and transportation systems.

In the last 20 years, Peng has worked on vehicle automation, vehicle dynamics, design and assessment of active safety systems, and human model development—with a special focus on understanding how they err. He has served as the principal investigator or co-principal investigator of more than fifty research projects, with a total funding of more than \$30 million. He has more than 240 technical publications, including 100 in referred journals and four books. Peng is an SAE Fellow and an ASME Fellow. He is a Chang Jiang Scholar at the Tsinghua University of China.



**Steve Bradford**, Chief Scientist for Architecture and NextGen Development, Office of NextGen – Federal Aviation Administration

Steve Bradford is the Chairman of the Technical Review Board that monitors technical decisions related to

investments and the Enterprise Architecture. He works with elements of the FAA to develop midterm plans and five-year budget requests to implement NextGen including UAS related automation. He is the FAA lead

# Plenary Events *(continued)*

for the FAA/NASA Research Transition Team process that supports collaboration between the FAA and NAS on ATM related activities. A current focus of the RTT process is collaboration on both UAS-in-the-NAS supporting vehicles operating in ATM, and UAS Traffic Management supporting operation in uncontrolled airspace. Both RTT's depend on direct partnership with the UAS industry and provide many opportunities to look at new technology options for both UAS and traditional manned aircraft operations.

He has a leading role in NextGen's International Engagement. He was a member of the ICAO technical team that authored the latest Global Air Navigation Plan, the past US panel member and current advisor to the ICAO Air Traffic Management Requirements and Performance Panel, and is technical advisor to the development of GANP 2019. He leads the FAA participation in several activities with SESAR Joint Undertaking, and has led several co-operative international efforts with EUROCONTROL.



**Shailen P. Bhatt** President and CEO, Intelligent Transportation Society of America (ITS America)

As chief executive of ITS America, Bhatt promotes policies that advance the development and deployment of intelligent transportation

technologies throughout the United States. He has testified before Congress about the positive safety impact of intelligent transportation technologies, including connected and automated vehicles. Bhatt is a leading voice in transportation on technology's ability to save lives and reduce crashes on U.S. roadways. He speaks extensively about the importance of vehicles to communicate with each other and all roadway users as one of the best ways to improve safety and reduce congestion. He is also passionate about reducing transportation's carbon footprint and the need to provide seamless mobility and transportation choices to people no matter where they live. Bhatt was appointed as a transportation leader by three governors. While serving as executive director for the Colorado Department of Transportation (CDOT), the agency launched the Road X program, which is focused on deploying innovative technology solutions such as connected vehicles and teaming with the private sector to shape the future of transportation. Prior to CDOT, Bhatt was cabinet secretary for the Delaware Department of Transportation. He was also a presidential appointee at the U.S. Department of Transportation.

Bhatt has served as chair of the Board of Directors for the National Operations Center of Excellence (NOCOe) and the Executive Committee of the I-95 Corridor Coalition; he was a member of the World Economic Forum's (WEF) Global Agenda Council on the Future of Automotive and Personal Transport.

## Smart Mobility, Now!

10:30 a.m.–12:00 p.m. | [Plaza Ballroom](#)

### 1.5 PDHs

**Moderator: Marsha Anderson Bomar,**

Metropolitan Atlanta Rapid Transit Authority (MARTA)



**Brendan Jones,** Chief Operating Officer, Electrify America

Brendan Jones is the Chief Operating Officer of Electrify America. Prior to joining Electrify America, Brendan served as the Vice President of OEM Strategy &

Development for EVgo. He also spent over 20 years at Nissan, the last six as the executive responsible for building out electric vehicle sales and infrastructure. Brendan also formerly served as an executive board member of the Electric Drive Transportation Association (EDTA) and the ROEV Association.



**Finlay Lewis,** Operations Manager, Bechtel

Finlay Lewis is an operations manager for Bechtel's Infrastructure business in the Americas. In this role, he is accountable for the development and operations of the company's projects in the

Communications and Smart Infrastructure sectors. Finlay has 20 years of project management experience, with a strong portfolio of wireless and wireline telecoms work in the US, Canada, and the UK. Following 10 years as a strategy consultant in the telecommunications industry, Finlay joined Bechtel's Telecoms Global Business Unit (GBU) in 2003 as the market intelligence manager, and in 2005 relocated to London as the market intelligence and business planning manager for Europe, Asia, and the Middle East. In this role, he led the Region's strategic planning, competitive research and analysis, and various business development initiatives.

In 2006, Finlay returned to the US as a member of the AT&T Wireless Project in the Baltimore/Washington market, responsible for managing UMTS (Universal Mobile Telecoms System) site modifications in the burgeoning markets of Washington, DC, Maryland, and Northern Virginia, with a primary focus on rooftop and in-building/DAS (Distributed Antenna System) sites. In 2009, he served as Bechtel's Power GBU market intelligence manager and led several business development efforts. In 2011, he assumed the role as the market manager for Bechtel's New York and New Jersey market and in 2013 became the project manager for the Hanna Region Transmission Development (HRTD)



and Eastern Alberta Transmission Line (EATL) projects in Edmonton, Alberta. More recently, Finlay was delivery manager on the Google Fiber Project in the Charlotte, North Carolina market. Of note, since 1997, Finlay has been a member of the Dana Farber Boston Marathon Challenge team, completing 14 Boston marathons. In 2018, he received a lifetime achievement award for his fundraising efforts.



**Sherry Login**, Manager of Electric Vehicles Programs, Con Edison Company of New York, Inc.

Sherry Login is the Manager of Electric Vehicles Programs at the Consolidated Edison Company of New York. Con Edison operates one of

the world's largest energy delivery systems providing electricity and gas and to the 10 million people who live in New York City and Westchester County. In 2017, Sherry pioneered the SmartCharge New York program, the first electric vehicle off-peak charging incentive program to utilize a connected car technology to monitor charging behavior. This unique, innovative program currently has almost 2,000 light-duty electric vehicles actively-enrolled and is in the process of expanding to include medium and heavy-duty electric vehicles. In 2015, she spearheaded the creation of Con Edison's workplace charging program which now covers 18 facilities. She holds an MBA and Master of Environmental Studies from Yale University, as well as a Bachelor of Science with Honors in Environmental Technology from Cornell University.



**Lauren Isaac**, Director of Business Initiatives, EasyMile

Lauren Isaac is the Director of Business Initiatives for the North American operation of EasyMile. EasyMile specializes in autonomous vehicle technology and smart mobility solutions. Its best

known product is the EZ10: electric & driverless, the shuttles are designed to cover short distances in multi-use environments. Lauren leads business development for EasyMile in North America in addition to leading the company's North America regulatory efforts. Prior to working at EasyMile, Lauren worked at WSP where she was involved in various projects involving advanced technologies that can improve mobility in cities. Lauren wrote a guide titled "Driving Towards Driverless: A Guide for Government Agencies" regarding how local and regional governments should respond to autonomous vehicles in the short, medium, and long term. In addition, Lauren maintains the blog, "Driving

Towards Driverless", and has presented on this topic at many industry conferences. She recently did a TEDx Talk, and has been published in Forbes and the Chicago Tribune among other publications.

WEDNESDAY | JUNE 12

## Unmanned Traffic Management (UTM) and the Future of Unmanned Systems in Urban Airspace

8:00–9:00 a.m. | [Plaza Ballroom](#)

**Moderator: Brent Ingraham**, Office of the Under Secretary of Defense for Acquisition and Sustainment Platform and Weapons Portfolio Management



**Parimal Kopardekar**, Acting Director, NASA Aeronautics Research Institute (NARI)

Parimal Kopardekar (PK) serves as the Acting Director of NASA Aeronautics Research Institute (NARI). In that capacity, he is responsible

for exploring new trends and needs related to aviation in the areas of autonomy, aeronautics manufacturing, and advanced air mobility. He also serves as NASA's senior technologist for Air Transportation Systems and principal investigator for the Unmanned Aircraft Systems Traffic Management (UTM) project. Kopardekar was formerly manager of the NASA's Safe Autonomous System Operations Project, which developed autonomy related concepts, technologies, and architectures that will increase efficiency, safety, and capacity of airspace operations. Prior to that, he managed Next Generation Air Transportation Systems (NextGen) Concepts and Technology Development Project.

Kopardekar enjoys initiating new concepts and technology ideas that increase airspace capacity and throughput, reduce delays, and reduce the total cost of air transportation. At NASA, PK has initiated many innovative research projects including reduced crew operations, net-enabled air traffic management, autonomy for airspace operations, Shadow-Mode Assessment using Realistic Technologies for the National Airspace System (SMART NAS), and low-altitude airspace management system focused on Unmanned Aircraft Systems (UAS) operations. In 2017, he was named among the 25 most influential people in the commercial drone industry. On behalf of his team, PK accepted the Service to America Medals (known as Oscar of Federal Workforce) in Promising Innovation Category in October 2018.

# Plenary Events *(continued)*

Kopardekar has published over 50 conference and journal papers with three best paper awards, delivered more than 15 keynote talks at national and international conferences and participates as an expert with media on topics related to unmanned aircraft systems, urban air mobility, and autonomy. He is a Fellow of the American Aeronautics and Astronautics (AIAA) and recipient of numerous NASA awards including Outstanding Leadership Medal and Engineer of the Year. He holds a doctorate and master's degrees in Industrial Engineering and a bachelor's degree in production engineering. He serves as the co-editor-in-chief of the Journal of Aerospace Operations.



**Brent Ingraham**, Director of Unmanned Systems, The Office of Under Secretary of Defense for Acquisition and Sustainment, Platform and Weapons Portfolio Management

In April 2017, Brent Ingraham began serving as the director of Unmanned Systems at the Office of the Under Secretary of Defense for Acquisition and Sustainment Platform and Weapons Portfolio Management Directorate, where he is responsible for the acquisition, policy, governance, and developing technology roadmaps for unmanned, robotic and autonomous systems portfolio. The portfolio of systems spans across land, air, maritime, and space domains.

Ingraham began his career in the automotive industry, as a powertrain engineer, responsible for development, design, and production of global platforms. During his tenure he had unique experiences in developing engines with international customers and providing a principle role in forming global partnerships. In 2009, he joined the federal government as supporting the Joint Program Office Mine Resistant Ambush Protected (MRAP) vehicle as the chief engineer for the MRAP All-Terrain Vehicle (M-ATV), where he was responsible for the engineering, production, and fielding of urgent lifesaving technology. In 2012 he assumed the role and associated duties as the chief engineer for the Joint Program Office. In 2013, he was awarded the Navy's Top Scientist and Engineer of the Year Award for his work in the field of vehicle survivability.

In 2014, Ingraham was assigned to Pacific Command, where he was responsible for developing strategic plans and bilateral defense frameworks. Upon completion, he returned to support Marine Corps Combat Development Command to develop and transition Marine Corps warfighting capabilities. In 2015, he joined the Naval Surface Warfare Center Dahlgren Division as the branch head for a multi-disciplinary technical organization responsible for rapid conception, research and development, production,

fielding and lifecycle support of asymmetric disruptive capabilities.

Ingraham is a native of Vermont, and he received his Bachelor's of Science in Mechanical Engineering in 1998 from the University of New Hampshire. During his career Ingraham has received numerous citations and accolades for his contributions and dedication while in industry and during his career in the department. Most recently, he was awarded the 2019 Federal Computer Weekly FED 100 Award, celebrating these exceptional individuals, from both industry and government, who are transforming government and its ability to deliver on critical missions.



**Timothy Bennett**, Air Domain Awareness, Science & Technology Directorate, Department of Homeland Security

Tim Bennett has more than 30 years managing, designing, manufacturing and testing electronic

warfare (EW); intelligence, surveillance & reconnaissance (ISR) and signal intelligence (SIGINT) systems for manned and unmanned systems. He started his career at NRL working on communication programs like the Classic Wizard. His recent accomplishments include leading the design and manufacturing of the Universal Ground Control Systems (UGCS) used to control the Gray Eagle, Shadow, Hunter and Orion UAS. In addition, as the product director, he led the effort for the design, manufacturing and testing of Orion UAS that holds the medium altitude long endurance (MALE) long endurance record for continuous flight.

Bennett took an appointment with the Department of Homeland Security Science and Technology Directorate in 2015 where he was the deputy of the Program Executive Office (PEO) for Unmanned Aircraft Systems (UAS). He led manned and unmanned airborne research and technology transfer for the Immigration and Customs Enforcement (ICE), United States Coast Guard (USCG) and Customs and Border Protection (CBP) for the Borders, Immigration and Maritime Division (BID). He currently is responsible for air domain awareness for Department of Homeland Security Science and Technology Directorate.

# Technical Program



**TRACK A:  
CAV IMPACTS**



**TRACK B:  
CHALLENGES &  
OPPORTUNITIES FOR  
EMERGING TECH**



**TRACK C:  
TRANSPORTATION  
SAFETY**



**TRACK D:  
PLANNING &  
DEVELOPMENT**



**TRACK E:  
RAIL & PUBLIC  
TRANSIT**



**TRACK F:  
INFRASTRUCTURE  
SYSTEMS**



**TRACK G:  
TRAFFIC  
OPERATIONS**



**TRACK H:  
AVIATION  
PLANNING &  
OPERATIONS**



TECHNICAL  
PROGRAM

#ICTD19



## Claim Your E-Proceedings

### Activate Your Online Access to the International Conference on Transportation & Development 2019.

ICTD conference proceedings will be available August 30, 2019. Registrants will receive an email once proceedings are available for download.

Eligible conference attendees have until September 30, 2019 to claim the ICTD 2019 proceedings.

Once claimed, you will always have access to the online proceedings.

See the postcard in your registration packet.

### Use token: ICTD19

Detailed instructions and screenshots are also available at <https://ascelibrary.org/ictd2019-token>

**If you have questions**, please contact ASCE Customer Service by telephone (800) 548-2723 (U.S. and Canada) or (703) 296-6300 (other locations), or email [ascelibrary@asce.org](mailto:ascelibrary@asce.org).



**Luggage Storage Available on Wednesday.**  
*Please bring your luggage to the bell man and mention you are with the ICTD Conference.*

## SUNDAY, JUNE 9, 2019

4:30 – 6:00 p.m.	<b>Security in ‘Smart’ Applications—How to Outsmart the Hackers Workshop</b>   <a href="#">Arbors</a>	<b>Moderator:</b> Edward Fok, Federal Highway Administration <b>Panel Members:</b> Jean Johnson, National Electrical Manufacturer Association (NEMA) Justin Anderson, Noblis
6:30 – 7:30 p.m.	Ice Breaker Reception   <a href="#">Plaza Ballroom Foyer</a>	
7:30 – 8:30 p.m.	<b>Younger Member “The Best Advice I Ever Received” Session</b>   <a href="#">Arbors</a>	<b>Moderator:</b> Cong Chen, Ph.D., E.I., M.ASCE (Younger Member Activities) CUTR, University of South Florida <b>Panel Members:</b> David Hein, P.Eng., M.ASCE, Principal Engineer with Applied Research Associates (Past T&DI President) Eva Lerner-Lam, F.ITE, M.ASCE, Founder and President Palisades Consulting Group, Inc. (Past T&DI President, ICTD 2019 Co-Chair) Mohammad Abdel-Aty, Ph.D., P.E., F.ASCE, Department of Civil Engineering, University of Central Florida, Recipient of Francis C. Turner Award Wei Zhang, Ph.D., P.E., Highway Research Engineer, Office of Safety Research and Development, Federal Highway Administration

## MONDAY, JUNE 10, 2019

7:30 – 8:30 a.m.	Light Continental Breakfast   <a href="#">Plaza Ballroom Foyer</a>	
8:30 – 10:00 a.m.	<b>Plenary Sessions – Imagining and Creating our “Future World”; Understanding and Harnessing Smarter Mobility for Smarter Cities</b>   <a href="#">Plaza Ballroom</a>	<b>Moderator:</b> Walt Kulyk, Federal Transit Administration, Retired <b>Robin A. Kemper, P.E., LEED AP, F.SEI, F.ASCE</b> , President, American Society of Civil Engineers (ASCE) <b>Yinhai Wang, Ph.D., P.E., M.ASCE</b> , President, ASCE-T&DI <b>Terry F. Neimeyer</b> , Chairman of the Board, KCI <b>Neil Pedersen</b> , Executive Director, Transportation Research Board
10:00 – 10:30 a.m.	Networking Break   <a href="#">Plaza Ballroom Foyer</a>	
10:30 a.m. – 12:00 p.m.	<b>Plenary Session – Disruptive Technologies: Powerful Enablers for Policymakers and Operating Agencies</b>   <a href="#">Plaza Ballroom</a>	<b>Moderator:</b> Eva Lerner-Lam, Palisades Consulting Group, Inc <b>Stephen Buckley</b> , Vice President and National Director for Planning and Environment, WSP <b>Lauren Love-Wright</b> , Vice President of Network Partnerships, Verizon <b>Michael O’Rielly</b> , Commissioner, Federal Communications Commission <b>Phil Silver</b> , Transportation Vertical Strategy Leader, State & Local Government, Amazon Web Services (AWS)
12:00 – 1:30 p.m.	Luncheon Address on Preparing for Smart Transportation   <a href="#">Plaza Ballroom Foyer</a>	<b>Moderator:</b> David A. Noyce, University of Wisconsin-Madison <b>Jeffrey Paniati</b> , Executive Director & CEO, Institute of Transportation Engineers (ITE) <b>Gummada Murthy</b> , Associate Director for Operations, American Association of State Highway and Transportation Officials (AASHTO) <b>Patrick Jones</b> , Executive Director & CEO, International Bridge, Tunnel and Turnpike Association (IBTTA)

TRACK A: CAV IMPACTS <i>Beech Room</i>	TRACK B: CHALLENGES & OPPORTUNITIES FOR EMERGING TECH <i>Arbors Room</i>	TRACK C: TRANSPORTATION SAFETY <i>Birch Room</i>	TRACK D: PLANNING & DEVELOPMENT <i>Juniper Room</i>	TRACK E: RAIL & PUBLIC TRANSIT <i>Aspen Room</i>	TRACK F: INFRASTRUCTURE SYSTEMS <i>Chestnut Room</i>	TRACK G: TRAFFIC OPERATIONS <i>Poplar Room</i>	TRACK H: AVIATION PLANNING & OPERATIONS <i>Walnut Room</i>
1:30 – 3:00 p.m. <b>Concurrent Technical Sessions</b>							
<b>A Look at the Future of CAVs</b>	<b>Smart Cities - Insights from the U.S. DOT Smart City Challenge Finalists</b>	<b>Safety Effects of Roadway Elements &amp; Traffic Control</b>	<b>Planning for Smart Cities - Public Sector’s Perspective</b>	<b>2030: A Look at the Future of Rail and Public Transit</b>	<b>Infrastructure Systems Resiliency and Interdependencies</b>	<b>Infrastructure System Readiness for Automated Vehicles</b>	<b>Airside Planning for the Future of Aviation</b>
3:00 – 3:30 p.m. Networking Break   <a href="#">Plaza Ballroom Foyer</a>							
3:30 – 5:00 p.m. <b>Concurrent Technical Sessions</b>							
<b>TECHTalk with Jim Misener, Qualcomm – V2X: DSRC, Cellular and 5G Option</b>	<b>Data Sensing &amp; Analytics</b>	<b>Railroad Grade Crossing Safety</b>	<b>Smart Cities Strategies</b>	<b>New Energy for Rail and Public Transit</b>	<b>Asset Management in the Era of Smart Cities</b>	<b>Innovation in Signalized Intersection Control</b>	<b>Airport Landside Planning: Multimodal Connections</b>
5:15 – 6:30 p.m. <b>Poster Session</b>   <a href="#">Terrace</a>							
6:30 – 7:30 p.m. Younger Member 3-Minute Pitch   <a href="#">Terrace</a> Sponsored by <a href="#">Doppelmayr</a>							

## TUESDAY, JUNE 11, 2019

7:30 – 8:30 a.m. Light Continental Breakfast   <a href="#">Plaza Ballroom Foyer</a>							
8:30 – 10:00 a.m. <b>Plenary Session – Smart Cities, Now!</b>   <a href="#">Plaza Ballroom</a>				<b>Moderator: Kumares Sinha</b> , Purdue University <b>Terry Halvorsen</b> , CIO/EVP IT Mobile, Samsung Electronics <b>Kristin Musulin</b> , Senior Editor, Smart Cities Dive <b>Huei Peng</b> , Director, MCity <b>Shailen P. Bhatt</b> , President and CEO, Intelligent Transportation Society of America (ITS America)			
10:00 – 10:30 a.m. Networking Break   <a href="#">Plaza Ballroom Foyer</a>							
10:30 a.m. – 12:00 p.m. <b>Plenary Session – Smart Cities, Now!</b>   <a href="#">Plaza Ballroom</a>				<b>Moderator: Marsha Anderson Bomar</b> , Metropolitan Atlanta Rapid Transit Authority (MARTA) <b>Finlay Lewis</b> , Operations Manager, Bechtel <b>Sherry Login</b> , Manager of Electric Vehicles Programs, Con Edison Company of New York, Inc. <b>Brendan Jones</b> , Chief Operating Officer, Electrify America <b>Lauren Isaac</b> , Director of Business Initiatives, EasyMile			
12:00 – 1:30 p.m. Buffet Lunch in Exhibit Hall   <a href="#">Plaza Ballroom Foyer</a>							
<b>TRACK A: CAV IMPACTS</b> <i>Beech Room</i>	<b>TRACK B: CHALLENGES &amp; OPPORTUNITIES FOR EMERGING TECH</b> <i>Arbors Room</i>	<b>TRACK C: TRANSPORTATION SAFETY</b> <i>Birch Room</i>	<b>TRACK D: PLANNING &amp; DEVELOPMENT</b> <i>Juniper Room</i>	<b>TRACK E: RAIL &amp; PUBLIC TRANSIT</b> <i>Aspen Room</i>	<b>TRACK F: INFRASTRUCTURE SYSTEMS</b> <i>Chestnut Room</i>	<b>TRACK G: TRAFFIC OPERATIONS</b> <i>Poplar Room</i>	<b>TRACK H: AVIATION PLANNING &amp; OPERATIONS</b> <i>Walnut Room</i>
1:30 – 3:00 p.m. <b>Concurrent Technical Sessions</b>							
Sensors, Big Data and Analytics for CAVs	Mobility as a Service (MaaS)	Crash Prediction and Assessment	Integrating MaaS and Smart Mobility into Smart Cities	Big Data and Analytics for Rail and Public Transit	Roundtable on Integration of Electric Power and Electric Vehicle Charging Infrastructure Systems	Urban Streetscapes for Smart Mobility and Sustainability	Planning Airport Terminals for the Future of Air Transport
3:00 – 3:30 p.m. Networking Break   <a href="#">Plaza Ballroom Foyer</a>							
3:30 – 5:00 p.m. <b>Concurrent Technical Sessions</b>							
Information & Communications Technology for CAVs	Electric Vehicles	Big Data Collection and Analysis to Achieve Vision Zero	Can We Be Smart, Safe and Secure at the Same Time?	Advanced Communications for Rail and Public Transit	Truck Platooning Impacts on Infrastructure, Energy, and Environment	Advanced Traffic Control Systems and Devices	Spaceports
5:00 – 6:00 p.m. T&DI Committee Meetings (See Committee Tab for details.)							
6:30 – 8:30 p.m. <b>Awards Banquet</b>   <a href="#">Plaza Ballroom</a>				<b>Thomas W. Smith III</b> , Executive Director, American Society of Civil Engineers <b>Nicole Nason</b> , Administrator, Federal Highway Administration <b>Mohammad Abdel-Aty</b> , University of Central Florida			

## WEDNESDAY, JUNE 12, 2019

7:15 – 8:00 a.m. Light Continental Breakfast   <a href="#">Plaza Ballroom Foyer</a>							
8:00 – 9:00 a.m. <b>Plenary Session – Unmanned Traffic Management (UTM) and the Future of Unmanned Systems in Urban Airspace</b>   <a href="#">Plaza Ballroom</a>				<b>Moderator: Brent Ingraham</b> , The Office of Under Secretary of Defense for Acquisition and Sustainment, Platform and Weapons Portfolio Management <b>Parimal Kopardekar</b> , Acting Director, NASA Aeronautics Research Institute (NARI) <b>Timothy Bennett</b> , Air Domain Awareness, Science & Technology Directorate, Department of Homeland Security <b>Brent Ingraham</b> , Director of Unmanned Systems, The Office of Under Secretary of Defense for Acquisition and Sustainment, Platform and Weapons Portfolio Management			
9:00-9:15 a.m. Networking Break   <a href="#">Plaza Ballroom Foyer</a>							
9:15 – 10:45 a.m. <b>Concurrent Technical Sessions</b>							
Financial, Energy, and Policy Issues for CAVs	Artificial Intelligence (AI)	Financial, Institutional and Legal Issues for Transportation Safety	Leveraging Data to Make Us Smarter	Financial and Legal Issues for Rail and Public Transit	Engineering Smart Mobility for Smart Cities – Perspectives on Equity and Inclusion	Innovation in UAV Delivery	Unmanned Aerial Systems Operations In and Around Airports
10:45 – 11:00 a.m. Networking Break   <a href="#">Plaza Ballroom Foyer</a>							
11:00 a.m. – 12:30 p.m. <b>Concurrent Technical Sessions</b>							
Advanced Research in Impacts of CAVs	Unmanned Aerial System (UAS)	Research Related to Crash Problem Identification and Prevention	Smart Ideas for Today and Tomorrow	Emerging Civil Engineering Codes and Standards for Rail and Public Transit	How 5G Will Transform Society and Enable Smart Cities	Toward Safe and Efficient Freight Operation	New Technology Impacts on Airport Planning and Operations
1:00 pm – 5:00 pm Technical Tours							



**TRACK A: CAV IMPACTS** | Track Chair: Zhanmin Zhang, University of Texas at Austin

## MONDAY, June 10

1:30 p.m. - 3:00 p.m. **Concurrent Technical Session 1, Beech**

### **A Look at the Future of CAVs**

**Moderator:** Paul Avery, *AECOM*

**The Future of Transportation**, Mike Pina and Kenneth M. Leonard, *U.S. Department of Transportation*

**CAVs for the Tolling Industry & Managed Lanes**, Lev Pinelis, *Transurban*

**Advancing the National Conversation on Highway Automation**, John Corbin, *FHWA*

**VDOT's Perspectives on Connected Automation**, Cathy McGhee, *Virginia DOT*

**Effects of Automated and Connected Vehicle Systems on Transportation Planning and Infrastructure**, Paul Avery and Krishna C. Patnam, *AECOM*

3:30 p.m. - 5:00 p.m. **Concurrent Technical Session 2, Beech**

### **TECHTalk with Jim Misener, Qualcomm - V2X: DSRC, Cellular and 5G Options**

A talk by Qualcomm's internationally renowned expert, Jim Misener, on selecting a reliable, interoperable, and secure communications technology to support the deployment of V2X infrastructure. The talk will follow with open interactive discussion and Q&A.

## TUESDAY, June 11

1:30 p.m. - 3:00 p.m. **Concurrent Technical Session 3, Beech**

### **Sensors, Big Data, and Analytics for CAVs**

**Moderator:** Xiaopeng (Shaw) Li, *University of South Florida*

**Understanding the Network-Level Impacts of CAVs through Data Analysis and Visualization**, Natalia Ruiz-Juri, *University of Texas at Austin*

**Extracting New Data Streams from Connected Vehicles**, Christian Claudel, *University of Texas at Austin*

**Clustering-Based Online Coordinated In-Vehicle Routing for CAVs Built upon Understanding the Competition Potential Among Travelers on Network Route Resources**, Lili Du, *University of Florida*

**Mobility and Safety in an Era of Automation and Connectivity**, Srinivas Peeta, *Georgia Tech*

**Connected Automated Vehicle Trajectory Optimization at a Signalized Intersection in Mixed Traffic: Learning-Based Modeling and Field Experiments**, Xiaopeng (Shaw) Li, *University of South Florida*

3:30 p.m. - 5:00 p.m. **Concurrent Technical Session 4, Beech**

### **Information & Communications Technology for CAVs**

**Moderator:** Michael Brown, *SwRI*

**Digitizing Infrastructure for Sustainable Real-World Deployment of Automated Vehicles**, Joah Sapphire, *GDG*

**Certification of CAV ICT Systems**, Jason Conley, *OMNIAIR Consortium*

**Virtual Activity and Physical Activity Interactions in a CAV Landscape**, Chandra Bhat, *University of Texas at Austin*

**Testing CAVs on Transurban's Express Lane Network**, Patrick Chuang, *Transurban*

**Communications for Connected Transportation - Selecting the Right Wireless Technology and Frequency Spectrum**, Girija Subramaniam, *Forcing Function LLC*



**TRACK A: CAV IMPACTS**

**WEDNESDAY, June 12**

9:15 a.m. – 10:45 a.m. **Concurrent Technical Session 5, Beech**

**Financial, Energy, and Policy Issues for CAVs**

**Moderator:** Matt Smith, *Michael Baker*

**The Impacts of Automated Vehicles on Fuel Taxes,** Jeff Kupko, *Michael Baker*

**Ownership Challenges of Multi-jurisdictional Technology Implementation Projects,** Megahn O’Callahagn, *City of Dublin, Ohio*

**Hydrogen Fueling System Challenges and Opportunities for the Fully Automated Vehicles,** Seyedali Ghahari and Shabnam Ghotbi, *Purdue University; Lateef Assi, SCDOT*

**Show Me the Money! The Latest Thinking in Revenue Sources and Value Capture for Transportation Assets,** Jesse Lund, *Deloitte*

**Paving the Way for Autonomous Vehicles in a Multi-Modal Transportation Environment: Impacts of Roadway Design and Policy on AV Adoption and Mode Choice,** Yuntao Guo, Irina Benedyk, Dustin Souders, and Samuel Labi, *Purdue University; Srinivas Peeta, Georgia Tech*

**Hydrogen Fueling System Challenges and Opportunities for the Fully Automated Vehicles,** Seyedali Ghahari and Shabnam Ghotbi, *Purdue University; Lateef Assi, SCDOT*

11:00 a.m. – 12:30 p.m. **Concurrent Technical Session 6, Beech**

**Advanced Research in Impacts of CAV**

**Moderator:** Lili Du, *University of Florida*

**Automated Vehicles Impact on Transit Ridership by Enhancing First/Last-mile Connection,** Amir Shahpar, *VDOT*

**Connected and Automated Vehicle Technologies: A Public Health View,** Mohammad Jalayer, *Rowan University*

**Potential Implications of Autonomous Vehicles on Personal Vehicle Ownership and Demand for Public Transit,** Christos Gkartzonikas, Konstantina Gkritza, *Purdue University*



# Technical Program | TRACK B

## TRACK B: Challenges & Opportunities for Emerging Technologies |

Track Chair: Zhanmin Zhang, University of Texas at Austin

### MONDAY, June 10

1:30 p.m. – 3:00 p.m. **Concurrent Technical Session 1, Arbors**

#### Smart Cities – Insights from the U.S. DOT Smart City Challenge Finalists

**Moderators:** Zhanmin Zhang, *University of Texas at Austin*; Jen Duthie, *City of Austin*

**Panelists:**

Jen Duthie, *Division Manager, City of Austin*

Alexander Pazuchanics, *Assistant Director of Planning, Policy, and Permitting, City of Pittsburgh*

Mark Dowd, *Executive Director, Smart Cities Lab*

3:30 p.m. – 5:00 p.m. **Concurrent Technical Session 2, Arbors**

#### Data Sensing & Analytics

**Moderators:** Jen Duthie, *City of Austin*; Guohui Zhang, *University of Hawaii at Manoa*

**Big Data and Project Prioritization: Using Trip Origins to Assess the Benefits of Congestion Reduction Investments,** Harun Rashid, *Northern Virginia Transportation Authority*; Cat Manzo, *Street Light Data*

**Concrete Structure Health Detection System,** Scott Spagnola, *T-Mobile*; Nadeem Uraizee, *Nokia*

**Using Big Data to Investigate Travelers Route Choice Due to Major Operation Change: Case Study Interstate 66 Inside the Beltway,** Amir Shahpar, *VDOT*; Cat Manzo, *Street Light Data*

**Powell Bill Funding Program Visualization,** Majed Al-Ghandour, *NCDOT*

### TUESDAY, June 11

1:30 p.m. – 3:00 p.m. **Concurrent Technical Session 3, Arbors**

#### Mobility as a Service (MaaS)

**Moderator:** Janille Smith-Colin, *Southern Methodist University*; Eric Shimizu, *DKS Associates*

**Modeling the Adoption, Frequency, and Characteristics of Ride-Hailing Trips in Dallas, Texas,** Patricia Lavieri, *University of Melbourne*; Chandra Bhat, *The University of Texas at Austin*

**Lessons Learned from Shared Services for GRITA, SRTA, and the ATL Authority,** Jamie M. Fischer, *State Road and Tollway Authority / Georgia Regional Transportation Authority*

**Increasing Transit Accessibility Using Shared Autonomous Vehicles,** Ting Zuo and Heng Wei, *University of Cincinnati*

**MaaS and Advanced Analytics,** Edward Chavis and Andy Taylor, *Cubic*

**Modeling Individuals' Willingness to Share Trips with Strangers in an Autonomous Vehicle Future,** Chandra Bhat, *University of Texas at Austin*

3:30 p.m. – 5:00 p.m. **Concurrent Technical Session 4, Arbors**

#### Electric Vehicles

**Moderator:** Eva Lerner-Lam, *Palisades Consulting Group*

**Evaluating Fuel Tax Revenue Impacts of Electric Vehicle Adoption in Virginia Counties: Application of a Bivariate Linear Mixed Count Model,** T. Donna Chen, Wenjian Jia and Zhiqiu Jiang, *University of Virginia*; Rajesh Paleti, *Pennsylvania State University*

**An Analysis of Attributes of Electric Vehicle Owners' Travel and Purchasing Behavior: The Case of Maryland,** Amirreza Nickkar, Hyeon-Shic Shin, and Andrew Farkas, *Morgan State University*

**Promoting the Usage of Electric Vehicles through the Efficient Design of Charging Station Network,** Mohammad Miralinaghi, Sania Seilabi, and Samuel Labi, *Purdue University*

**TRACK B: CHALLENGES & OPPORTUNITIES FOR EMERGING TECHNOLOGIES** *(continued)*

**WEDNESDAY**, June 12

9:15 a.m. – 10:45 a.m. **Concurrent Technical Session 5, Arbors**

**Artificial Intelligence (AI)**

**Moderators:** Lili Du, *University of Florida*; Christian Braneon, *Hummingbird Firm*

**AI Applications for Transportation Engineering – How to Define Research Projects**, Peter Huang, *FHWA*

**Promises of Big Data in Transportation Planning Applications**, Cynthia Chen, *University of Washington*

**AI in Transportation Cyber Physical Systems**, Daniel B. Work, *Vanderbilt University*

**Microsoft Video Analytics for Traffic Safety**, Lon Tierney, *Microsoft*

11:00 a.m. – 12:30 p.m. **Concurrent Technical Session 6, Arbors**

**Unmanned Aerial Systems (UAS)**

**Moderator:** Halil Ceylan, *Iowa State University*; David Hurwitz, *Oregon State University*

**Unmanned Aerial Systems in Civil/Transportation Engineering: A Compressive Review**, Halil Ceylan, *Iowa State University*

**Use of Drones by Oregon DOT and Other State Highway Agencies**, Chris Glantz, *Oregon DOT*

**Driver Behavior Due to Unmanned Aerial Vehicle Height: A Driver Simulator Study**, Alyssa Ryan, Cole Fitzpatrick, and Michael Knodler, *University of Massachusetts Amherst*

**Exploring the Application of LiDAR for Flooded Roadway Management**, Seri Park, *Villanova University*

**Validation of Traffic Simulation Model Output Using High-Resolution Video by Unmanned Aerial Vehicles**, Chennan Xue and Huaguo Zhou, *Auburn University*; Mohammad Jalayer, *Rowan University*





# Technical Program | TRACK C

**TRACK C: TRANSPORTATION SAFETY** | Track Chair: Robert W. Bryson, City of Milwaukee (Retired)

## MONDAY, June 10

1:30 p.m. – 3:00 p.m. **Concurrent Technical Session 1, Birch**

### Safety Effects of Roadway Elements & Traffic Control

**Moderator:** Yinhai Wang, *University of Washington*

**Pedestrian and Bicyclist Crash Trends in Shared Bus-Bike Lanes**, Istiak A. Bhuyan, Celeste Chavis, *Morgan State University*

**Analyzing the Safety Impacts of Raised Median Islands**, Grant Schultz, Marlee Seat, Wyatt Clegg, Mitsuru Saito, *Brigham Young University*

**Assessing the Impact of Protected Bicycle Infrastructure on Driver Behavior**, Aikaterini Deliali, Francis Tainter, Nicholas Campbell, Eleni Christofa, Michael Knodler, *University of Massachusetts Amherst*

**Shared Bus-Bike Lane Safety Analysis: Assessing Multimodal Access and Conflicts Using Computer Vision Tools**, Istiak Bhuyan, Celeste Chavis, *Morgan State University*

3:30 p.m. – 5:00 p.m. **Concurrent Technical Session 2, Birch**

### Railroad Grade Crossing Safety

**Moderator:** Robert W. Bryson, *City of Milwaukee (Retired)*

**National Crossing Inventory and Emergency Notification System (ENS)**, James Dahlem, *Federal Railroad Administration*

**Railroad Grade Crossing Safety: New Technologies**, Rick Campbell, *CTC, Inc.*

**Advanced Railroad Grade Cross Technologies in North Carolina**, Matthew Simmons, *North Carolina DOT*

**Advanced Information Systems at Railroad Grade Crossings**, Garreth Rempel, *TRAINFO*

## TUESDAY, June 11

1:30 p.m. – 3:00 p.m. **Concurrent Technical Session 3, Birch**

### Crash Prediction and Assessment

**Moderator:** Mecit Cetin, *Old Dominion University*

**"If it ain't broke..." and Other Safety Lessons**, Kendra Schenk, *Burgess and Niple, Inc.*

**Developing Safety Performance Functions for Bicycle-Vehicle Crashes on Segments and Intersections in Alabama Using Different Modeling Techniques**, Kirolos Haleem, *Western Kentucky University*; Naveen Mallipaddi, *The University of Alabama in Huntsville*

**Evaluating CAV Safety Impacts with Simulation and Artificial Intelligence**, Sikai Chen, *Purdue University*

**Predicting Vulnerable Road User Crashes Based on Seasonable Pattern**, Wei Zhang, Chenhui Liu, *FHWA*

3:30 p.m. – 5:00 p.m. **Concurrent Technical Session 4, Birch**

### Big Data Collection and Analysis to Achieve Vision Zero

**Moderator:** Mohamed Ahmed, *University of Wyoming*

**Designing for Sustainable Safety and Vision Zero**, Melany Alliston-Brick, Emily Koehle, Megan McCarthy Graham, *Toole Design Group, LLC*

**Toward Vision Zero – A Novel Framework for Detecting, Classifying, and Logging Live Traffic Conflict Events**, Jidong Yang, *Kennesaw State University*

**A Methodology for Analyzing Intersection Safety**, Grant Schultz, Mitsuru Saito, *Brigham Young University*; Joshua Gibbons, *Hales Engineering*

**Preventing Rear-End Collisions at Suburban Signalized Intersections**, Yen-Hsiang Chen, Yen-Hsiang Chen, Gang-Len Chang, *University of Maryland*; Sung Yoon Park, Minseok Kim, *Maryland Department of Transportation State Highway Administration*

## TRACK C: TRANSPORTATION SAFETY *(continued)*

**WEDNESDAY**, June 12

9:15 a.m. – 10:45 a.m. **Concurrent Technical Session 5, Birch**

### **Financial, Legal, and Policy Issues for Transportation Safety**

**Moderator:** Eric Donnell, *Pennsylvania State University*

**Predictive Analytics for Law Enforcement to Improve Traffic Safety**, Andi Bill, *University of Wisconsin*

**Explore First Order Approximation of Energy Equivalence of Safety at Intersections**, Lei Zhu, Stan Young, *National Renewable Energy Lab (NREL)*

**Improving Drivers' Education Regarding Wrong Way Driving Incidents**, Mohammad Jalayer, Jason Roberts, Kevin Takacs, *Rowan University*

**A Comparison Between Calibration Factors and Calibration Functions for Predicting Crashes on Freeway Speed-Change Lanes in Kansas**, Imalka Matarage and Sunanda Dissanayake, *Kansas State University*

11:00 a.m. – 12:30 p.m. **Concurrent Technical Session 6, Birch**

### **Research Related to Crash Problem Identification and Prevention**

**Moderator:** Girija Subramaniam, *Forcing Functions, LLC*

**A Driving Simulator Study Evaluating Secondary Crashes for Prevention Purposes**, Michael Williamson, *Indiana State University*

**Modeling the Surrogate Safety of Various Left-Turn Phase Sequences**, Rohith Prakash Panthangi, *AECOM*; Francis Tainter, *University of Massachusetts Amherst*

**City of Lakeland, FL: Intersection Collision Avoidance Safety Program – iCASP**, Angelo Rao, *City of Lakeland*

**Operational Analysis of School Zones Using a Driving Simulator**, Didier Valdes, Benjamin Colucci, Alberto Figueroa, Enid Colon Torres, Maria Rojas, Ricardo Garcia, Yindhira Taveras, Ivelisse Ramos, Carolyn Arroyo, *University of Puerto Rico at Mayaguez*



# Technical Program | TRACK D

**TRACK D: Planning & Development** | Track Chair: Jessie Jones, Arkansas DOT

## MONDAY, June 10

1:30 p.m. – 3:00 p.m. **Concurrent Technical Session 1, Juniper**

### Planning for Smart Cities - Public Sector's Perspective

**Moderator:** David Noyce, *University of Wisconsin at Madison*

**Planning for Smart Cities – Federal level,** Brian Cronin, *USDOT*

**Planning for Smart Cities – State Level,** Roger Cohen, *PennDOT*

**Challenges and Solutions,** Ray Derr, *Transportation Research Board*

3:30 p.m. – 5:00 p.m. **Concurrent Technical Session 2, Juniper**

### Smart Cities Strategies

**Moderator:** Yinhai Wang, *University of Washington*

**CC2DCA Intermodal Connector: Connecting Billions in Infrastructure with a Walk,** Robert Mandle, *Crystal City Business Improvement District*

**Designing Smarter Buses for Smarter Cities,** Chao Xue, Gillig, *Bus Company*

**Using Emerging Trends in Big Data and Natural Capital Scarcity to Improve Operability and Gain**

**Competitive Advantage for both Public and Private Sector Entities,** Maureen Koetz, *Sustainability Executive and Consultant*

**Assessing the Socioeconomic Implications Related to the Emergence of Shared Autonomous Vehicles,** Lisa Lorena Losada-Rojas, Christos Gkartzonikas, and Konstantina Gkritza, *Purdue University*

## TUESDAY, June 11

1:30 p.m. – 3:00 p.m. **Concurrent Technical Session 3, Juniper**

### Integrating MaaS and Smart Mobility into Smart Cities

**Moderator:** Samuel Labi, *Purdue University*

**Connected and Automated Transportation Strategies for Mobility as a Service to Cities,** Johnanna Zmud, *Texas A&M Transportation Institute*

**Estimation of Container Port Efficiency Using Data Envelopment Analysis and Free Disposal Hull Approaches: The Case of the Caribbean,** Anastasios Charisis, Stavroula Manta, and Evangelos Kaisar, *Florida Atlantic University*; Majed Al-Ghandour, *North Carolina Department of Transportation*

**Utilization of Unmanned System Technology in Transportation Engineering – A Case Study,** Michael R. Williamson, *Indiana State University*

**Ridesharing Program as a Mobility Option for First/Last Mile Destinations,** Saeed Reza Ramezanpour Nargesi, Sheida Khademi, Stephen Mattingly, Vivian Miller, and Courtney Cronley, *University of Texas at Arlington*

3:30 p.m. – 5:00 p.m. **Concurrent Technical Session 4, Juniper**

### Can We Be Smart, Safe and Secure at the Same Time?

**Moderator:** Diniece Mendes, *New York City DOT*

**Impacts of Adaptive Cruise Control Vehicles on Traffic Stability,** Raphael Stern, George Gunter, Daniel Work, *Vanderbilt University*

**Control System Cybersecurity & What It Means to Smart Cities,** Joe Weiss, *Applied Control Solutions*

**Electric Vehicle Charging Infrastructure Cybersecurity,** Kevin Heaslip, *Virginia Tech*

**Multi-Objective Longitudinal Velocity Control for Autonomous Driving,** Meixin Zhu, Yinhai Wang, *University of Washington*

## TRACK D: PLANNING & DEVELOPMENT *(continued)*

### WEDNESDAY, June 12

9:15 a.m. – 10:45 a.m. **Concurrent Technical Session 5, Juniper**

#### **Leveraging Data to Make Us Smarter**

**Moderator:** Chengbo Ai, *UMass Amherst*

**Leveraging Data and Technology to Improve Curb Ramps in Virginia**, Ning Li, *VDOT*

**Activating Big Data for Active Transportation with a Statewide Data Platform**, Naveen Juvva, *StreetLight Data*; Brian Bulaya, *Caltrans*

**A New Paradigm – Mobility Energy Productivity**, Stan Young, Venu Garikapati, and Yi Hou, *National Renewable Energy Lab (NREL)*

**Coding the Curb**, Jacob Baskin, *Coord*

11:00 a.m. – 12:30 p.m. **Concurrent Technical Session 6, Juniper**

#### **Smart Ideas for Today and Tomorrow**

**Moderator:** Shannon McDonald, *Southern Illinois University*

**Urban Land Use and Transportation: Implications for Civil Engineers and Architects**, Christopher Forinash, *Nelson/Nygaard*

**Anti-Corruption Activities in Infrastructure Project Delivery by Implementing Technology**, Seyedali Ghahari, Samuel Labi, and Shabnam Ghotbi, *Purdue University*; Cesar Queiroz, *Roads and Transport Infrastructure*; Majed Alinizzi, *Qassim University*

**Smart Cities Powered by Smart Utility Planning**, Chengbo Ai, *University of Massachusetts Amherst*; Sheldon Qiu, *Beihang University*; Bo Xue, *Global Data Communication*; Yongjun Chen, *Beijing University*

**Assessing the Effects of Fully Automated Vehicle Fleet on Geometric Design**, Rima Abi Saad, *New Jersey Institute of Technology*

**Laying the Ground Rules: How Cities Can Foster Cooperative Automation**, Paul Avery and Krishna Patnam, *AECOM*



# Technical Program | TRACK E

**TRACK E: RAIL & PUBLIC TRANSIT** | Track Chair: Walt Kulyk, FTA (Retired)

## MONDAY, June 10

1:30 p.m. – 3:00 p.m. **Concurrent Technical Session 1, Aspen**

### **2030: A Look at the Future of Rail and Public Transit**

**Moderator:** Gary Hsueh, *Prospect Silicon Valley*

**Expanding Development Opportunities Due to New Mobility Options,** Shannon McDonald, *Southern Illinois University*

**Some 21st Century Transportation Solutions,** Peter Muller, *Advanced Transit Association*

**Mobility Trends, Automation and the Future of Transit,** Matthew Lesh, *Comet Mobility*

**The Potential for Automated Transit Shuttles,** Koorosh Olyai, *Stantec*

3:30 p.m. – 5:00 p.m. **Concurrent Technical Session 2, Aspen**

### **New Energy for Rail and Public Transit**

**Moderator:** Matthew Lesh, *Comet Mobility*

**Getting to Scale with Battery Electric Bus Infrastructure,** Fred Silver, Elliott Popel, *CAI/START*

**Zero Emission Buses: State of the Industry and Deployment Best Practices,** Dan Raudebaugh, *Center for Transportation and the Environment*

**Use of Hydrogen and Related Infrastructure for Rail Operations,** Stan Thompson, *Mooresville Hydrail Initiative*

**New Energy for Resiliency in Rail and Public Transportation,** Shannon McDonald, *Southern Illinois University*

**Challenges and Progress in Transitioning to Zero Emission Vehicles in Public Transport,** Cliff Henke, *WSP USA*

## TUESDAY, June 11

1:30 p.m. – 3:00 p.m. **Concurrent Technical Session 3, Aspen**

### **Big Data and Analytics for Rail and Public Transit**

**Moderator:** Nicholas Lownes, *University of Connecticut*

**Data Analytics in Urban Transportation,** Peyman Noursalehi, *MIT*

**Estimating Impacts of Automated Shuttles,** Gary Hsueh, *New Mobility*

**Using Data and Dashboards for Bus System Performance Monitoring,** Rachel Lesniak, Wylie Timmerman, *Foursquare*

**Use of SmarTrip Card Data for Washington's Rail and Bus Systems,** Catherine Vanderwaart, *WMATA*



**TRACK E: RAIL & PUBLIC TRANSIT** *(continued)*

**TUESDAY, June 11** *(continued)*

3:30 p.m. – 5:00 p.m. **Concurrent Technical Session 4, Aspen**

**Advanced Communications for Rail and Public Transit**

**Moderator:** David Clarke, *University of Tennessee*

- Is there a Case for High Speed/High Capacity PRT?**, Eugene Nishinaga, *Systems Micro Technology*
- Railroad Track Irregularities: Position Accuracy Assessments Using Low-Cost Sensors on a Hi-Rail Vehicle**, Bhavana Bhardwaj, Raj Bridgelall, Pan Lu, and Neeraj Dhingra, *North Dakota State University*
- The Benefits and Impacts of Positive Train Control**, Sam Alibrahim, *Federal Railroad Administration*
- Integrated Communications of Rail with Other Transportation Modes : Is this the Future?**, Dimitris Rizos , Yu Qian, *University of South Carolina*

**WEDNESDAY, June 12**

9:15 a.m. – 10:45 a.m. **Concurrent Technical Session 5, Aspen**

**Financial and Legal Issues for Rail and Public Transit**

**Moderator:** Heng Wei, *University of Cincinnati*

- Financial, Legal, and Other Constraints on Modernizing New York’s MTA System**, Robert Paaswell, *City College of New York*
- Competitive Challenges for the Major Freight Rail Systems in the United States**, David Clarke, *University of Tennessee*
- Issues Facing Short Line Railroads in this Country**, Dimitris Rizos, *University of South Carolina*
- The Promise and Rise of Private Passenger Rail in the United States**, Jim Ziglar, Valentin Villalbi, and Igor Dabik, *Deloitte*

11:00 a.m. – 12:30 p.m. **Concurrent Technical Session 6, Aspen**

**Emerging Civil Engineering Codes and Standards for Rail and Public Transit**

**Moderator:** Koorosh Olyai, *Stantec*

- ASCE Automated People Mover Standards: Changes Adopted in 2018**, Peter Muller, *Advanced Transit Association*
- International Standards for Transit**, Koorosh Olyai, *Stantec*
- Advanced Techniques in Railroad Engineering-Railroad Accidents Causes & Innovative Prevention Techniques**, Avinash Prasad, *NYU Tandon*
- Is Your Infrastructure Ready for Electric Buses? New ASCE Standard Paves the Way**, David Hein, *Applied Research Associates*



**TRACK F: INFRASTRUCTURE SYSTEMS** | Track Chair: Diniece Mendes, New York City DOT

## MONDAY, June 10

1:30 p.m. – 3:00 p.m. **Concurrent Technical Session 1, Chestnut**

### **Infrastructure Systems Resiliency and Interdependencies**

**Moderator:** Christina Torres-Machi, *University of Colorado at Boulder*

**Road Map for Development and Implementation of Permeable Pavement,** John Harvey, *University of California Pavement Research Center, Davis*; David R. Smith, *Interlocking Concrete Pavement Institute*

**Structural Design of Permeable Interlocking Concrete Block Pavements – ASCE Standard 68-10,** David Hein, *Applied Research Associates*

**Measuring the Sustainability of Transport System in Amman,** Njoud Al Hurr and Laith Tashman, *University of Jordan*

**Evaluation of Enhanced Traffic Mobility through Smart City Infrastructure Strategies in Developing Countries – A Case of Botswana,** Adewole Simon Oladele, *Morgan State University*

3:30 p.m. – 5:00 p.m. **Concurrent Technical Session 2, Chestnut**

### **Asset Management in the Era of Smart Cities**

**Moderator:** Christina Torres-Machi, *University of Colorado at Boulder*

**Transforming Las Vegas into one of America’s Smartest Cities,** Mike Warren, *WSP USA*

**Transforming Ohio Smart Cities using Intelligent Video Analytics,** Joel White, *Bosch Security Systems, Inc.*

**Bridge Asset Management,** Avinash Prasad, *MTA-NYCT & NY University*; Indira Prasad, *MTA-BT, Stevens Institute of Technology*

## TUESDAY, June 11

1:30 p.m. – 3:00 p.m. **Concurrent Technical Session 3, Chestnut**

### **Roundtable on Integration of Electric Power and Electric Vehicle Charging Infrastructure Systems**

**Moderator:** Diniece Mendes, *New York City Department of Transportation*

**Accelerating the Investment in Transportation Electrification Across America,** Michael Krauthamer, *EV Advisors LLC*

**Role of Electric Vehicle Associations in Increased Electric Vehicle Adoption in Greater Washington DC,** Ron Kaltenbaugh, *Electric Vehicle Association of DC*

**Public Sector Perspective on Integrating Electric Vehicle into the Public Realm,** Susan McSherry, *New York City Department of Transportation*

3:30 p.m. – 5:00 p.m. **Concurrent Technical Session 4, Chestnut**

### **Truck Platooning Impacts on Infrastructure, Energy, and Environment**

**Moderator:** David Hein, *Applied Research Associates*

**Update on U.S. DOT Truck Platooning Activities,** Gene McHale, *FHWA Office of Operations R&D*

**Update on FHWA Study on Truck Platooning Impacts on Bridges,** Derek Constable, *Office of Bridges & Structures, U.S. Federal Highway Administration*

**Developing Geometric/Traffic Operations Guidance for Level 2 Automated Commercial Truck Platooning,** Kevin Balke, *Texas A&M Transportation Institute*

**TRACK F: INFRASTRUCTURE SYSTEMS** *(continued)*

**WEDNESDAY, June 12**

9:15 a.m. – 10:45 a.m. **Concurrent Technical Session 5, Chestnut**

**Engineering Smart Mobility for Smart Cities – Perspectives on Equity and Inclusion**

**Moderator:** Diniece Mendes, *New York City DOT*

**Incorporating Equity and Inclusion in Transportation Planning and Engineering,** Veronica O. Davis, *Nspiregreen*

**Inclusion for Smart and Resilient Cities,** Phil Jones, *Lime Shared Use Mobility and Equity*

**Equitable Smart Cities Design and Development: Examples Across the U.S.,** Carla Mays, *#SmartCohort*

**Meaningful Engagement for Smart Cities Deployment: Bridging the Gap Across Communities,** Andreas Addison, *Civic Innovator*

11:00 a.m. – 12:30 p.m. **Concurrent Technical Session 6, Chestnut**

**How 5G Will Transform Society and Enable Smart Cities**

**Moderator:** Jeff Opett, *Bechtel*

Fundamentally, Smart Cities are all about data sensing, collection and analytics that use secure, high-speed communications networks. 5G technology provides enormous improvements in network speed and bandwidth, low latency, enablement of network splicing and mesh networks, and can be deployed in 10-100 times more locations than 4G.

This session will describe the characteristics of rapidly emerging 5G infrastructure and the role of the civil engineer in ensuring its safe, secure and reliable delivery to the public.



## TRACK G: TRAFFIC OPERATIONS | Track Chair: Robert W. Bryson, City of Milwaukee (Retired)

### MONDAY, June 10

1:30 p.m. – 3:00 p.m. **Concurrent Technical Session 1, Poplar**

#### Infrastructure System Readiness for Automated Vehicles

**Moderator:** Robert W. Bryson, *City of Milwaukee (Retired)*

**Roadway Infrastructure System Readiness for Automated Vehicles: Insights from the 2018 National Dialogue,** John Corbin, *FHWA*

**Industry Perspectives on Innovation in Traffic Control Devices for Automated Vehicles,** Ken Smith, *3M*

**Integrating Automated Vehicles into the National Traffic Control System: Near Term and Long Term Policy Strategies,** Harry Campbell, *VDOT*

**Automated Vehicles: National Traffic Control System Policies and Technologies,** Adam Pike, *Texas A&M Transportation Institute*

3:30 p.m. – 5:00 p.m. **Concurrent Technical Session 2, Poplar**

#### Innovation in Signalized Intersection Control

**Moderator:** David Noyce, *University of Wisconsin at Madison*

**GDOT Connected Vehicle Deployment – Plans & Progress,** Alan Davis, *Georgia DOT*

**Evaluation of the Adaptive Transit Signal Priority of the Vissim Ring Barrier Controller,** Kianoush Kompany, *RK&K; Montair Abbas, Virginia Polytechnic Institute and State University*

**Developing a Cost-effective Functioning Tabletop Model for Traffic-Actuated Signalized Intersections,** Aly Tawfik, Tranice Warner, and Enaas Hasan, *California State University, Fresno; Ihab Elzaanoun, California DOT*

**Exploring Safety Effects of Adaptive Signal Control Systems,** Weimin Jin, Sakib M. Khan, Mashrur Chowdhury, *Clemson University*

### TUESDAY, June 11

1:30 p.m. – 3:00 p.m. **Concurrent Technical Session 3, Poplar**

#### Urban Streetscapes for Smart Mobility and Sustainability

**Moderator:** William J. Scully, *Green International Affiliates, Inc.*

**Evaluating the Pedestrian Hybrid Beacon's Effectiveness at Midblock Pedestrian Crossings: A Case Study in New Jersey,** Brendan Mulvihill, Mohammad Jalayer, Christopher Campbell, Michael Mosley, *Rowan University*

**Modeling Impacts of Bicycle Sharing Systems in Different Urban Densities,** Cameron Healy, *Naval Undersea Warfare Center*

**Design of Dual-mode Signal Progression along an Arterial with a Bus Exclusive Lane,** Hyeonmi Kim, Yao Cheng, Gang-Len Chang, *University of Maryland, College Park*

**Exploring Different Perception Levels of Sidewalks in the Context of Safe Routes to School,** Seri Park, Nicholas Zoccoli, Tommy Luo, and Michael Crimmins, *Villanova University*

## TRACK G: TRAFFIC OPERATIONS *(continued)*

**TUESDAY, June 11** *(continued)*

3:30 p.m. – 5:00 p.m. **Concurrent Technical Session 4, Poplar**

### Advanced Traffic Control Systems and Devices

**Moderator:** Michael Knodler, *University of Massachusetts Amherst*

**Driver Understanding of Supplemental Yield Pavement Markings at Roundabouts,** Beau Burdett, Madhav Chitturi, Andi Bill, David Noyce, *University of Wisconsin*; Ibrahim Alsgan, *KFUPM*

**An Economical Traffic Control Device for Originally Unsignalized Intersections with Autonomous Vehicles and Human-Driven Vehicles Mixed Traffic,** Yu Song, Ge Shi, and David Noyce, *University of Wisconsin*

**Drivers' Response to Variable Message Signs in Dynamic Lane Assignment Application Using Artificial Neural Networks and Other Traditional Techniques,** Khaled Assi, Nedal Ratrou, *KFUPM*; Majed Al-Ghandour, *NCDOT*

**Impact of Major Road Traffic Volume on the Vehicle Density of Different Lanes of the Major Road in Proximity of a Driveway for Autonomous Vehicle vs. Conventional Vehicle Environments,** Seyedeh Maryam Mousavi, Dominique Lord, *Texas A&M University*; Osama A. Osman, *Virginia Tech Transportation Institute*

**WEDNESDAY, June 12**

9:15 a.m. – 10:45 a.m. **Concurrent Technical Session 5, Poplar**

### Innovation in UAV Delivery

**Moderator:** Alison Conway, *City College of New York*

**Charged Up: Energy Impact of Drone Deliveries,** Victor G. Walker, *Idaho National Lab*

**Transportation Impacts of Delivery Drones,** Erica Wygonik, *RSG*

**UAS Package Delivery Opportunities: Possible Threats and Opportunities for State and Local Governments,** Daniel Friedenzohn, *Embry-Riddle Aeronautical University*

**FAA Viewpoint on UAV Delivery**

11:00 a.m. – 12:30 p.m. **Concurrent Technical Session 6, Poplar**

### Toward Safe and Efficient Freight Operation

**Moderator:** David Noyce, *University of Wisconsin-Madison*

**Towards a Smart Urban Freight Plan,** Maggie Dong, Varanesh Singh, and Lian Duan, *ARUP*; Diniece Peters, *NYCDOT*; Joseph Dack, *HDR*

**Considerations for Freight and Emergency Vehicles in Complete Streets Design,** Alison Conway, *City College of New York*

**Freight Oriented Development and Mobility in Smart Cities,** Amiy Varma, *North Dakota State University*

**Regional Improvements of Multi-State Freight Corridors Based on Economic Value and Bottleneck Deficiencies,** Ernie Perry, Sue Ahn, and Youngjun Han, *University of Wisconsin*



# Technical Program | TRACK H

## TRACK H: AVIATION PLANNING & OPERATIONS

Track Chair: Rich Thuma, Crawford, Murphy, and Tilly

### MONDAY, June 10

1:30 p.m. – 3:00 p.m. **Concurrent Technical Session 1, Walnut**

#### **Airside Planning for the Future of Aviation**

**Moderator:** Geoff Baskir, *FAA*

**Future Aircraft Configurations and Their Impact on Airport Planning**, Yonglian “Liana” Ding, *Boeing*

**Understanding Go-Arounds from an Airside Planning Standpoint: Causes, Frequencies, Misconceptions, and Mitigations**, William Dunlay, *WJDunlay Consulting LLC*; Michael Hanowsky, *LeighFisher Inc.*

**Dynamic Evolution Analysis of Aviation Network in the Multiple-Airport Systems of China**, Xin Chen and Wiang Gao, *Nanjing University*

**The Future of Utility Planning: Innovation, Collaboration, and Determination**, Adam R. Hardy, *WSP*

3:30 p.m. – 5:00 p.m. **Concurrent Technical Session 2, Walnut**

#### **Airport Landside Planning: Multimodal Connections**

**Moderator:** William Lebegern, *HNTB*

**Airport Cities: Urban Planning, Design, and Development Puzzle**, Amiy Varma, *North Dakota University*

**Four Airport Megatrends Serving as Drivers of a Smart Resilient City – A Perfect Storm Rising: Rapid Mobility Transitions, Integration of New Energy Choices, Investments in Infrastructure Modernization, and Revenue Diversification**, Josh Sperling, Alejandro Henao, Venu Garikapati, and Stan Young, *NREL*

**Access Planning for the New Mexico City International Airport**, Ernest Choi and Daniel Barton, *InterVISTAS*

**Landside/Facility Asset Management: Lessons Learned from Implementing a Foundational Strategy and A Risk Based Approach**, David Sklar, *WSP*

### TUESDAY, June 11

1:30 p.m. – 3:00 p.m. **Concurrent Technical Session 3, Walnut**

#### **Planning Airport Terminals for the Future of Air Transport**

**Moderator:** Amiy Varma, *North Dakota State University*

**Airport Passenger Terminals in Brazil – The Post-Privatization Era**, Alex de Barros, *University of Calgary*

**Nashville International Airport (BNA) Modernization Vision: Building the Future, Connecting Nashville to the World**, Robert Ramsey, *Metro Nashville Airport Authority*

**Application of Emerging Technologies in the DFW Terminals**, Mike Youngs, *DFW Airport*

**TRACK H: AVIATION PLANNING & OPERATIONS** *(continued)*

**TUESDAY, June 11** *(continued)*

3:30 p.m. – 5:00 p.m. **Concurrent Technical Session 4, Walnut**

**Spaceports**

**Moderator:** Dan Barton, *InterVISTAS*

**Managing Space Traffic: Is There a Sustainable Solution?**, Diane Howard, *Embry Riddle Aeronautical University*

**Phased Infrastructure Development at Houston Spaceport**, Brian Gulliver, *Kimley-Horn*

**Colorado Air and Space Port**, David Ruppel, *Colorado Air and Space Port*

**Innovative Spaceport Financing**, Elizabeth Evans, *Reed Smith*

**WEDNESDAY, June 12**

9:15 a.m. – 10:45 a.m. **Concurrent Technical Session 5, Walnut**

**Unmanned Aerial Systems Operations In and Around Airports**

**Moderator:** Vivek Khanna, *HNTB*

**Managing Unmanned Aircraft Systems in the Vicinity of Airports**, Chrisanth Fernando, *Booz Allen Hamilton*

**eVTOL: The Future of On-Demand Air Transport**, Tom Cornell, *Landrum and Brown*

**UAS Integration with Transportation Planning**, Basil Yap, *NCDOT*

**System Design of eVTOL on-Demand Service for Multimodal Urban Mobility**, Yu Zhang, *University of South Florida*

**FAA UAS Forecast**, Dipasis Bhadra, *Federal Aviation Administration*

11:00 a.m. – 12:30 p.m. **Concurrent Technical Session 6, Walnut**

**New Technology Impacts on Airport Planning and Operations**

**Moderator:** Rich Thuma, *Crawford, Murphy & Tilly, Inc.*

**Implementation of a GIS Integrated Airport Pavement Management System**, Vivek Khanna, *HNTB*

**The Accessible Age of Air Travel, Emerging Technologies, and Customer Experience**, Christopher Blasie, *Airlines for America*

**Connected Airports (ACRP Study)**, Johanna Zmud, *Texas A&M Transportation Institute*

**How Automated Vehicles Will Impact Airports**, Geoffrey Gosling, *Aviation System Consulting*; Daniel Barton, *InterVISTAS*



## Are you looking for a way to be more engaged at ICTD 2019?

Join the conversation with #ICTD19 and follow T&DI on Twitter @ASCE\_TDI.

### Social Media Contest

Post on Instagram, Twitter, or LinkedIn using the hashtag #ICTD19. A winner will be chosen from those who post using the conference hashtag. Contest prize will be an emailed gift card, post-conference. Winner must be a registered attendee of ICTD 2019.

See a full list of scavenger hunt items in the conference app!

Also post other items such as:

- **Attend a session and tag the speaker**
- **Post a “Behind the Scenes” picture from one of the technical tours**
- **Get a selfie with an exhibitor**
- **Did you explore our host city? Get a quintessential Alexandria selfie!**





## Poster Sessions

Monday, June 10 | 7:30 a.m. - 3:30 p.m.

Monday, June 10 | 5:15 – 6:30 p.m.

Poster presenters are asked to stand by their poster during this session only, but the posters will be available other times.

Tuesday, June 1 | 7:30 a.m. - 3:30 p.m.

## Poster Topics

**Challenges & Opportunities for Emerging Technologies**

**Planning & Development**

**Rail & Public Transit**

**Traffic Operations**

**Transportation Safety**

### **BEST POSTER AWARD**

The Committee of Young Professionals and Student Activities will select the best poster presented during the interactive poster session. In special cases, it is possible to have more than one winning poster. The winner(s) of the Best Poster Award will be announced during the Awards Banquet.

*Details available in the Younger Members Events tab.*



POSTERS

#ICTD19

## Challenges & Opportunities for Emerging Technologies

**An Analysis of the Impacts of Autonomous Vehicles on Private Household Vehicle Ownership in the State of Connecticut**, Nicholas Lowmes, Sruthi Mantri, Stephen Michna, *University of Connecticut*

**Anticipated Changes in Highway Agency Expenditures and Revenues, and User Equity in the CAV Era**, Tariq Usman Saeed, Bortiorakor Nii Tsui Alabi, Samuel Labi, Mohammad Miralinalaghi, Kumares Sinha, *Purdue University*, Matthew Volovski, *Manhattan College*

**Congested Traffic Impact Mechanism on Vehicle Classification over Dual-Loop Detection**, Zhixia Li, *University of Louisville*, Qingyi Ai, *Arcadis U.S., Inc.*, Hao Liu, *PATH Program, The University of California at Berkeley*, Heng Wei, Ting Zuo, *University of Cincinnati*

**Deep Trajectory Similarity Model: A Fast Method for Trajectory Similarity Computation**, Jianming Hu, Jiayi Guo, Ruobing Zhang, *Tsinghua University*, Xin Pei

**Driver and Passenger Trust of Vehicle Automation and Connectivity**, Samuel Labi, Tariq Usman Saeed, Bortiorakor Nii Tsui Alabi, *Purdue University*

**Electric Roadways: Market Adoption, Willingness to Pay and Impact on Emissions**, Theodora Konstantinou, Christos Gkartzonikas, Konstantina Gkritza, *Purdue University*

**Estimation of Unobserved Vehicles in Congested Traffic from Probe Vehicle Samples**, Mecit Cetin, Behrouz Salahshour, Reza Vatani Nezatf, *Old Dominion University*

**Freight Mode Choice: A Machine Learning Approach**, Rodrigo Mesa-Arango, *Florida Institute of Technology*

**Frequency and Distribution of Conflicts on Major Road in Proximity of an Access Point for Autonomous Vehicle vs. Conventional Vehicle Environments**, Seyedeh Maryam Mousavi, *Texas A&M Transportation Institute*, Dominique Lord, *Texas A&M University*

**Groundbreaking Trends with Aerial Data Collection and Analysis**, Travis Featherby, Jesse Lund, Ryan Mextorf, Deloitte, Blaine Horner, *PrecisionHawk*

**Impacts of Downstream Observability on the Traffic Performance Within a Tunnel**, Ehsan Beheshtitabar, Mecit Cetin, *Old Dominion University*, George F. List

**Implementing Deep Neural Networks for Video-based Vehicle Detection and Tracking**, Jidong Yang, *Kennesaw State University*

**Landmark Assisted Stereo Visual Odometry**, Yuhan Dong, Rong Li, *Division of Information Science and Technology*, Mingyao Qi, Kai Zhang, *Department of Logistics and Transportation*

**Modeling Autonomous Vehicle Driver Take-Over Propensity Using Econometric Methods**, Samuel Labi, Yu Qiao, Mahmood Tarighati Tabesh, Bortiorakor Nii Tsui Alabi, *Purdue University*

**Parking Facility Location in the Era of Automated Vehicles**, Samuel Labi, Mohammad Miralinalaghi, Mahmood Tarighati Tabesh, *Purdue University*

**Perceived Safety of Autonomous Vehicles: An Exploration and Critical Examination of a Common Motivator**, Drew Gatlin, *West Virginia University*, Christos Gkartzonikas, *Purdue University*, V. Dimitra Pyrialakou, *West Virginia University*, Konstantina Gkritza, *Purdue University*

**Predicting the Effect of Connected Vehicles on Safety near Traffic Incidents on Freeways**, Ryan Fries, Sima Moradi Bajestani, *Southern Illinois University Edwardsville*

**Preparing Highway Infrastructure for the Emerging Era of CAVs**, Tariq Usman Saeed, Bortiorakor Nii Tsui Alabi, Mohammad Miralinalaghi, Samuel Labi, Kumares Sinha, *Purdue University*

**Ridesharing Program as a Mobility Option for First/Last Mile Destinations**, Saeed Reza Ramezanpour Nargesi, Sheida Khademi, Stephen Mattingly, Vivian Miller, Courtney Cronley, *University of Texas at Arlington*

**The Crash Avoidance Effectiveness of Advanced Driver Assistance Systems in Real-World Environment**, Mohamed Abdel-Aty, Lishengsa Yue, Yina Wu, *University of Central Florida*

**The Effect of Truck Platooning on Sign Occlusion on Highways**, Ibrahim Alsghan, *King Fahd University of Petroleum & Minerals (KFUPM)*, Madhav Chitturi, David Noyce, *University of Wisconsin – Madison*

**The Link Between For-Hire Service Pick-Ups and Built Environment: A Longitudinal Analysis**, Jina Mahmoudi, Lei Zhang, *University of Maryland*

**The Role of Accessibility and Built Environment Characteristics in Usage of Information and Communication Technologies in Business**, Jina Mahmoudi, *University of Maryland*, Kelly Clifton

**Throughput-Optimal Pedestrian Crosswalk Activation Within Autonomous Intersection Management**, Rongsheng Chen, Jeffrey Hu, Michael W. Levin, *University of Minnesota*, David Rey, *University of New South Wales*

**Traffic Flow Stability Analysis and Performance Evaluation Methods Based on Connected Vehicle Data**, Leila azizi, Moahammed Hadi, *Florida International University*

**Trust as a Service – Managing Rider’s Confidence in the Sharing Economy**, Andy J. Taylor, *Cubic*

**Urban Aerial Ropeways - The Next Level of Mobility**, Ted Blazer

**Using Duration Models to Analyze Autonomous Vehicle Driver Take-Over Time**, Yu Qiao, Mahmood Tarighati Tabesh, Samuel Labi, Bortiorakor Nii Tsui Alabi, *Purdue University*

## Planning & Development

**A Comparison of Brand Name Impacts on Local Trip Generation Rates**, Michael R. Williamson, *Indiana State University*

**A Probability Bias Model of Trip Distribution**, Rae J. Furlonge, *L F Systems Ltd*

**A Simulation Modeling Approach for Deciding the Scale of Buffer Areas and Gate Lanes in Container Ports**, Xiangda Li, Yun Peng, Xinglu Xu, Wenyuan Wang, *Dalian University of Technology*, Tianqi Zheng, *CCCC Water Transportation Consultants Co., Ltd*

**Accessibility Measurement of Hartford with an Integrated Pedestrian and Transit Network**, Nicholas Lownes, Amit Ranjan Mondal, Asadul Hoque Tanvir, *University of Connecticut*

**Advancements in Railroad Engineering: Maglev Transition from Conventional Railroad to Hybrid Maglev Railroad Technology**, Avinash Prasad, *MTA-NYCT & NY University*, Indira Prasad, *MTA-BT & Stevens Institute of Technology*

**Airline Network Design by Mixed Integer Linear Programming**, Amirreza Nickkar, *Morgan State University*, Majid Seghayati, *Iran University of Science and Technology*, Hasan Khaksar, *Azad University of Parand*

**Analyzing Modal Shift Based on Critical Travel Time for Different Trip Purposes in Medium-Sized City**, Yavuz Delice, *Yalova University*, Halit ÖZEN, *Yildiz Technical University*, Ehsan Amirnazmiafshar, *Istanbul Technical University*

**Application of the Analytic Hierarchy Process in Setting a Municipalities Complete Streets Project Priorities in a Limited Funding Environment**, Somaye Dovirani, William J. Scully, *Green International Affiliates, Inc.*

**Bridge Asset Management**, Avinash Prasad, *MTA-NYCT & NY University*, Indira Prasad, *MTA-BT & Stevens Institute of Technology*

**Comparison of Freight, Courier, and Service Trips in Washington, DC**, Woojung Kim, *Rensselaer Polytechnic Institute*, Kathleen Hancock, *Virginia Polytechnic Institute and State University*

**Connected and Automated Vehicles: Infrastructure Management Considerations**, John Sobanjo, *Florida State University*

**Connectivity as a Performance Measure for Transport Project Evaluation**, Wubeshet Woldemariam, *Purdue University Northwest*, Samuel Labi, *Purdue University*, Asif Faiz, *Faiz and Associates, LLC*

**Current Practices of Construction Manager/General Contractor Delivery Method in the Transportation Industry**, Simon Adamtey, *Kent State University*

**Design and Analysis of Stated-Preference Survey of Drivers’ and Bicyclists’ Understanding of Cycling Regulations: Alabama Case Study**, Kirolos Haleem, *Western Kentucky University*, Sydnie Fiocca, *The University of Alabama in Huntsville*

**Detailed Investigation of Bicycle-Vehicle Safety in Alabama: Crash and Exposure Analyses**, Kirolos Haleem, *Western Kentucky University*, Sydnie Fiocca, *Brittany Wood*, *The University of Alabama in Huntsville*

**Developing a Sustainable Transportation System Under Electric and Autonomous Vehicles Dedicated Lane Deployment Scheme**, Sikai Chen, Young Joun (Paul) Ha, Samuel Labi, Mohammad Miralinaghi, *Purdue University*

**Developing Data-Driven Speed Management Strategies**, Abolfazl Karimpour, Yao-Jan Wu, *The University of Arizona*

**Development of a Novel Actuated Pedestrian Sign for Use at Roundabouts**, Nicholas Fournier, *University of Massachusetts Amherst*

**Development of a Reliable Trip Distribution Matrix Based on Sparse and Limited Data Using Regression and ANN**, Akash Anand, Varghese George, M.S. Padmashree, *National Institute of Technology Karnataka*, Surathkal, Rohini Kanthi, *ARCADIS Design and Consultancy*

**Estimation of Container Port Efficiency Using Data Envelopment Analysis and Free Disposal Hull Approaches: The Case of the Caribbean**, Anastasios Charisis, Evangelos Kaisar, Stavroula Manta, *Florida Atlantic University*, Majed Al-Ghandour, *North Carolina Department of Transportation*

**Evaluation of Android-Based Cell Phone Applications to Measure International Roughness Index of Rural Roads**, Mohammad Hossain, Nikita Nikita, *Bradley University*, Erol Tutumluer, *University of Illinois at Urbana-Champaign*, Cole Grimm

**Human Factors in Naturalistic Driving: An Integrated Research on Driver’s Affective Experience, Avoidance Behavior and Speed Control Performances**, Zhiyong Cui, Ruimin Ke, Ying Jiang, Yin Hai Wang, *University of Washington*, Junyi Zhang, *Hiroshima University*

**Investigation of the Use of Partnering on Construction Manager/General Contractor Transportation Projects**, Simon Adamtey, *Kent State University*, James O. Kereri, *Louisiana State University*

**Need for an Improved Accreditation Curriculum for Driving Instructors, A Missing Link in Traffic Safety in Iran,** Amirreza Nickkar, *Morgan State University*

**Negotiating Concession Period for Highway Public-Private Partnerships with Imperfect Information,** Chunlu Liu, Hongyu Jin, Shijing Liu, Nilupa Udawatta, *Deakin University*

**Neural Correlates of Older Driver Performance,** Madhav Chitturi, Hiba Nassereddine, David Noyce, *University of Wisconsin - Madison*

**Optimal Timing for Converting Signalized Arterials to Free-Flow Intersections,** Jon Fricker, Samuel Labi, Yu Qiao, Nathan Shellhamer, *Purdue University*

**Perception of Time in Traffic Congestion and Drivers' Stress,** Kiichiro Hatoyama, Muneo Kitajima, Katsuko T. Nakahira, Masaya Nishioka, Kazushi Sano, *Nagaoka University of Technology*

**Public Participation as a Social Inclusion Tool in Urban Development. a Case Study of Abuja, Nigeria,** Nwachi P. Louis, Cynthia Ogonna. Ikese, *Dublin Institute of Technology*

**Quantifying the Performance of Low-noise Rumble Strips,** Dylan Horne, David S. Hurwitz, Hisham Jashami, *Oregon State University*, Sirisha Kothuri, Christopher Monsere, *Portland State University*

**Risk Management For Beijing Subway Tunnel Construction Using The New Austrian Tunneling Method: A Case Study,** Bo Liu, Wei Xu, *China University of Mining and Technology, Beijing*, Chunqing Fu, *Beijing Uni-Construction Group*

**Roadway Corridor Redevelopment for Improved Mobility – Complete Streets Approach,** Santiago Burgos, Anthony D'Angelo, Anthony Monocchio, Wubeshet Woldemariam, *Purdue University Northwest*

**Safety Analysis of Managed Toll Lanes Considering Connected Vehicles,** Mohamed Abdel-Aty, Moatz Saad, Yina Wu, *University of Central Florida*, Jaeyoung Lee

**Study on Driver Behavior and Performances on Augmented Reality Display Based Speed Compliance,** Aamani Ramanathan Parthasarthy, *University of Massachusetts*, Sarah Bakhtari, Micheal A. Knodler, Alyssa M. Ryan, Francis Tainter, *University of Massachusetts Amherst*

**Suspension Bridge, Advanced Concepts and Various Innovative Techniques of Structural Evaluation,** Avinash Prasad, *MTA-NYCT & NY University*, Indira Prasad, *MTA-BT & Stevens Institute of Technology*

**Suspension Bridge, Basics Concepts and Various Innovative Techniques of Structural Evaluation,** Avinash Prasad, *MTA-NYCT & NY University*, Indira Prasad, *MTA-BT & Stevens Institute of Technology*

**The Economic Sanctions' Impact on the Assignment of State Funding for the Municipal Metro Company in Tehran, Iran,** Safieh Laaly, Amirreza Nickkar, Morgan State University, Danon Jalali, *University of Technology Sydney*,

**Understanding Access to Grocery Stores in Food Deserts in Baltimore City,** Samira Ahangari, Istiak A. Bhuyan, Celeste Chavis, Anita Jones, Gbenga Olowokande, *Morgan State University*

**Using Big Data to Improve Pedestrian and Bicycle Access to Transit,** Naveen Juvva, Ryan Link, *StreetLight Data*, Ahmad Subhani, *York Region*

**Using Field Data to Establish the Price of Added Longevity of Infrastructure: A Case Study and Observations across Road Functional Classes and Pavement Surface Material Types,** Hanna E. Kemaw, Samuel Labi, Yu Qiao, *Purdue University*

**Utilization of Unmanned System Technology in Transportation Engineering: A Case Study,** Michael Williamson, *Indiana State University*

## Rail & Public Transit

**A Method for Assessing Transit Access of Specific Populations to Basic Services Utilizing the Transit Opportunity Index,** Nicholas Lowmes, Rob Smith, *University of Connecticut*

**Correlation of Crime Rate with Transit Connectivity and Transit Demand at Census Block Group Level,** Istiak A. Bhuyan, Snehanshu Banerjee, *Morgan State University*

**Direct Fixation (DF) Track: Track Modulus, Fastener Stiffness and Spacing,** Nazmul Hasan, *SNC-Lavalin Inc.*

**Exploring Heterogeneity in Perception of Service Quality Among Groups of Passenger Ferry Users',** Tanmay Das, *Pabna University of Science and Technology*, Md. Hadiuzzaman, Sk. Md. Mashrur, Uttara Sutradhar, *Bangladesh University of Engineering and Technology*, G.M. Faruque, *MIST*

**Impact of Transit Priority Strategies on Travel Time Delay in Signal Controlled Road Network Having Mixed Traffic,** Md. Hadiuzzaman, Sk. Md. Mashrur, Bijoy Saha, *Bangladesh University of Engineering and Technology*

**Impacts of Accessibility to Public Transportation on Residential Property Values in Connecticut,** Nicholas Lowmes, Bo Zhang, *University of Connecticut*

**In-Track Measurements of Crosstie/Ballast Interfacial Pressure Magnitudes and Distributions with Varying Train Operational Conditions,** David B. Clarke, *Center for Transportation Research, University of Tennessee*, Travis J. Watts, *HDR, Inc.*, Jerry G. Rose, Ethan Russell, *University of Kentucky*

**Qualification of Track Parameters based on a Review of the Previous Studies**, Nazmul Hasan, *SNC-Lavalin Inc.*

**Study The Effect Of Ballast Thickness Beneath Rail Way On Behavior of Subballast**, Zaman Teama, *University of Baghdad*

**The Role of Psychology and Habit in the Choice Making Process of Car Users: the Case of Lebanon**, Dima Jawad, Lourdes J. Salameh, *Notre Dame University - Louize*

## Traffic Operations

**Analysis of Aggregate Gradations using Image Analysis Technique through Bailey Method**, Arunkumar Goli, Shubham kumar Sah, Brajbhushan Pandey, Amaranatha Reddy Muppireddy, *Indian Institute of Technology Kharagpur*

**ASCE/ANSI 68-18 Permeable Interlocking Concrete Pavement Maintenance Guidelines**, David R. Smith, *Interlocking Concrete Pavement Institute*

**Best Practices for Construction and Inspection of Permeable Interlocking Concrete Pavements**, David R. Smith, *Interlocking Concrete Pavement Institute*

**Development of a Nationwide Horizontal Curve Inventory Using Open GIS Data**, Chengbo Ai, *University of Massachusetts Amherst*, Sheldon Qiu, *Beihang University*

**Development of an Arterial Signal Optimization Model with Decomposed Progression Segments**, Gang-Len Chang, Yao Cheng, Hyeonmi Kim, *University of Maryland, College Park*

**The Discrepancy Between Actual Operating Speed and Drivers' Self-Reported Speed**, Sajid Raza, KU Leuven, Osama Abaza, UAA, Fazal R. Safi, *Engineering Consultancy Services Punjab (Pvt.) Ltd, Arshad Hussain, National University of Sciences & Technology, Islamabad*

**Effect of Aggregate Surface Texture and Angularity on Fatigue Performance of Bituminous Mixture**, Priyadarshini Saha Chowdhury, IIT Kharagpur, Amaranatha Reddy Muppireddy, Brajbhushan Pandey, *Indian Institute of Technology Kharagpur*

**Effect of Loading and Rest Periods on Resilient Modulus and Time Lag of Bituminous Mixes**, Harika Rachuri, *CVR College of Engineering, Hyderabad*, Amaranatha Reddy Muppireddy, Brajbhushan Pandey, *Indian Institute of Technology Kharagpur*

**Efficient Left Turn Movements at Signalized Intersections by Applying Floating Car Data (FCD) Technology**, Nasima Farzana Bhuiyan, *Stamford University, Dhaka, Bangladesh*

**Evaluation of Effectiveness of Bio-Based Graphene for Asphalt Modification**, Omar Tahri, Shenghua Wu, *University of South Alabama*

**Field Evaluation of High Modulus Asphalt Mixes in India**, Anil kumar Baditha, Arunkumar Goli, Sudhakar Reddy Kusam, Amaranatha Reddy Muppireddy, Brajbhushan Pandey, *Indian Institute of Technology Kharagpur*

**Influence of Interface Friction on Stresses and Deflections of Thin White-Topping Pavements**, Venkata Jogarao Bulusu, Sudhakar Reddy Kusam, Amaranatha Reddy Muppireddy, *Indian Institute of Technology Kharagpur*

**Influence of Mobile Work Zone Barriers on Driver Behavior on Freeways: A Driving Simulator Study**, Snehanshu Banerjee, Mansoureh Jeihani, *Morgan State University*

**Left Turn Critical Gap and Follow-up Headway at Signalized Intersections**, Andi Bill, Madhav Chitturi, Boris Claros, David Noyce, *University of Wisconsin – Madison*

**Probabilistic Modeling of Pavement Performance Using Markov Chains: A State-of-the-Art Review**, Dulcy M. Abraham, Samuel Labi, Mohamed S. Yamany, *Purdue University*

## Transportation Safety

**Association Between Pavement Roughness and Crash Frequency on Freeways**, Mohamed Abdel-Aty and Jaeyoung Lee, *University of Central Florida*

**Bivariate Ordered Modeling of Crash Injury Severity Level of Drivers and School-Age Passengers**, Mohamed Abdel-Aty and Jaeyoung Lee, *University of Central Florida*

**Calibrating the Highway Safety Manual Crash Prediction Models for Urban and Suburban Intersections in Kansas**, Sunanda Dissanayake, Rijesh Karmacharya, Imalka Matarage, *Kansas State University*

**A Comparison Between Calibration Factors and Calibration Functions for Predicting Crashes on Freeway Speed-Change Lanes in Kansas**, Imalka Matarage, *Kansas State University*, Imalka Matarage, *Kansas State University*, Sunanda Dissanayake, *Kansas State University*

**Comprehensive Analysis of Bridge-Related Crashes in New Jersey**, Mohammad Jalayer, Ph.D., *Rowan University*, Mohammad Jalayer, Ph.D., *Rowan University*, Hooman Parvardeh, *CAIT, Mahdi Pour-Rouholamin, Grice Consulting Group, LLC*

**Crash Reporting Procedures: A Pacific Northwest Case Study**, Kevin Chang, Ph.D., P.E., *University of Idaho*, Kevin Chang, Ph.D., P.E., *University of Idaho*

**From Traffic Analysis to Real-Time Control: A Hazard-Based Model to Estimate Post-Collision Recovery Periods**, Dong Pan, M.S., *The George Washington University*, Dong Pan, M.S., *The George Washington University*, Wei Zhang, Ph.D., P.E., *Federal Highway Administration*, Samer H. Hamdar, Ph.D., *The George Washington University*

**Identifying High Crash Risk Highway Segments Using Jerk-Cluster Analysis**, Seyedeh Maryam Mousavi, *Texas A&M Transportation Institute*, Zhao Zhang, *Beihang University*, Scott A. Parr, *Embry Riddle Aeronautical University*, Anurag Pande, *Cal Poly State University*, Brian Wolshon, *Louisiana State University*

**Investigation of Traffic Accidents at Signalized Intersections**, Braxton Braxton, Ali Mubbashir, Wubeshet Woldemariam, *Purdue University Northwest*

**A Mixed Crash Frequency Estimation Model for Interrupted Flow Segments**, Seyedeh Maryam Mousavi, *Texas A&M Transportation Institute*, Seyedeh Maryam Mousavi, *Texas A&M Transportation Institute*, Hassan Marzoughi, *Louisiana State University*, Scott A. Parr, *Embry Riddle Aeronautical University*, Brian Wolshon, *Louisiana State University*, Anurag Pande, *Cal Poly State University*

**Road Traffic Fatalities Forecasts Based on Cointegration Analysis**, Francesco Rouhana, *Notre Dame University*, Dima Jawad, Lourdes J. Salameh, *Notre Dame University – Louaize*

**Using Random Forests to Explore the Non-Linear Correlation Between Highway Vertical Curve Features and Crash Frequency**, Bing Han, Jiangang Xu, *Nanjing University*, Ziyuan Pu, Yin Hai Wang, *University of Washington*

## ICTD MOBILE APP



### A QUICK, EASY WAY TO TAP INTO THE ICTD 2019 EXPERIENCE

Search for the “ASCE Conferences and Events” app, install and open app, then select “ICTD 2019” as your event.

**REGISTER TODAY!**



# INTERNATIONAL AIRFIELD & HIGHWAY PAVEMENTS CONFERENCE

Chicago, Illinois | July 21-24, 2019

*ASCE's longstanding specialty conference for airfield and highway pavement professionals.*

## *Efficient and Sustainable Pavements*



### Technical Tracks

Themes and topics include:

- **Design and Management of Pavements**
- **Pavement Materials Characterization**
- **Airfield Pavements**
- **Innovations and Sustainability**

### Workshops

- **Performance Engineered Mixtures (PEM) Workshop**
- **Airport Pavement Evaluation Software Workshop – PAVEAIR, BAKFAA and ProFAA**
- **Stone Matrix Asphalt (SMA) Workshop**

### Tours

- **O'Hare Airport – Airside**
- **Highway Tour**

### Other Events

Other conference events include a poster session, Monismith Lecture, younger member events, a reception, awards ceremony, and an opportunity to take a Chicago historical architectural boat tour.

### Conference Co-Chairs

**Imad L. Al-Qadi, Ph.D., P.E., Dist. M. ASCE**, University of Illinois at Urbana-Champaign

**Andreas Loizos, A.M.ASCE**, National Technical University of Athens

**Scott D. Murrell, P.E., M.ASCE**, Applied Research Associates

**Hasan Ozer, Ph.D., A.M.ASCE**, University of Illinois at Urbana-Champaign

### Steering Committee

**John Rushing, P.E., M.ASCE**, U.S. Army Corps of Engineers

**Jeff Gagnon, P.E., M.ASCE**, Federal Aviation Administration

**Thomas Harman**, Federal Highway Administration

**Geoffrey Rowe, Ph.D., P.E., C.Eng., M.ASCE**, Abatech

**Rick Boudreau, P.E., M.ASCE**, Boudreau Eng Inc.

**Audrey Copeland, A.M.ASCE** National Asphalt Pavement Association (NAPA)

**Leif Wathne, P.E.**, American Concrete Pavement Association

**Luis G. Loria-Salazar, M.ASCE**, University of Costa Rica, PITRA-LanammeUCR

Holiday Inn Chicago Mart Plaza River North

#Pavements19 | [www.pavementsconference.org](http://www.pavementsconference.org)



# Technical Tours

## FHWA's Turner-Fairbank Highway Research Center Tour

Wednesday, June 12 | 1:00 – 5:00 p.m.

The tour will meet in the Hilton upstairs lobby at 1:00 p.m. to board buses. Buses will depart promptly at 1:30 p.m.

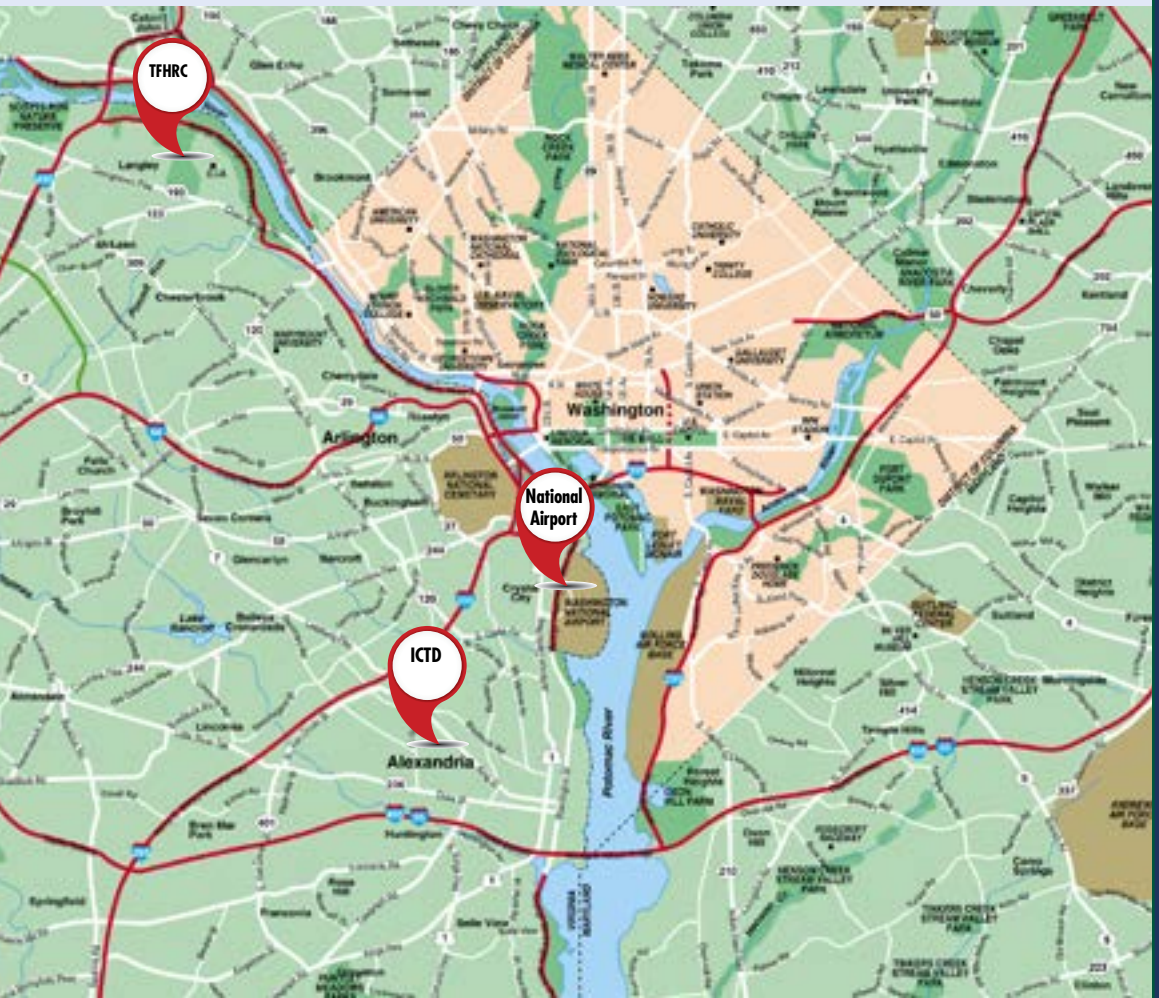
**Additional Ticket Purchase Required: \$40**

## Ronald Reagan Washington National Airport Tour

Wednesday, June 12 | 1:00 – 5:00 p.m.

The tour will meet in the Hilton upstairs lobby at 1:00 p.m. to board buses. Buses will depart promptly at 1:30 p.m.

**Additional Ticket Purchase Required: \$40**







## FHWA's Turner-Fairbank Highway Research Center Tour

Wednesday, June 12 | 1:00 – 5:00 p.m.

### 3 PDHs

The Federal Highway Administration's (FHWA's) Office of Research, Development, and Technology (RD&T) is located at the Turner-Fairbank Highway Research Center (TFHRC), a federally owned and operated national research facility in McLean, VA. The center houses more than 16 laboratories, support facilities, and data sets; and conducts applied and exploratory advanced research in vehicle-highway interaction, nanotechnology, and a host of other types of transportation research in safety, pavements, highway structures and bridges, human-centered systems, operations, and intelligent

transportation systems, and materials.

The tour will visit several laboratories at the research center. The laboratories at the center provide a vital resource for advancing the body of knowledge that has been created and developed by our researchers.

*The tour will meet in the Hilton upstairs lobby at 1:00 p.m. to board buses. Buses will depart promptly at 1:30 p.m.*

**Additional Ticket Purchase Required: \$40**

## Ronald Reagan Washington National Airport Tour

Wednesday, June 12 | 1:00 – 5:00 p.m.

### 3 PDHs

The Ronald Reagan Washington National Airport tour will start in the historic Terminal A lobby of the original 1941 terminal building with a presentation on Project Journey, the planned \$1 billion, multi-year capital improvement project that will transform the passenger experience at Reagan National Airport. Project Journey includes construction of two new security checkpoints that will connect the concourse level of Terminal B/C to airline gate areas and build-out of an enclosed concourse with jet bridges to replace the 14 outdoor gates currently serviced by buses from Gate

35X. The project started in the summer of 2017, and multiple areas will be under construction during the summer of 2019. After the presentation, participants will tour the B/C Concourse, with observations of the construction of the new security checkpoint buildings and the concourse extension.

*The tour will meet in the Hilton upstairs lobby at 1:00 p.m. to board buses. Buses will depart promptly at 1:30 p.m.*

**Additional Ticket Purchase Required: \$40**

[www.aiadc.com/event/tour-ronald-reagan-washington-national-airport](http://www.aiadc.com/event/tour-ronald-reagan-washington-national-airport)



# PALISADES

CONSULTING GROUP, INC.

Smart Systems | Global Perspectives

[palisadesgroup.com](http://palisadesgroup.com)

## THANK YOU TO OUR SPONSORS!

### PLATINUM



# SAMSUNG

### GOLD



### SILVER



### CORPORATE



### COOPERATING ORGANIZATIONS



# 2019 EXHIBITORS



## Airworks

[www.airworks.io](http://www.airworks.io)

AirWorks' develops aerial mapping software to help land developers and engineers evaluate more job sites within their critical planning and acquisition schedules. Through proprietary machine learning and aerial mapping technology we convert any aerial dataset into site plans in CAD fully autonomously, speeding up the current process by weeks. AirWorks' platform will allow clients find existing information in one centralized database, as well as offer the opportunity to order a detailed aerial site inspection cost-efficient and with the quickest turn-around times.



## Leitner-Poma

[www.leitner-poma.com](http://www.leitner-poma.com)

Leitner-Poma is a global provider of turnkey Ropeway and Automated People Mover systems which meet the increasing demands of public transportation networks in a cost effective manner.

# SAMSUNG

## Samsung

[www.samsung.com](http://www.samsung.com)

As a global leader in enterprise mobility and information technology, Samsung provides enterprise products and services that help customers realize the promise of digital business.



## Spatial Networks

[www.spatialnetworks.com](http://www.spatialnetworks.com)

Spatial Networks delivers data and technology products that enable organizations to identify opportunities, reduce uncertainty, and obtain valuable insights into their field operations.



## Texas Department of Transportation

[www.txdot.gov](http://www.txdot.gov)

Through collaboration and leadership, we deliver a safe, reliable, and integrated transportation system that enables the movement of people and goods.

## EXHIBIT SCHEDULE *(Subject to change)*

<b>Sunday, June 9</b>	
1:00 – 5:00 p.m.	<b>Exhibitor Move-in</b>
6:30 – 7:30 p.m.	<b>Ice Breaker Reception in Exhibit Hall</b>
<b>Monday, June 10</b>	
7:30 a.m. – 3:30 p.m.	<b>Exhibit Hall Hours</b>
7:30 – 8:30 a.m.	<b>Light Continental Breakfast</b>
10:00 – 10:30 a.m.	<b>Networking Break</b>
3:00 – 3:30 p.m.	<b>Networking Break</b>
<b>Tuesday, June 11</b>	
7:30 a.m. – 3:30 p.m.	<b>Exhibit Hall Hours</b>
7:30 – 8:30 a.m.	<b>Light Continental Breakfast</b>
10:00 – 10:30 a.m.	<b>Networking Break</b>
12:00 – 1:30 p.m.	<b>Buffet Lunch</b>
3:00 – 3:30 p.m.	<b>Networking Break</b>

## Ice Breaker Reception in Exhibit Hall

Sunday, June 9 | 6:30 – 7:30 p.m. | [Plaza Ballroom Foyer](#)

## T&DI Committee Meetings

Monday, June 10 | 5:00 - 6:30 p.m. | [Transportation Safety](#)

Tuesday, June 11 | 5:15 – 6:15 p.m. | [See T&DI Committees Tab for details](#)

## The ICTD 2019 Awards Banquet

Tuesday, June 11 | 6:30 – 8:30 p.m. | [Plaza Ballroom](#)

## Poster Sessions

Monday, June 10 | [7:30 a.m. - 3:30 p.m.](#)

Monday, June 10 | [5:15 – 6:30 p.m.](#)

Poster presenters are asked to stand by their poster during this session only, but the posters will be available other times.

Tuesday, June 1 | [7:30 a.m. - 3:30 p.m.](#)

## Younger Member Events

### “If I Could Tell You One Thing...”: The Best Advice I Ever Received

Sunday, June 9 | 7:30 – 8:30 p.m. | [Arbors](#)

### Three-Minute Pitch

Monday, June 10 | 6:30 – 7:30 p.m. | [Terrace](#)





## SUNDAY | JUNE 9

### **Ice Breaker Reception** 6:30 – 7:30 p.m. | *Plaza Ballroom Foyer*

Come join us for drinks and hors d'oeuvres while you network, mingle with friends and colleagues, and visit with exhibitors. Kick off your conference experience at this fun, relaxed event. This event is Included in the registration package. Additional tickets are available for \$75.

### **Younger Member Session: The Best Advice I Ever Received**

7:30 – 8:30 p.m. | *Arbors*

Professionals from academia, industry, and government share their stories, job insights, and offer the best wisdom that was given to them in their careers. Learn from the lessons of others and ask for advice on your career. This will be a panel discussion with lots of time for Q&A. This event is included in full registration package and Tuesday daily rate. All conference registrants are welcome to attend! See page 47 for more information.

**Moderator:** Cong Chen, Ph.D., E.I., M.ASCE (Younger Member Activities) CUTR, *University of South Florida*

**Panel Members:** David Hein, P.Eng., M.ASCE, *Principal Engineer, Applied Research Associates (Retd.) (Past T&DI President);* Eva Lerner-Lam, F.I.T.E., M.ASCE, *Founder and President Palisades Consulting Group, Inc. (Past T&DI President, ICTD 2019 Co-Chair)*

Mohammad Abdel-Aty, Ph.D., P.E., F.ASCE, *Department of Civil Engineering, University of Central Florida, Recipient of Francis C. Turner Award;*

Ning Li, P.E., PMP, *State Traffic Asset Engineer, Virginia Department of Transportation*

Anthony Gammon, P.E., *Acting Director of Project Implementation, City of Alexandria, VA*

## MONDAY | JUNE 10

### **T&DI Transportation Safety Meeting** 5:00 - 6:30 p.m. | *Birch*

**Poster Session** 5:15 – 6:30 p.m. | *Terrace*

### **Younger Members Event: 3-Minute Pitch**

6:30 – 7:30 p.m. | *Terrace*

Enjoy this fast-paced session as students and young professionals present their 3-Minute Pitch! This challenge is a compelling oration on their recent work/ideas and its significance, all within 3 minutes in layman's language. The goal of this three minute talk session is to promote new technologies, crystallize discoveries, and disseminate innovate ideas to the professional society. Meet peers from all over the world in the ICTD conference, advertise what you are doing, and excite the professional society. The winner will receive an award.

## TUESDAY | JUNE 11

### **T&DI Committee Meetings**

5:15 – 6:15 p.m. | *See details under the T&DI Committees Tab*

### **The ICTD 2019 Awards Banquet and Turner Lecture**

6:30 – 8:30 p.m. | *Plaza Ballroom*

Join us for this special evening to honor prestigious award winners and hear from speakers such as Tom Smith, Executive Director of ASCE, and Nicole Nason, Administrator of the Federal Highway Administration.

The winner of the 2018 Francis C. Turner Award, Mohamed Abdel-Aty, Ph.D., P.E., F.ASCE, will present the Francis C. Turner Lecture. To learn more about Abdel-Aty, please see the Awards tab of the final program.

REGISTRATION OPENS JUNE 12, 2019



# INTERNATIONAL CONFERENCE ON SUSTAINABLE INFRASTRUCTURE

Los Angeles, California | November 7-9, 2019

*Leading Resilient Communities Through the 21st Century*



Given the global implications of burgeoning urbanization and the stewardship of existing and new public infrastructure, ICSI 2019 will focus on what is known and what is not known about the cities of the future.

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

## Top Reasons to Attend

- Learn from and network with industry leaders and sustainable infrastructure practitioners from around the world
- Learn from successful case studies and examples of sustainable infrastructure
- Understand industry trends and policies leading to sustainable development
- Share latest advances in sustainable infrastructure planning, design, and construction
- Learn about new tools, and latest research to support sustainable infrastructure
- Learn how to plan infrastructure for climate change and resiliency
- Learn about innovative approaches to infrastructure project financing
- Contribute to the comprehensive conversation on infrastructure sustainability and resiliency for an uncertain world

## **“If I Could Tell You One Thing...”: The Best Advice I Ever Received**

Sunday, June 9 | 7:30 – 8:30 p.m. | [Arbors](#)

## **Three-Minute Pitch**

Monday, June 10 | 6:30 – 7:30 p.m. | [Terrace](#)

## **Best Poster Award Session**

Monday, June 10 | 5:15 – 6:30 p.m. | [Terrace](#)

## **YM Committee Co-Chairs**

Cong Chen, Ph.D., M.ASCE

Norelis Florentino, P.E., PMP, M.ASCE

**Follow us on Twitter**

**@ASCE\_TDI**

**#ICTD19**

**Come see your post on the  
social media screen near the  
registration desk!**

YOUNGER MEMBER  
EVENTS



## “If I Could Tell You One Thing...”: The Best Advice I Ever Received

Sunday, June 9 | 7:30-8:30 p.m. | *Arbors*

Professionals from academia, industry, and government share their stories and job insights and offer the best wisdom that was given to them in their careers. Learn from the lessons of others and ask for advice on your career. This will be a panel discussion with lots of time for Q&A.

### Moderator:

**Cong Chen, Ph.D., E.I., M.ASCE** (Younger Member Activities)  
*CUTR, University of South Florida*

### Panel:

**David Hein, P.Eng., M.ASCE**, *Principal Engineer with Applied Research Associates (recently retired) (Past T&DI President)*

**Eva Lerner-Lam, F.ITE, M.ASCE**, *Founder and President Palisades Consulting Group, Inc. (Past T&DI President, ICTD 2019 Co-Chair)*

**Mohammad Abdel-Aty, Ph.D., P.E., F.ASCE**, *Department of Civil Engineering, University of Central Florida, Recipient of Francis C. Turner Award*

**Ning Li, P.E., PMP**, *State Traffic Asset Engineer, Virginia Department of Transportation*

**Anthony Gammon, P.E.**, *Acting Director of Project Implementation, City of Alexandria, VA*

## Three-Minute Pitch

Monday, June 10 | 6:30-7:30 p.m. | *Terrace*

The 3-minute Pitch challenges students and young professionals to present a compelling oration on their recent work/ideas and its significance, all within 3 minutes in layman's language. The goal of this 3-minute Pitch session is to promote new technologies, crystallize discoveries, and disseminate innovate ideas to the professional society.

### Judging Criteria

#### Significance

- Does the presented work/ideas show promise in improving quality of life and social welfare?
- Does the presented work/ideas show sufficient novelty and intellectual merit?

#### Comprehension:

- Did the presentation provide an understanding of the background to the question being addressed and its significance?
- Did the presentation clearly describe the (anticipated) key results of the work/ideas including conclusions and outcomes?
- Did the presentation follow a clear and logical sequence?

#### Engagement:

- Did the presenter convey enthusiasm for their work/ideas?
- Did the presenter capture and maintain their audience's attention?

#### Communication Style:

- Was the topic, key results and research/project significance and outcomes communicated in language appropriate to a non-specialist audience?
- Did the speaker avoid jargon, explain terminology and provide adequate background information to illustrate points?
- Did the speaker have sufficient stage presence, eye contact and vocal range; maintain a steady pace, and have a confident stance?
- Did the PowerPoint slide enhance the presentation – was it clear, legible, and concise?

# Younger Member Events *(continued)*

## Best Poster Award

During the ICTD 2019 Conference, the Committee of Young Professionals and Student Activities will select the best poster presented during the interactive poster session. In special cases, it is possible to have more than one winning poster. The winner(s) of the Best Poster Award will be announced at the awards dinner on Tuesday, June 11.

### Judging Criteria

#### Significance

- Does the presented work/ideas show promise in improving quality of life and social welfare?
- Does the presented work/ideas show sufficient novelty and intellectual merit?
- Poster Visual Quality
- Did the poster provide an understanding of the background to the question being addressed and its significance?
- Did the poster clearly describe the key results of the work/ideas including conclusions and outcomes?
- Did the poster follow a clear and logical sequence?

#### Engagement

- Did the poster make the audience want to know more?
- Did the poster presenter convey enthusiasm for their work/ideas?
- Did the poster presenter actively engage audience?

#### Communication Style

- Did the presenter clearly address questions from audience and/or judges?

## Throughout #ICTD19 – Social Media Contest

Participate in a photo scavenger hunt during ICTD! The full list of items is available via the conference app and on flyers at the conference venue. Use #ICTD19 and HAVE FUN! The winner will get a gift card!



## Awards Banquet and Turner Lecture

Tuesday, June 11 | 6:30 – 8:30 p.m. | Plaza Ballroom

The American Society of Civil Engineers (ASCE) and the Transportation & Development Institute (T&DI) are proud to present the following prestigious awards during the Tuesday evening Awards Banquet. The following awards will be presented:

- Francis C. Turner Award & Lecture
- Robert Horonjeff Award
- Wilbur S. Smith Award
- *Journal of Transportation Engineering* Best Paper Award
- Outstanding Younger Member Award

### Additional ICTD-Specific Awards

- Best ICTD 2019 Paper
- Younger Member Best Poster Award

**PLEASE VISIT THE T&DI WEBSITE  
AT [WWW.ASCE.ORG/TDI](http://WWW.ASCE.ORG/TDI)  
TO LEARN MORE ABOUT THESE  
AND OTHER ASCE AND T&DI  
AWARDS.**

# Nominate a colleague, student, or yourself for one of the many prestigious ASCE transportation-related awards!

<b>Award</b>	<b>Submission Deadline*</b>
Airfield Pavement Practitioner Award	October 15
Frank M. Masters Transportation Engineering Award	November 1
Harland Bartholomew Award	November 1
James Laurie Prize	November 1
Robert Horonjeff Award	November 1
Wilbur S. Smith Award	November 1
Francis C. Turner Award and Lecture	November 1
T&DI Outstanding Younger Member Award	March 1
Jack E. Leisch Fellowship	May 1
Long-Term Pavement Performance (LTPP) Data Analysis Contest	July 1

Be sure to check out [www.asce.org/tdi](http://www.asce.org/tdi) to see all award descriptions.\*

Be sure to congratulate all the winners at ICTD 2019 being honored during the Tuesday, June 11 evening awards banquet.

*\*some contests and awards have deadlines that change based on academic or calendar year.*



## Awards Banquet and Turner Lecture

Monday, June 11 | 6:30 – 8:30 p.m. | *Plaza Ballroom*

The American Society of Civil Engineers (ASCE) and the Transportation & Development Institute (T&D) are proud to present the following prestigious awards during the Tuesday evening Awards Banquet.



### **Thomas W. Smith III, ENV SP, CAE, F.ASCE**

A dedicated member of the American Society of Civil Engineers for more than 25 years and a civil engineer by training, Tom Smith served as the association's deputy executive director and general counsel before becoming the executive director in January 2015. Tom is responsible for the day-to-day management of the Society. He leads a staff of 250 and an active volunteer workforce of over 7,500, facilitating ASCE's tradition of providing high-quality products and services to more than 150,000 members in all civil engineering disciplines and at all points of their career paths.

### **Keynote Speaker**

**Nicole R. Nason**, Administrator, Federal Highway Administration



Nicole R. Nason was sworn in as Administrator of the Federal Highway Administration on May 2, 2019. In this role, she leads a Modal Administration within the U.S. Department of Transportation that is responsible for the Nation's \$49 billion Federal-aid Highway program.

Previously, Nason was Assistant Secretary of the U.S. State Department's Bureau of Administration, from December 2017 to March 2019. She also previously served as the Acting Assistant Secretary for Overseas Building Operations and as Senior Advisor to the Secretary of State.

Nason has served in numerous roles in Washington, D.C., notably as Administrator of the National Highway Traffic Safety Administration (NHTSA) at the U.S. Department of Transportation (2006–2008), where she was a two-time gold medal winner, the department's highest honor. She also served as DOT's Assistant Secretary for Government Affairs (2003–2006). At NHTSA, her many achievements included overseeing new seat belt rules for school buses, rulemaking for electronic stability control systems, and new car seat safety regulations. Under her watch, NHTSA developed the first-ever criteria for crash test ratings for the Five-Star Safety Ratings program and held the first-ever bilateral with the government of the Republic of China on regulations for motor vehicle safety. During her previous tenure at USDOT, Nason made numerous appearances on national television news programs, testified frequently before Congress, and advocated at the United Nations in Geneva for harmonizing motor vehicle testing.

Previously, Nason served as the Assistant Commissioner for Government Affairs at U.S. Customs and Border Protection (2002–2003). She also served in the legislative branch as counsel for the U.S. House Committee on the Judiciary and as press secretary for Rep. Porter Goss (R-Fla.), who was serving as Chair of the House Permanent Select Committee on Intelligence. She worked as an attorney for the House Judiciary Subcommittee on Crime (1995–1999).

A black belt in karate, Nason founded Project Koe (KOH-ee) in Connecticut in 2014, empowering women and improving health and fitness using traditional Japanese martial arts techniques.

She has also served two terms on the national board of Mothers Against Drunk Driving and on the board of directors of Shakespeare on the Sound. Her media experience includes a TEDTalk at American University on finding inner power.

Nason earned a B.A. in political science and government at American University and a J.D. at Case Western Reserve University.

## Francis C. Turner Award



### **Mohamed Abdel-Aty, Ph.D., P.E., F.ASCE**

#### **Application of Big Data Analytics and Visualization in Pro-Active Traffic Safety Management**

Mohamed Abdel-Aty, Ph.D., is a Trustee Endowed Chair, Pegasus Professor, and Chair of the Department of Civil, Environmental & Construction Engineering at the University of Central Florida. His outstanding leadership in the field of road safety is recognized nationally and internationally. In addition, he has had an exceptional impact on the transportation field with an extensive publication record, his service on committees, and a commitment to outstanding teaching and mentoring.

Abdel-Aty has established himself as a world leader in transportation research and particularly in transportation safety research. He has published more than 550 papers, of them about 300 in journals. Abdel-Aty's impact is evident in projects that resulted in improvements to roadways and likely saved lives and millions of dollars. He is pioneer in transforming the traffic safety field into more proactive approaches to reduce crash risk. He was the first to study the safety of toll roads and plazas and provide guidance for safety improvements. Also of considerable impact are his projects on the innovative safety improvements and systems that are implemented at road segments that experience reduced visibility due to weather conditions, his contributions to the Highway Safety Manual, NCHRP projects, and the development of a similar manual for Part D for the Florida Department of Transportation. Abdel-Aty has managed more than 60 research projects totaling around \$17 million.

His teaching record is impressive and has received considerable recognition. He is among the world's most elite university teachers, having won his university's Excellence in Graduate Teaching Award, and the University Faculty Excellence in Mentoring Doctoral Students. Abdel-Aty has supervised to completion more than 70 Ph.D. and MS students.

#### **About the Award**

The Francis C. Turner Award was established by the Transportation and Development Institute of the Society by the solicitation of gifts from the many friends and admirers of Francis C. Turner, Hon.M.ASCE, former Chief Engineer of the Bureau of Public Roads, and retired Federal Highway Administrator. The award is based on the nominee's contributions to the advancement of the knowledge and practice of transportation engineering.

## Robert Horonjeff Award



### **Richard de Neufville, Ph.D., M.ASCE**

Richard de Neufville, Ph.D., is a professor of Engineering Systems at MIT Institute for Data, Systems, and Society. de Neufville is recognized in part for his outstanding and innovative contributions and achievements in education, research, technology transfer, and workforce development in the field of air transportation engineering. He is internationally recognized for his work that applies advanced systems engineering concepts and techniques to the planning of airports and airport systems. He is known for his advocacy of techniques that introduce greater flexibility in the design of complex engineering systems.

de Neufville is particularly known for innovations in engineering education. He was the founding chairman of the MIT Technology and Policy Program, and author of six major texts on systems analysis in engineering. His work has been recognized by Guggenheim and Fulbright Fellowships, the NATO Systems Science Prize; the Sizer Award for the Most Significant Contribution to MIT Education, the Martore and MIT Effective Teaching Awards, and the U.S. Federal Aviation Award for Excellence in Teaching. Through professional short courses, academic research, publications, and consulting work with major airports, de Neufville has passed on his insights to students and practicing engineers throughout the world.

#### **About the Award**

The Robert Horonjeff Award was established to recognize outstanding achievements in, and contributions to, the advancement of the field of air transportation engineering.

## Wilbur S. Smith Award



### **Kenneth R. Maser, Ph.D., P.E., M.ASCE**

Kenneth R. Maser, Ph.D., is a Senior Principal at Infrasense, Inc. He is a distinguished civil engineer whose leadership and innovation have been instrumental, both domestically and internationally, in developing and proving highway agencies with driving-speed non-destructive methods for subsurface condition evaluation of pavements and bridge decks.

Maser is nationally and internationally recognized authority in research, development, and deployment of nondestructive evaluation and subsurface condition investigations, particularly in the area of ground penetrating radar (GPR) technology. To manage and process subsurface GPR data collected on hundreds of miles of pavement per day, Maser has led a continuing effort to implement advances in software for streamlining the data processing. Examples of agencies that have adopted this technology include CalTrans, Texas DOT, Oklahoma DOT, Virginia DOT, and the Idaho Transportation Department.

In addition to pavement applications, Maser has also been a leader in the development and implementation of methods for highway speed evaluation of bridge decks. Through his efforts, highway agencies, with hundreds of candidate structures to consider, have been provided with effective tools for deciding which decks need attention, facilitating scoping of required rehab work and repair/replace decisions. Maser has authored over 150 publications in his field and has served as an Associate Editor for the ASCE Journal of Infrastructure Systems.

### **About the Award**

The Wilbur S. Smith Award was established by the Highway Division (now T&DI) of ASCE in recognition of the outstanding professional accomplishments of Wilbur S. Smith, Hon.M.ASCE.

## T&DI Outstanding Younger Member Award



### **Michelle Renee Oswald Beiler, Ph.D., P.E., LEED AP, PTP, ENV SP, M.ASCE**

Michelle Renee Oswald Beiler is an associate professor in the Department of Civil and Environmental Engineering at Bucknell University. Her research and teaching focus is in the area of sustainable transportation planning. Specific research topics include transportation adaptation to climate change, sustainable transportation performance measures and rating system development, pedestrian and cycling travel demand modeling, and sustainable engineering education.

She is a member of the ASCE T&DI Committee on Sustainable Transportation and served on the Engineering Sustainable Communities Working Group under the ASCE Committee on Sustainability-Sustainable Infrastructure Education Committee. She was awarded the ASCE ExCEED (Excellence in Civil Engineering Education) Teaching Award in 2015 and also identified as an "Emerging Leader" in the field of sustainable land use practices by the Mid-Atlantic Transportation Sustainability University Transportation Center (MATS-UTC). She completed her doctoral degree in Civil Engineering, a master's degree in Urban Affairs and Public Policy, and a master's degree in Civil Engineering from the University of Delaware, specializing in transportation planning. She received her Bachelor of Science degree in Civil Engineering from Lafayette College.

### **About the Award**

The T&DI Outstanding Younger Member Award was established to recognize the professional contributions of younger members of the Institute. Characteristics taken into consideration for determining the winner of this award include: Technical registration (PE designation, for example), ASCE activities, non-ASCE professional/technical society activities, civic and humanitarian activities, engineering achievements, and activities outside of engineering.

## JTE Best Papers

### Two-Stage Bicycle Traffic Assignment Model

**Authors:** **Seungkyu Ryu**, Ajou Univ., Korea; **Anthony Chen**, Hong Kong Polytechnic Univ., Hong Kong (corresponding author); **Jacqueline Su**, Univ. of California Los Angeles, CA; **Keechoo Choi**, Ajou Univ., Korea

### Travel Time Evaluation of Synchronized and Milwaukee B as New Interchange Designs

**Amirarsalan Mehrara Molan, Ph.D.**, Dept. of Civil and Environmental Engineering, Wayne State University (corresponding author)

Amir M. Molan, Ph.D., is a postdoctoral research associate at the University of Wyoming. He obtained his BS and MS degrees from Azad University in Tehran, Iran, and his doctoral degree from Wayne State University. To date, Molan has been first author and co-author of over 20 peer-reviewed scientific articles in civil engineering journals and conferences. His main research interest is on proposing new designs for improving the performance and extending the serviceability of existing interchanges and intersections. Molan has recently invented a new design called a super DDI (super diverging diamond interchange) as an alternative for failing diamond interchanges.

**Joseph E. Hummer, Ph.D., P.E.**, State Traffic Management Engineer, Mobility and Safety Division, North Carolina Dept. of Transportation

## Best ICTD 2019 Paper

Evaluating Fuel Tax Revenue Impacts of Electric Vehicle Adoption in Virginia Counties: Application of A Bivariate Linear Mixed Count Model

**Wenjian Jia**, Department of Engineering Systems & Environment, University of Virginia

**Zhiqiu Jiang**, Department of Urban & Environmental Planning, University of Virginia

**T. Donna Chen**, Department of Engineering Systems & Environment, University of Virginia

**Rajesh Paleti**, Department of Civil & Environmental Engineering, Pennsylvania State University

## Professional Development Hours (PDHs)

You may earn PDHs, which are nationally recognized units of record, by attending ICTD sessions and workshop. Please note there are differences from state to state in continuing education requirements for professional engineering licensure. ASCE follows NCEES guidelines on continuing professional competency.

PDH tracking forms will be available at the ICTD Registration Desk.

Within 30 days of the end of the conference, the session information will be uploaded into the MyLearning system. You will receive an email from the conference registration system with a link and detailed instructions on how to access MyLearning and update your session attendance. By accessing the MyLearning system for this conference, you automatically agree and certify you attended the selected sessions.

The system will remain open for 365 days from the receipt of the registration email to allow you time to make any adjustments and print your certificate and transcript. After that 365-day mark, you will need to contact ASCE Customer Service at [registrations@asce.org](mailto:registrations@asce.org) or (800) 548-2723 to modify your conference attendance information.

## Transportation & Development Institute

AN INSTITUTE OF THE AMERICAN SOCIETY OF CIVIL ENGINEERS (ASCE)



### VISION

Civil Engineers are global leaders in providing sustainable transportation and development.

### MISSION

To advance knowledge and practice in sustainable transportation and development.

---

The Transportation & Development Institute (T&DI) is a specialty membership organization focused on transportation and development professionals and the transportation and development industry. It is one of the American Society of Civil Engineer's nine specialty Institutes.

T&DI combines the talents and perspectives of its members to promote professional excellence in all aspects of transportation engineering, urban planning, and development.

### Join us!

[www.asce.org/tdi](http://www.asce.org/tdi)

### Follow us!

Twitter @ASCE\_TDI

**JOIN THE ICTD CONVERSATION!**

**#ICTD19**



# Join the Transportation & Development Institute of ASCE



ROADWAYS



AVIATION



CAV IMPACTS



RAIL & PUBLIC TRANSIT



MODE SPANNING



DEVELOPMENT

## ASCE'S home for transportation and development activities

*Our mission is to advance knowledge and practice in sustainable transportation and development.*

*As a T&DI member, you have the opportunity to participate in 19 technical committees, receive monthly newsletters that cover transportation and development news, and get discounts on numerous conferences and events.*

**Earn your PDHs with us!** Continuing education opportunities available via webinars, online courses, and conferences.

**Register Today! International Airfield & Highway Pavements Conference**, a specialty conference unique to T&DI, will be in Chicago, IL, July 21-24, 2019.

### **Publish in ASCE/T&DI Journals**

- Journal of Transportation Engineering  
*(Part A: Systems | Part B: Pavements)*
- Journal of Infrastructure Systems
- Journal of Urban Planning & Development

Come see what we are all about!

Visit [www.asce.org/tdi](http://www.asce.org/tdi) and connect with us on  
Twitter [@ASCE\\_TDI](https://twitter.com/ASCE_TDI)

## ORGANIZATION



### MEMBERS

T&DI Represents the transportation and development professionals of ASCE's 150,00 members. Engineers · Planners · Owners · Academics · Government Officials · Consultants · Students



### BOARD OF GOVERNORS

8-member Board representing members from practice and academia



### COUNCILS

Roadway · Rail & Public Transit · Aviation · Planning & Development · Administrative · Emerging Technologies · Local and Student Chapters · Standards



### TECHNICAL COMMITTEES

Highway Pavement · Street & Highway Operations · Highway Construction · Transportation Safety · Public Transport · Automated People Movers · Airfield Pavement · Aviation Planning & Operations · CAV Impacts · Economics & Finance · Sustainable Transportation · Infrastructure Systems · Freight & Logistics · APM Standard · Interlocking Concrete Pavers Standard · Permeable Concrete Interlocking Pavers Standard



### CHAPTERS

Boston · Cleveland · Colorado · Dallas · Florida East · Florida Miami-Dade · Florida West · Georgia · Houston · Illinois · Louisiana · Metropolitan Los Angeles · St. Louis · Wisconsin · Graduate Student Chapters: University of Illinois at Urbana Champaign · University of Utah



### GLOBAL PARTNERSHIPS

Partnerships for co-sponsored conference in Asia, Africa, Europe, and other regions.

## PRODUCTS



### CONFERENCES

International Conference on Transportation & Development · International Airfield & Highway Pavements Conference · International Conference on Automated People Movers & Automated Transit Systems



### JOURNALS

Journal of Transportation Engineering: Part A: Systems (monthly) · Journal of Transportation Engineering: Part B: Pavements (quarterly) · Journal of Infrastructure Systems (quarterly) · Journal of Urban Planning & Design (quarterly)



### STANDARDS

Automated People Movers · Interlocking Concrete Pavers Permeable · Concrete Interlocking Pavers

**Under Development:** Standard for Installation of Stationary and Portable Electric Vehicle Chargers · eBus Pad and Lane Design Standard · Smart City Trenching Standard · Standard for Installation of 5G Small Cell Transmitters and Environmental Sensors · Standard for Design of Segmental Concrete Paving Slabs



### WEBINARS

Continuing education & professional development offerings, including over 60 webinars per year



### AWARDS

Airfield Practitioner Award · Robert Horonjeff Award · James Laurie Prize · Harland Bartholomew Award · Frank M. Masters Transportation Engineering Award · Wilbur S. Smith Award · Francis C. Turner Award/Lecture · International Contest on Long Term Pavement Performance (LTPP) Data Analysis · Jack E. Leisch Fellowship · T&DI Outstanding Younger Member Award



### BOOKS

Books on transportation and development topics



### MONTHLY NEWSLETTER

Transportation & Development News (monthly electronic publication)

**Not a member? Join today by visiting [www.asce.org/tdi](http://www.asce.org/tdi)**



Transportation & Development Institute (T&DI) Committees serve as a key opportunity for members to connect and engage in knowledge exchange and act as advocates for innovative transportation and development. As an industry professional, you have talent, experience, and ideas to share. **T&DI committee meetings will be held on Monday, June 10 and Tuesday, June 11.**

Committee meetings are open to all ICTD 2019 conference attendees, and serve as a great opportunity to engage with your professional community.

## Schedule | MONDAY, June 10

*(Subject to change)*

**5:00 – 6:30 p.m.**

Public Transport Committee | [Juniper](#)

Transportation Safety Committee | [Birch](#)

## Schedule | TUESDAY, June 11

*(Subject to change)*

**5:15 – 6:15 p.m.**

Aviation Planning & Operations Committee | [Birch](#)

Connected & Autonomous Vehicles Impacts Committee | [Aspen](#)

Economics & Finance Committee | [Chestnut](#)

Freight & Logistics Committee | [Poplar](#)

Infrastructure Systems Committee | [Walnut](#)

Street & Highway Operations Committee | [Maple](#)

Sustainable Transportation Committee | [Beech](#)

Rail Transport Committee | [Arbors](#)

UAS Impacts Task Committee | [Laurel](#)



Transportation & Development Institute (T&DI) Committees serve as a key opportunity for members to connect and engage in knowledge exchange and act as advocates for innovative transportation and development.

## Airfield Pavement Committee

*Meeting at the T&DI International Airfield and Highway Pavements Conference*

Purpose: The ASCE Airfield Pavement Committee (APC) is dedicated to the dissemination and sharing of engineering knowledge and best practices related to airfield pavement technology.

**Chair: Bernadette San Agustin Caparas, P.E., M.ASCE**, Metropolitan Washington Airports Authority



Caparas

## Automated People Movers Committee

*Not meeting at ICTD 2019.*

Purpose: To study and evaluate development in automated people movers, including planning, design, construction, operations, and financial feasibility, and to encourage exchange of experience through publications, workshops, and conferences.

**Chair: Craig W. Elliott, A.M.ASCE**, *Lea+Elliott*



Elliott

## Aviation Planning & Operations Committee

**Tuesday, June 11 | 5:15 – 6:15 p.m. | Birch**

Purpose: To address issues dealing with (1) the planning and design of airport runways, taxiways, aprons, terminals, ground transportation facilities, and support facilities (excepting airfield pavement design) and (2) the safe, secure and efficient operation of these facilities. The Committee's purpose is to advance the art and science of civil engineering by: (1) promoting the civil engineer's leading role in the planning and design of airports and associated ground transportation facilities, (2) fostering education and research in airport design and operations to improve the civil engineer's analytical and design capabilities, (3) promoting state of the art methods of analysis - including fast-time and real-time simulation - to address planning, security, environmental, and operational issues facing airport operators, national and state aviation agencies, airport users, and the traveling public, (4) promoting advances in the field of airport planning and design by civil engineering, (5) working with other technical divisions of the Society demonstrated in the relationship between their concerns and airport planning and development.

**Chair: Amiy Varma, Ph.D., P.E., M.ASCE**, North Dakota State University



Varma



Ma

## Connected & Autonomous Vehicles Impacts Committee

**Tuesday, June 11 | 5:15 – 6:15 p.m. | Aspen**

Purpose: To a) Track advancements of the CAV technologies and evaluate potential impacts of the advancements on transportation and development policy, research, and practice; b) Inform relevant entities for preparation in adapting to the potential changes; and c) Foster collaborations between CAV technology providers and transportation agencies and companies.

**Co-Chair: Jianming Ma, P.E., M.ASCE**, Texas Department of Transportation  
**Co-Chair: Yin Hai Wang, Ph.D., M.ASCE**, University of Washington



Wang



**Labi**

## **Economics & Finance Committee**

Tuesday, June 11 | 5:15 – 6:15 p.m. | *Chestnut*

Purpose: to study and disseminate information on technical and policy aspects of transportation planning, economics, and finance, including topics such as travel demand modeling, data collection and analysis, system management, project evaluation, roadway pricing and cost effectiveness. To advance effective planning, evaluation, and assessment of transportation systems by exchange of information on experience and outcomes through professional conferences/meetings, webinars, publications, and other communication mechanisms.

**Chair: Samuel Labi, Ph.D., M.ASCE, Purdue University**



**Conway**

## **Freight & Logistics Committee**

Tuesday, June 11 | 5:15 – 6:15 p.m. | *Poplar*

Purpose: to address all types of intermodal freight transportation, including rail-water, rail-highway, highway-water, and highway-air modal combinations. All aspects that impact freight movement, such as rates, routes, services, transfer facilities, and containers are considered.

The purpose of the committee is to advance the art and science of civil engineering by: (1) promoting the civil engineer's leading role in intermodal transportation, (2) disseminating information regarding state of the art technology as applicable to intermodal transportation, (3) fostering education and research in intermodal matters, and (4) collaborating with other technical committees of the Society and with multimodal committees of other organizations.

**Chair: Alison Conway, Ph.D., A.M.ASCE, The City College of New York**



**Gallagher**

## **Highway Construction Committee**

*Meeting at the T&DI International Airfield and Highway Pavements Conference*

Purpose: to participate in the development and dissemination of best practices for transportation project construction; to develop and encourage the use of new methods and procedures for the sound and economic construction of transportation projects; to sponsor activities designed to increase the overall knowledge of construction methods, equipment, materials and cost; to investigate and report on specific problems in the field of transportation construction, maintenance and operation; to act as a focal point within the Society for all activities relating to transportation project construction, and to cooperate with other committees both within and outside of the Society to effect the above objectives.

**Chair: James Gallagher, P.E., F.ASCE, Resolution Management Consultants, Inc.**

## Highway Pavement Committee

*Meeting at the T&DI International Airfield and Highway Pavements Conference*

Purpose: To gather, review, develop, evaluate, and present newly developed technologies and other information in the areas of Pavement Design, Construction, Maintenance and Rehabilitation. This information will be shared with the international pavement community, in a timely manner, in the form of technical presentations at conferences, ASCE sponsored publications, and other means of telecommunications. The committee will also partner with other entities from the industry and other Federal, State and local agencies to foster the delivery of the above services to the International Pavement Community.

**Chair: Hasan Ozer, A.M.ASCE**, *University of Illinois at Urbana-Champaign*



**Ozer**

## Infrastructure Systems Committee

**Tuesday, June 11 | 5:15 – 6:15 p.m. | Walnut**

Purpose: To study, evaluate and report on current practices and promote new developments in the science of infrastructure management. The committee's focus is on broad infrastructure related practices such as, Planning & Development, Operations & Maintenance, and improving Infrastructure Management Strategies as they relate to transportation, public works, and parks and recreation infrastructure systems. Scientific and civil engineering disciplines include inventory management, condition assessment, deterioration modeling, evaluation of impacts of deteriorating infrastructure, decision making and financing strategies. The committee activities include the promotion of new and cross-cutting technologies such as, computer-aided decision support, the development of analytical models, automated data collection techniques and other products via specialty conferences, web pages, white papers and other special projects.

**Chair: Diniece Mendes, EIT, A.M.ASCE**, *New York City Department of Transportation*



**Mendes**

## Journal of Transportation Engineering, Part A: System

*Not meeting at ICTD 2019*

The Journal of Transportation Engineering, Part A: Systems contains technical and professional engineering articles on the planning, design, construction, operation, and maintenance of air, highway, rail, and urban transportation systems and infrastructure. Specific topics include management of roads, bridges, and transit systems; traffic management technology and intelligent transportation systems; connected and automated vehicle impacts; highway engineering; railway engineering; and economics, safety, and environmental aspects of transportation.



**Hendrickson**

## Editorial Board

**Editor in Chief: Chris T. Hendrickson, Ph.D., Hon.M.ASCE**, *Carnegie Mellon University*

**Managing Editor: Laurence R. Rilett, Ph.D., P.E.**, *University of Nebraska, Lincoln*

**Editor in Chief Emeritus: Kumares C. Sinha, Ph.D., P.E., Hon. M.ASCE**, *Purdue University*



**Lownes**

## **Public Transport Committee**

Monday, June 10 | 5:00 - 6:30 p.m. | *Juniper*

Purpose: to examine and evaluate the developments in public transport modes, with emphasis on the planning, design, construction and rehabilitation of capital facilities; and further to address such developments from both technical and management considerations; and to sponsor publications and meetings to disseminate state-of-the-art information.

**Chair: Nicholas Earl Lownes, P.E., M.ASCE, University of Connecticut**



**Rizos**

## **Rail Transport Committee**

Tuesday, June 11 | 5:15 - 6:15 p.m. | *Arbors*

Purpose: to advance the science and civil engineering applications of the rail transportation mode, that is currently transporting seventy percent of the total multi-modal freight by tonnage, and that is subjected to new passenger transportation challenges in the USA. The central purpose of the Rail Transportation Committee (RTC) is to reflect the growing interest in rail transport to further enhance the benefits inherent to the rail mode, such as high efficiency of energy use, effectiveness of land utilization, direct access to city centers, and major environmental advantages. Also theoretical and practical aspects of high-speed rail passenger transportation, in the high-speed rail field, major reductions of travel times and unequaled travel safety. Theoretical and practical aspects of high-speed rail passenger transportation are, therefore, an indispensable component of the RTC's activities, that involve also technological and economical issues of multipurpose utilization of existing active and inactive railway lines and right of ways.

**Chair: Dimitris Rizos, Ph.D., C.Eng, M.ASCE, University of South Carolina**



**Al-Ghandour**

## **Street & Highway Operations Committee**

Tuesday, June 11 | 5:15 - 6:15 p.m. | *Maple*

Purpose: To review, develop, promote, advance, and put into practice concepts, standards and technology to achieve the safe, efficient, and reliable movement of people and goods on streets and highways.

**Chair: Majed Al-Ghandour, Ph.D., P.E., M.ASCE, North Carolina Department of Transportation**

## Sustainable Transportation Committee

Tuesday, June 11 | 5:15 – 6:15 p.m. | *Beech*

Purpose: The mission of the ASCE T&DI Committee on Sustainability and Environment (CSE) is to engage transportation and development engineers, environmental scientists, social scientists and other professionals in the development and dissemination of information and knowledge pertaining to improving the sustainability of transportation and urban development. The CSE considers the full life cycle of transportation and urban development, including planning, design, construction, operation and renewal of urban places, transportation facilities and related systems. The CSE focuses on systems issues related to the interactions of transportation systems and urban development with the natural, social and institutional environments, and their impacts on economic development and human quality of life.

**Chair:** **Mouna Krami Senhaji**, *Jacobs*



**Senhaji**

## Transportation Safety Committee

Monday, June 10 | 5:00 – 6:00 p.m. | *Birch*

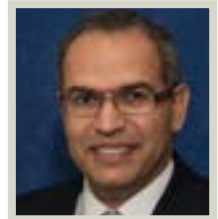
Purpose: To disseminate safety information and to provide education and training pertaining to safety issues related to the planning, design, construction, and operation of transportation facilities. The committee's emphasis will be on increasing safety awareness of all aspects of transportation infrastructure operations and improvement.

**Co-Chair:** **Sunanda Dissanayake, Ph.D., P.E., F.ASCE**, *Kansas State University*

**Co-Chair:** **Mohamed Abdel-Aty, Ph.D., P.E., F.ASCE**, *University of Central Florida*



**Dissanayake**



**Abdel-Aty**

# Transportation and Development Continuing Education Opportunities

## LIVE WEBINARS

**Connected Vehicles, Smarter Cities,  
& Modern Signal Timing: How Traffic  
Engineering Strategies Will Change in  
the Years Ahead**

August 21, 2019

7256W2019

Instructor: Peter Koonce, P.E.

**Complete Streets and Pavement  
Preservation-Linking Planning and Public  
Works for Better Communities and Better  
Infrastructure**

October 18, 2019

8016W2020

Instructor: Scott Douglas Gibson, P.E., M.ASCE

## CERTIFICATE PROGRAM

**ASCE Guided Online Course Certificate  
Programs** are designed for a working  
professional to enhance and add to their skillset  
for the in-demand industries of engineering.

### Geographic Information Systems for Asset Management Certificate Program



ASCE's new Geographic Information Systems for Asset Management Certificate Program is designed for practicing engineers to develop in-demand skills used to manage GIS applications for infrastructure assets. You will be able to apply the fundamental concepts of GIS, including development of GIS applications, implementation of GIS data within existing networks, process improvement using geospatial analysis, and proper maintenance and operation of spatial databases.

## FACE-TO-FACE SEMINARS

**Techniques for Pavement Rehabilitation**  
Denver, CO

July 31–August 2, 2019

71272019

Instructors: Newton C. Jackson, P.E.  
and James M. Signore, Ph.D., P.E.

**Public Private Partnerships for Transportation  
Infrastructure**

Seattle, WA

August 15–16, 2019

71572019

Instructor: Steven D. Dewitt, P.E.

## ASCE WEEK:

A CONTINUING EDUCATION EVENT  
Las Vegas, Nevada



Green Valley Ranch Resort Spa & Casino  
**September 22-27, 2019**

[go.asce.org/VegasTDI](http://go.asce.org/VegasTDI)

- Come to one location to earn up to **44 PDHs**.
- **Save up to \$1,100** off regular seminar prices.
- Network with colleagues and instructors.
- Private tour of the Hoover Dam awarding **4 PDHs**.
- **Breakfast, lunch, and breaks are included** in your seminar price.



ASCE has been accredited as an Authorized  
Provider by the International Association for  
Continuing Education and Training (IACET).



## ADA Compliance

The Hilton Alexandria Mark Center is ADA compliant and meets all regulations. While ASCE will make every effort to meet the needs of the disabled, accommodations cannot be guaranteed without prior notification.

## Attire

The dress code for the ICTD Conference is business casual (i.e. slacks, casual dresses) to business attire (i.e. neckties, business suits). Meeting room temperatures will vary, so wear layered clothing to ensure your personal comfort. We also recommend attendees wear comfortable shoes.

## Badge Policy and Ribbons

Your ICTD registration name badge is your admission to all conference sessions. Please wear your badge at all times while at Hilton Alexandria Mark Center. Tickets are required for the pre- and post-convention events, meals, and special events. Where tickets are required, please be sure to bring your tickets with you to each event as you will not be admitted without a ticket. Ribbons will be available at the Registration Desk.

## Proceedings

Conference Proceedings will be published post-conference and available online to all full registrants.

## Professional Development Hours (PDHs)

You may earn PDHs, which are nationally recognized units of record, by attending ICTD sessions and workshop. Please note there are differences from state to state in continuing education requirements for professional engineering licensure. ASCE follows NCEES guidelines on continuing professional competency.

Because continuing education requirements for P.E. license renewal vary from state to state, ASCE strongly recommends that individuals regularly check with their state requirements that affect P.E. licensure and the ability to renew licensure. For details on your state's requirements, please go to: [www.ncees.org/licensing\\_boards.php](http://www.ncees.org/licensing_boards.php).

## Program Changes

ASCE reserves the right to cancel programs and/or sessions. In the unlikely event of a cancellation, all registrants will be notified and will receive a full refund, if applicable. Programs and sessions are subject to change and ASCE reserves the right to substitute a program, session, and/or speaker of equal caliber to fulfill educational requirements.

## Recording of Sessions

Video or audio recording of any educational session is strictly prohibited without prior written permission from both ASCE and the session presenter(s).

## Release/Waiver

**Photograph and Video Release:** By registering for ICTD 2019, I understand that any photographs or videos that may be incidentally taken of me during these events may be used by ASCE for any purpose.

**Liability Waiver:** In submitting my ICTD 2019 registration, I acknowledge and agree that I am participating in the conference activities as my own voluntary and intentional act. I agree that I alone am responsible for determining whether I am physically capable of participating in any conference activity, and I understand that there is risk associated with my participation, which may include without limitation, injury or loss caused by my own negligence or the negligence of others. With knowledge and acceptance of the risks involved, I accept full responsibility for my own safety and well-being. In consideration of my participation in conference activities, I hereby waive, release, hold harmless, and discharge ASCE and its officers, directors, and employees from any and all loss or injury that may be suffered by me in connection with Conference activities to the fullest extent permitted by law.

## Sustainable Conference Policy Statement

ASCE is committed to sustainable meetings in accord with the ASCE policy on The Role of the Civil Engineer in Sustainable Development. ASCE defines sustainability as a set of economic, environmental, and social conditions in which all of society has the capacity and opportunity to maintain and improve its quality of life indefinitely, without degrading the quantity, quality, or availability of natural resources and ecosystems.

Sustainable development is the process of converting natural resources into products and services that are more profitable, productive, and useful, while maintaining or enhancing the quantity, quality, availability, and productivity of the remaining natural resource base and the ecological systems on which they depend. To that end, ASCE works with hotels and convention centers that strive to make our events green and include amenities such as reusable pitchers and water coolers rather than plastic bottles.

# General Information

GENERAL INFORMATION

## Hilton Alexandria Mark Center Floor Plan



# THANK YOU TO OUR SPONSORS!

## PLATINUM



# SAMSUNG

## GOLD



## SILVER



## CORPORATE



## COOPERATING ORGANIZATIONS



SAVE THE DATE



# INTERNATIONAL CONFERENCE ON TRANSPORTATION & DEVELOPMENT 2020

Seattle, Washington | May 26–29, 2020

*In Partnership with WSDOT's Innovations & Partnerships in  
Transportation Conference*

**Showcasing Collaborative, Smart, and  
Integrated Mobility Solutions**



Hyatt Regency Seattle  
#ICTD20 | [www.asce-ictd.org](http://www.asce-ictd.org)

