

# PROGRAM



## INTERNATIONAL CONFERENCE ON TRANSPORTATION & DEVELOPMENT 2018

Pittsburgh, Pennsylvania | July 15–18, 2018

*ASCE's Flagship Conference in Transportation & Development*

**Emerging Technologies: Impacts on Transportation & Development**



PROFESSIONAL  
★ EARN UP TO ★  
**18**  
DEVELOPMENT HOURS



Final Program sponsored by

**Michael Baker**  
INTERNATIONAL

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

# WELCOME TO PITTSBURGH

## Welcome!

Welcome to the International Conference on Transportation & Development 2018 (ICTD 2018) in Pittsburgh!

We look forward to delving into the theme for this year's conference: *Emerging Technologies: Impacts on Transportation & Development* as ICTD 2018 brings together academics, consultants, community and government representatives, and contractors from around the world to discuss transportation needs and solutions. Connected or Autonomous Vehicles and Infrastructure are the hot topics in transportation today. We are highlighting these topics and their technologies in the conference program. With the rapid growth in technology and analytics, there is a critical need to assess and prepare for the impacts of these technologies on transportation infrastructure and development as a whole – from impacts on mobility, safety, transit, airports, freight, pavements, and other key elements of transportation infrastructure and operations, to the impact on planning, travel behavior, mode choice, finance, economics, land use, and sustainability.

ICTD 2018 is organized to facilitate the exchange of information, knowledge, and best practices among transportation and development practitioners and researchers, public infrastructure owners, policy makers, government engineers and planners, operations managers, and leading academics from around the world. To explore both infrastructure needs and opportunities, the conference co-chairs, along with the steering committee, have made ICTD 2018 the premier conference venue for transportation and development professionals. The conference will present technologies that transportation and development professionals will be implementing in the near future. The proceedings offer technical papers covering a broad range of topics, and we thank the paper submitters and all our paper reviewers.

On Sunday, we hope you will participate in one or two of the open T&D Technical Committee Meetings and the three pre-conference workshop opportunities. Also, please be sure to join us and your fellow attendees at the ice breaker reception in the exhibit hall Sunday evening.

The conference program includes four plenary sessions, eight concurrent technical tracks, and four technical tours that provide attendees the opportunity to earn up to 18 professional development hours (PDHs) towards fulfilling their Professional Engineering licensure requirements while meeting old friends and developing new relationships. We know you will enjoy the various technical tracks, as they cover all transportation and development modes with sessions related to design, rehabilitation, sustainability, construction, operation, and emerging technologies.

We look forward to hosting you at other fun ICTD 2018 events such as the World Cup watching party, Monday evening awards banquet, Tuesday's Board of Governors Town Hall, and the many Younger Member events. The exhibit hall and poster sessions will provide another opportunity for networking and learning.

Again, welcome to ICTD 2018 in Pittsburgh, PA!



**Yinhai Wang, Ph.D.,  
M.ASCE,**  
*University of Washington*



**Michael T. McNERNEY, Ph.D.,  
M.ASCE,**  
*The University of Texas at  
Arlington*

## STEERING COMMITTEE

**Yinhai Wang, Ph.D., M.ASCE,**  
*University of Washington  
(Co-Chair)*

**Michael T. McNERNEY, Ph.D.,  
M.ASCE,** *The University of Texas  
at Arlington (Co-Chair)*

**Brian McKeehan, P.E., F.ASCE,**  
*Gresham, Smith & Partners  
(Past Chair)*

**Robert M. Bryson, P.E.,  
M.ASCE,** *City of Milwaukee  
Retd. (Track Chair)*

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

**Rich Thuma, P.E., M.ASCE,**  
*Crawford, Murphy & Tilly  
(Track Chair)*

**Zhanmin Zhang, Ph.D.,  
M.ASCE,** *University of Texas at  
Austin (Track Chair)*

**Jianming Ma, Ph.D., P.E.,  
M.ASCE,** *Texas Department of  
Transportation (Track Chair)*

**Randall (Randy) S. Over,  
P.E., F.ASCE,** *2014 President  
of ASCE, Ohio DOT Retd.  
(Sponsorships & Exhibits Chair)*

**Sean Corcoran, P.E., M.ASCE,**  
*Toole Design Group (Younger  
Member Events Co-Chair)*

## LOCAL ORGANIZATION COMMITTEE

**Chris Hendrickson, Ph.D.,  
Hon.M.ASCE,** *Carnegie Mellon  
University (Chair)*

**Zhen (Sean) Qian, Ph.D.,  
M.ASCE,** *Carnegie Mellon  
University (Younger Member  
Events Co-Chair)*

**Stan Caldwell, Ph.D.,** *Carnegie  
Mellon University*

**David DiGioia, P.E., M.ASCE,**  
*McMahon Associates, Inc.*

**Deborah Lange, P.E., Ph.D.,  
M.ASCE,** *Carnegie Mellon  
University*

**Julie Vandenbossche, P.E.,  
Ph.D., M.ASCE,** *University of  
Pittsburgh*

# SCHEDULE-AT-A-GLANCE

## Sunday, July 15

11:00 a.m. – 1:00 p.m.	<b>2018 World Cup Watching Party</b> , <i>Sponsored by Applied Research Associates</i>
12:00 – 6:30 p.m.	<b>Registration</b>
1:00 – 5:00 p.m.	<b>Exhibitor Move-in</b>
1:00 – 5:00 p.m.	<b>ASCE-T&amp;DI Committee Meetings</b>
1:00 – 2:30 p.m.	<b>National Science Foundation Workshop</b>
2:45 – 4:15 p.m.	<b>University Transportation Centers (UTC) Technology Transfer Workshop</b>
4:30 – 6:00 p.m.	<b>Mobility as a Service Workshop</b>
5:00 – 6:30 p.m.	<b>Transportation Research Board Committee AV070 – Aircraft/Airport Compatibility Meeting</b>
6:00 – 7:30 p.m.	<b>Ice Breaker Reception and Posters in Exhibit Hall</b>

## Monday, July 16

7:00 a.m. – 6:30 p.m.	<b>Registration</b>
7:30 – 8:30 a.m.	<b>Light Continental Breakfast in Exhibit Hall</b>
7:30 a.m. – 3:30 p.m.	<b>Exhibit Hall Open</b>
7:30 a.m. – 3:30 p.m.	<b>Posters in Exhibit Hall</b>
8:30 – 10:00 a.m.	<b>Opening Plenary Session</b>
10:00 – 10:30 a.m.	<b>Networking Break in Exhibit Hall</b> , <i>Sponsored by HDR</i>
10:30 a.m. – 12:00 p.m.	<b>Private-Sector CEO Forum Plenary Session</b>
12:00 – 1:30 p.m.	<b>Buffet Lunch in Exhibit Hall</b>
1:30 – 3:00 p.m.	<b>Concurrent Technical Sessions 1</b>
3:00 – 3:30 p.m.	<b>Networking Break in Exhibit Hall</b>
3:30 – 5:00 p.m.	<b>Concurrent Technical Sessions 2</b>
6:00 – 8:00 p.m.	<b>Awards Banquet</b> , <i>Sponsored by DiDi</i>

## Tuesday, July 17

7:00 a.m. – 5:00 p.m.	<b>Registration</b>
7:30 – 8:30 a.m.	<b>Light Continental Breakfast in Exhibit Hall</b>
7:30 a.m. – 3:30 p.m.	<b>Exhibit Hall Open</b>
7:30 a.m. – 3:30 p.m.	<b>Posters in Exhibit Hall</b>
8:30 – 10:00 a.m.	<b>State DOT CEO Forum Plenary Session</b>
10:00 – 10:30 a.m.	<b>Networking Break in Exhibit Hall</b>
10:30 a.m. – 12:00 p.m.	<b>A Modal Perspective Plenary Session</b>
12:00 – 1:30 p.m.	<b>Buffet Lunch in Exhibit Hall</b>
1:30 – 3:00 p.m.	<b>Concurrent Technical Sessions 3</b>
3:00 – 3:30 p.m.	<b>Networking Break in Exhibit Hall</b>
3:30 – 5:00 p.m.	<b>Concurrent Technical Sessions 4</b>
3:45 – 5:00 p.m.	<b>Exhibitor Move-out</b>
5:15 – 6:15 p.m.	<b>Town Hall with T&amp;DI Board of Governors</b>
5:15 – 6:15 p.m.	<b>Younger Member Three-Minute Pitch</b>
5:15 – 6:45 p.m.	<b>Transportation Research Board Committee ABJ70 – Information Systems and Technology Meeting</b>
6:30 – 7:30 p.m.	<b>Younger Member Session: “If I Could Tell You One Thing...”: The Best Advice I Ever Received</b>

## Wednesday, July 18

7:00 a.m. – 12:00 p.m.	<b>Registration</b>
7:30 – 8:30 a.m.	<b>Light Continental Breakfast</b>
8:30 – 10:00 a.m.	<b>Concurrent Technical Sessions 5</b>
10:00 – 10:30 a.m.	<b>Networking Break</b>
10:30 a.m. – 12:00 p.m.	<b>Concurrent Technical Sessions 6</b>
12:00 – 1:30 p.m.	<b>Lunch on Own</b>
1:30 – 5:00 p.m.	<b>Technical Tours</b>

## PROGRAM CONTENT TABS

Schedule-at-a-Glance

Pre-Conference Events

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T&DI Committees

Exhibit Hall

General Information & Hotel Floor Plan

## ICTD Mobile App

### **A quick, easy way to tap into the ICTD 2018 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 2018" 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. Wifi is available throughout the Wyndham hotel.



# PreConference Events

## **World Cup Watching Party**

Sunday, July 15 | 11:00 a.m. – 1:00 p.m. | [Ballroom 1](#)

## **T&DI Committee Meetings** See details under the T&DI Committees tab

Sunday, July 15 | 1:00 p.m. – 5:00 p.m.

## **National Science Foundation (NSF) Workshop: NSF Funding Opportunities in CMMI – CIS and OE Programs**

Sunday, July 15 | 1:00 – 2:30 p.m. | [King's Garden 4 & 5](#)

## **University Transportation Center (UTC) Technology Transfer Workshop**

Sunday, July 15 | 2:45 – 4:15 p.m. | [King's Garden 4 & 5](#)

## **Mobility as a Service Workshop**

Sunday, July 15 | 4:30 – 6:00 p.m. | [King's Garden 4 & 5](#)

## **TRB Committee Meeting** See details under the Special Events tab

## **Ice Breaker Reception**

Sunday, July 15 | 6:00 – 7:30 p.m. | [Ballroom 2-4](#)



SUNDAY | JULY 15

**World Cup Watching Party** 11:00 a.m. – 1:00 p.m. | Ballroom 1  
*Sponsored by Applied Research Associates* See more details under the Special Events tab

**T&DI Committee Meetings** 1:00 – 5:00 p.m. See details under the T&DI Committees tab

## National Science Foundation (NSF) Workshop: NSF Funding Opportunities in CMMI – CIS and OE Programs

1:00 – 2:30 p.m. | *King's Garden 4 & 5*

This talk will present two NSF programs within the Civil, Mechanical and Manufacturing Innovation (CMMI) division: Civil Infrastructure Systems (CIS) and Operations Engineering (OE). Over the last four years, these two core programs have supported over 300 PIs and co-PIs across 34 states and constitute more than \$65 million dollars in federal investment in fundamental research.

The first part of the talk will focus on the two programs in terms of their scope, as well as their current and future research perspectives. Various funding

opportunities related to CIS and OE will also be highlighted. The second part of the talk will be devoted to proposal preparation and writing tips, including opportunities for the audience members to ask program directors their questions.

**Speakers: Cynthia Chen and Irina Dolinskaya**, National Science Foundation  
*No additional registration fee.*



## University Transportation Center (UTC) Technology Transfer Workshop

2:45 – 4:15 p.m. | *King's Garden 4 & 5*



This workshop will first provide an overview of the United States Department of Transportation's University Transportation Center (UTC) Program. Since 1987 the UTC Program has advanced the state-of-the-art in transportation

research and technology and has helped develop the next generation of transportation professionals. This overview will be followed by a series of interactive technology transfer success stories with an emphasis on innovative technologies that would be of interest to ASCE members. The final section of the workshop will involve an interactive session with the audience on new methods for implementing UTC research in the field.

*No additional registration fee.*

### Moderator:

**Laurence R. Rilett**, Keith W. Klaasmeyer Chair in Engineering and Technology, Director, Nebraska Transportation Center, Director, Mid-America Transportation Center: University of Nebraska–Lincoln

### Keynote Speaker:

**Kevin Womack**, Director of USDOT's Office of Research, Development and Technology

### Panelists:

**Stan Caldwell**, Executive Director, Traffic21 Institute, Carnegie Mellon University

**David Noyce**, Professor and Department Chair, Department of Civil and Environmental Engineering, University of Wisconsin-Madison

**Atorod Azizinamini**, Professor and Chair, Department of Civil and Environmental Engineering, Florida International University

## Mobility as a Service Workshop

4:30 – 6:00 p.m. | [King's Garden 4 & 5](#)

Mobility as a Service (MaaS) is generally defined as using a digital interface to source and manage the provision of a transport related service(s) which meets the mobility requirements of a customer. Mobility means a MaaS provider offering their customer travel experience using any type of transport service, public or private. Innovation is expected to lead to new MaaS options for the consumer. Global interest in MaaS is growing and the concept is gaining the attention of the public and private sectors. MaaS offers an opportunity to improve how people and goods move, both from the perspective of the policy maker and for travelers themselves. This workshop seeks to identify key research challenges of MaaS as well as advance opportunities and approaches to implement MaaS.



**Moderator:** **Meng Li**, Tsinghua University, Beijing, China

### Speakers:

**Ando Ryosuke**, Toyota Transportation Research Institute, Japan; **Byungkyu Park**, Virginia Tech, U.S.; **Wanjing Ma**, Tongji University, Shanghai, China; **Koorosh Olyai**, Stantec, U.S.; **Matthew Lesh**, Mobility e3

*No additional registration fee.*

**TRB Committee Meeting** See details under the Special Events tab

## Ice Breaker Reception

6:00 – 7:30 p.m. | [Ballroom 2-4](#)

At the completion of the pre-conference workshops, we invite all ICTD 2018 attendees to join us for the ice breaker reception in the exhibit hall!

## Don't Miss the Posters in the Exhibit Hall

Posters will be available to view in the exhibit hall during the conference. See the Posters tab for more information.



## **Opening Plenary**

Monday, July 16 | 8:30 – 10:00 a.m. | [Ballroom 1](#)

## **Private Sector CEO Forum**

Monday, July 16 | 10:30 a.m. – 12:00 p.m. | [Ballroom 1](#)

## **State DOT CEO Forum**

Tuesday, July 17 | 8:30 – 10:00 a.m. | [Ballroom 1](#)

## **Modal Leaders' Forum**

Tuesday, July 17 | 10:30 a.m. – 12:00 p.m. | [Ballroom 1](#)



MONDAY | JULY 16

## Opening Plenary

### Keynote Speeches from Federal, State, and Local Government Leaders

8:30 – 10:00 a.m. | *Ballroom 1*

#### 1.5 PDHs

**Moderator:** David Hein, *Applied Research Associates, President, T&D*



**Kristina Swallow, P.E.,** ENV SP, F.ASCE, ASCE  
2018 President

Kristina Swallow is the current president of the American Society of Civil Engineers (ASCE). She is a civil engineering leader with more than 20

years of professional practice in water resources, transportation, and land development. Among her many past roles, she served as Region 8 Director, Region 8 Governor, Chair of the Education Activities and the Diversity and Women in Civil Engineering committees, and ASCE's 150th Anniversary Steering Committee.

Swallow has a diverse professional background that includes serving as a program manager in the capital improvements division for the City of Las Vegas, as a transportation policy advisor for a U.S. Senator in Washington, D.C., and as a land development consultant, including five years as a small business owner.

She is passionate about civil engineering and the benefits of infrastructure, especially transportation systems, for communities.



**William Peduto,** Mayor  
of the City of Pittsburgh

Since taking office as Pittsburgh's mayor, Bill Peduto has led a collaborative effort to make Pittsburgh a leading 21st Century city. The Peduto administration has partnered with the

White House on numerous initiatives, resulting in direct access to federal support related to affordable housing, education, economic development, energy efficiency, immigration, manufacturing, community policing, workforce development, technology, and transportation. Pittsburgh was recently selected to

join the Rockefeller Foundation 100 Resilient Cities network, which provides resources to improve city resilience in the face of climate change, globalization, and urbanization trends. Peduto is also a founding member of the MetroLab Network, a national alliance of cities and universities committed to providing analytically-based solutions to improve urban infrastructure, services, and other public sector priorities. The Peduto administration is working to ensure that everyone benefits from Pittsburgh's transformation and growth because "If it's not for all, it's not for us."



**Leslie S. Richards,**  
Secretary of Transportation,  
Pennsylvania Department of  
Transportation

PennDOT Secretary Leslie Richards has extensive leadership experience in the management of transportation projects

both in her private sector work in the planning and engineering fields over the past two decades, and in her work in local government. Her private and public sector backgrounds give her a unique perspective on understanding stakeholder issues and on the importance of bringing projects to completion on time and on budget.

## Private Sector CEO Forum Impacts of Connected & Autonomous Vehicles on Transportation & Development – Perspectives of Leaders from the Private Sector

10:30 a.m. – 12:00 p.m. | *Ballroom 1*

#### 1.5 PDHs

**Moderator:** Chris Hendrickson, *Carnegie Mellon University*



**Sean Harrington,** Vice  
President of City Solutions,  
Smart Communities &  
Venues, Verizon

Harrington joined Verizon through the acquisition of Sensity Systems by Verizon in October 2016. He was the chief operating officer for

Sensity, where he was responsible for the operational and strategic leadership of Sensity.

Harrington has led engineering, operations, sales and marketing, and business development at the company. He established the first strategic and partner relationships for Sensity, building an ecosystem for the newly created Light Sensory Network category.

# Plenary Events *(continued)*



**Harry Lightsey**, Executive Director of Emerging Technologies Policy, General Motors

In September 2016, Harry Lightsey was appointed executive director of Emerging Technologies Policy in the Global Public

Policy organization at General Motors (GM).

Lightsey joined GM in March 2012 as director, Federal Affairs—OnStar, Infotainment and Strategy Development. He subsequently also led the Federal Affairs team. He retired from AT&T in 2009 after serving as president of the Southeast Region and as its senior vice president of Legislative and External Affairs. Lightsey also served as State President South Carolina of BellSouth Telecommunications, Inc. Lightsey's career in the telecom industry spanned more than 26 years, including in a variety of positions in the external affairs and legal organizations at BellSouth.



**Malcolm Dougherty**, Senior Vice President and National Practice Lead, Transportation, Michael Baker International

Malcolm Dougherty is responsible for driving the strategic direction, growth, and performance of the

practice and leads an integrated team of regional transportation and management professionals in all aspects of transportation.

Dougherty brings more than 25 years of transportation industry experience to Michael Baker and holds numerous affiliations and certifications, including past chair of the Transportation Research Board's (TRB) Executive Committee, chair of the American Association of State Highway and Transportation Officials (AASHTO) Committee on Construction, and chair of the Toll Bridge Program Oversight Committee. He also is a member of the Board of Directors for the Intelligent Transportation Society (ITS) of America, AASHTO, and the California Public Works Board. Additionally, he is a member of the American Society of Civil Engineers (ASCE) and the past president of the Western Association of State Highway and Transportation Officials (WASHTO).



**Henry Liu**, Chief Scientist on Smart Transportation, DiDi

Henry Liu, Ph.D., is the chief scientist on Smart Transportation of DiDi and the general manager of the Urban Transportation Business Unit. He is also a professor of civil and environmental

engineering at the University of Michigan, Ann Arbor. Liu received his Ph.D. in Civil and Environmental Engineering from the University of Wisconsin at Madison in 2000 and his bachelor's degree in automotive engineering from Tsinghua University (China) in 1993. Liu's research interests focus on transportation network monitoring, modeling, and control, as well as mobility and safety applications with connected and automated vehicles. On these topics, he has published more than 80 refereed journal articles. Liu is the managing editor of *Journal of Intelligent Transportation Systems*, and an associate editor of *Transportation Research Part C, Network and Spatial Economics*, and *Transportmetrica Part B*.

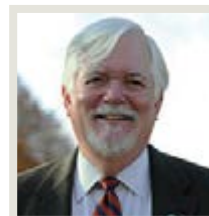
TUESDAY | JULY 17

## State DOT CEO Forum Impacts of Connected & Autonomous Vehicles on Transportation & Development – Perspectives of Leaders from the Public Sector

8:30 – 10:00 a.m. | [Ballroom 1](#)

### 1.5 PDHs

**Moderator:** Kumares Sinha, *Purdue University*



**Roger Millar**, Secretary of Transportation, Washington State DOT

Roger Millar was appointed Secretary of Transportation by Governor Jay Inslee in August 2016. He joined WSDOT as deputy secretary in October 2015 and was appointed

acting secretary in February 2016. Millar oversees an agency of 6,800 employees, with responsibility for 18,600 lane miles of highway, 3,294 bridges, general aviation airports, passenger- and freight-rail programs, and Washington State Ferries, the nation's largest ferry system.



**Carlos Braceras,**  
Executive Director, Utah DOT

Carlos M. Braceras is the Executive Director of the Utah Department of Transportation (UDOT). In this capacity, he is responsible for UDOT's more than 1,600 employees and the design, construction,

and maintenance of Utah's 6,000-mile system of roads and highways.

UDOT recently celebrated the completion of two of the largest highway projects in Utah history with the Utah County I-15 Corridor Expansion (I-15 CORE) and the first phase of the Mountain View Corridor in west Salt Lake County. Both projects address long-term transportation needs and will improve mobility of goods and services throughout the state.



**Darran Anderson,**  
Director of Strategy and Innovation, Texas Department of Transportation (TxDOT)

Darran Anderson is the Director of Strategy and Innovation for TxDOT. He is responsible for directing TxDOT's strategies for

technology, innovation, research, and performance. He directs planning, analysis, execution, change management, and continuous assessment of technology and business process improvements, and strategic research and innovation initiatives across TxDOT. He has 29 years of experience in the areas of leadership, strategic planning, operations, technology programs, training, tests/experimentation, sensors, and simulation.



**Kimberly Avery,** Director,  
Bureau of Field Services,  
Michigan DOT

Kimberly Avery, P.E., is the Director of Bureau of Field Services at the Michigan Department of Transportation (MDOT). She is responsible for overseeing

MDOT's statewide maintenance, construction, bridge management, pavement, research program, and safety and security operations.

A Valparaiso University graduate, Avery has 25 years of experience at MDOT. She is involved with several initiatives and teams, including the Autonomous Vehicle Implementation Team, the Strategic Planning

Committee, the Great Lakes Regional Transportation Operating Coalition, and the Commercial Vehicle Steering Team. In addition, she is a member of the Detroit Greenway Coalition, the Detroit Engineering Society, and is president of the Michigan chapter of the Conference of Minority Transportation Officials (COMTO).

## Modal Leaders' Forum

### Impacts of Emerging Technologies on Transportation & Development – A Modal Perspective

10:30 a.m. – 12:00 p.m. | [Ballroom 1](#)

#### 1.5 PDHs

**Moderator:** Michael Walton, *The University of Texas at Austin*



**Vincent Valdes,**  
Associate Administrator for Research, Demonstration and Innovation, Federal Transit Administration

As the Associate Administrator for FTA's Office of Research, Demonstration and Innovation since 2008,

Vincent Valdes leads a group of program managers, transportation specialists, and engineers who work on FTA's critical transit research program. The program provides a forum for transit research at the national level and facilitates the development of innovative transit practices and technologies to support national public transportation.

Throughout his career in the public and private sectors, Valdes has led work in various fields including engineering, transportation research, urban and regional planning, neighborhood economic development, environmental protection, and international development.

# Plenary Events *(continued)*



**Dwight W. Clark**, President, American Railway Engineering and Maintenance-of-Way Association (AREMA)

Dwight Clark is the 2017-18 President of the AREMA Educational Foundation Board of Directors.

Throughout his 37 years in the railway industry with the Missouri Pacific Railroad and Union Pacific Railroad, he has held positions both in the field and system across the network. During this time, Clark developed an acute awareness of the imperative for railway maintenance personnel, from the boots-on-the-ground track employees up to executives, to develop, utilize, and support best-practice technologies and standards for track maintenance.

For most of his career, Clark has participated in the promotion of national and international research and development of rail infrastructure technology and maintenance.



**Michel Hovan**, Manager of Federal Aviation Administration (FAA) Airport Technology Research & Development Branch

Michel Hovan is the Manager of the FAA's Airports Technology Research branch located

at the William J. Hughes FAA Technical Center in NJ. As such, Michel manages a \$33 M research portfolio focused on airport safety, airport pavement and airport environmental research. The research is conducted by FAA to update and create airports-related FAA Advisory Circulars that are used by airports nationwide. He holds a Ph.D. from the University of Minnesota in Geo-Engineering, a Master's degree in geotechnical engineering from the University of Manitoba as well as an engineering from France. Throughout his various positions, Michel has accumulated decades of experience in highway and airports research, as well as a front line experience in the field. Between 2006 and 2013, Michel was the manager of FAA's airport safety and engineering for the FAA's New England region, and as such, was able to see firsthand the application of research in the field by airports of all sizes. On a side note, Michel is also an advanced martial arts practitioner and instructor.



**Egan Smith**, Managing Director Intelligent Transportation Systems (ITS) Joint Program Office (JPO)

Egan Smith has decades of professional experience in intelligent transportation systems (ITS), transportation program management,

and transportation planning. Smith is a registered Professional Engineer, Professional Traffic Operations Engineer, and Professional Transportation Planner. He has a bachelor of science degree in civil engineering, a master of engineering in traffic engineering and operations research, and a master of science in technology management.

Smith is the managing director of the Intelligent Transportation Systems (ITS) Joint Program Office (JPO). He is responsible for the timely and efficient implementation of ITS activities, including the development and implementation of the ITS Strategic Plan; the review and assessment of legislative proposals; and the coordination, oversight and evaluation for all ongoing ITS JPO program activities.



## DiDi @ ICTD 2018

- July 16 10: 30 - 12: 00 Opening Plenary-Private Sector CEO Forum  
Impacts of Connected & Autonomous Vehicles on Transportation & Development  
Henry Liu, DiDi, VP, Chief Scientist on Smart Transportation
- July 16 18: 00 - 20: 00 The ICTD 2018 Didi Awards Banquet  
Kelvin C.P. Wang, Ph.D., P.E., M.ASCE  
Henry Liu, DiDi, VP, Chief Scientist on Smart Transportation
- July 17 15: 30 - 17: 00 Technical Session: Urban Traffic Control with Connected Vehicle  
Stephen Smith, Ph.D., Professor, Director, ICLL, CMU  
Jeff Ban, Ph.D., Associate Professor, CEE, UW  
Jianfeng Zheng, Ph.D., Algorithm Expert

## JOIN US

Please send your resume /CV to [Globalhr@didichuxing.com](mailto:Globalhr@didichuxing.com)

## ABOUT DiDi

DiDi Chuxing is the world's leading mobile transportation platform. We are committed to working with communities and partners to solve the world's transportation, environmental and employment challenges by using big data-driven deep learning algorithms that optimize resource allocation. By continuously improving user experience and creating social value, we strive to build an open, efficient, collaborative, and sustainable transportation ecosystem.

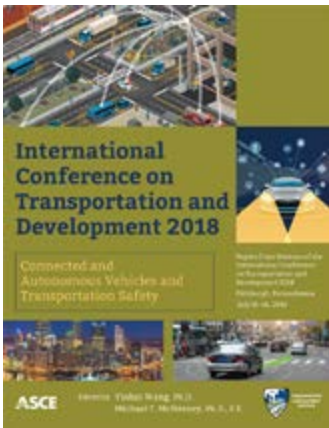
For more information,  
please visit <http://www.didichuxing.com/en/>



TECHNICAL PROGRAM







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Conference on Transportation & Development 2018.

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**Use token: ICTD**

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## SUNDAY, July 15

### Speakers:

11:00 a.m. – 1:00 p.m.	Watch Party: FIFA World Cup Soccer Final <i>Sponsored by Applied Research Associates</i>	
1:00 p.m. – 3:00 p.m.	ASCE-T&DI Committee Meetings	
1:00 p.m. – 2:30 p.m.	<b>National Science Foundation (NSF) Workshop: NSF Funding Opportunities in CMMI: CIS and OE Programs</b>	Cynthia Chen and Irina Dolinskaya, National Science Foundation
2:45 p.m. – 4:15 p.m.	<b>University Transportation Center (UTC) Technology Transfer Workshop</b> <b>Moderator: Laurence R. Rilett</b> , Keith W. Klaasmeyer Chair in Engineering and Technology, Director, Nebraska Transportation Center, Director, Mid-America Transportation Center, University of Nebraska–Lincoln	<b>Keynote Speaker: Kevin Womack</b> , Director of USDOT’s Office of Research, Development and Technology <b>Panelists:</b> <b>Stan Caldwell</b> , Executive Director, Traffic21 Institute, Carnegie Mellon University <b>David Noyce</b> , Professor and Department Chair, Department of Civil and Environmental Engineering, University of Wisconsin–Madison <b>Atorod Azizinamini</b> , Professor and Chair, Department of Civil and Environmental Engineering, Florida International University
3:00 p.m. – 5:00 p.m.	ASCE-T&DI Committee Meetings	
4:30 p.m. – 6:00 p.m.	<b>Mobility as a Service Workshop</b> <b>Moderator: Meng Li</b> , Tsinghua University, Beijing, China	<b>Ando Ryosuke</b> , Toyota Transportation Research Institute, Toyota, Japan <b>Byungkyu Park</b> , Virginia Tech, U.S. <b>Wanjing Ma</b> , Tongji University, Shanghai, China <b>Koorosh Olyai</b> , Stantec, U.S. <b>Matthew Lesh</b> , Mobility e3, U.S.
6:00 p.m. – 7:30 p.m.	Ice Breaker Reception in Exhibit Hall	

## MONDAY, July 16

7:30 a.m. – 8:30 a.m.	Light Continental Breakfast in Exhibit Hall	
8:30 a.m. – 10:00 a.m.	<b>Opening Plenary Session</b> <b>Moderator: David Hein</b> , Applied Research Associates; President, T&DI	<b>Kristina Swallow, P.E., ENV SP, F.ASCE</b> , ASCE 2018 President <b>David Hein, P.E., M.ASCE</b> , T&DI President <b>Mayor William Peduto</b> , Mayor of the City of Pittsburgh <b>Leslie Richards</b> , Secretary of Transportation, Pennsylvania Department of Transportation
10:00 a.m. – 10:30 a.m.	Networking/Coffee Break in the Exhibit Hall	
10:30 a.m. – 12:00 p.m.	<b>Impacts of Connected &amp; Autonomous Vehicles on Transportation &amp; Development – Perspectives of Leaders from the Private Sector</b> <b>Moderator: Chris Hendrickson</b> , Carnegie Mellon University	<b>Harry Lightsey</b> , Executive Director of Emerging Technologies Policy, General Motors <b>Sean Harrington</b> , Vice President of City Solutions, Smart Communities & Venues, Verizon <b>Henry Liu</b> , Vice President and Chief Scientist on Smart Transportation, DiDi <b>Malcolm Dougherty</b> , Senior Vice President and National Practice Lead, Transportation, Michael Baker International
12:00 p.m. – 1:30 p.m.	Buffet Lunch in Exhibit Hall	

Details on each of these sessions are organized by track and are presented on the following pages.

Track A: Connected & Autonomous Vehicles I	Track B: Connected & Autonomous Vehicles II	Track C: Transportation Safety	Track D: Planning, Development & Sustainability	Track E: Rail & Public Transit	Track F: Airports & Infrastructure Systems	Track G: Traffic Operations	Track H: Highway & Airfield Pavements
<b>1:30 p.m. – 3:00 p.m. Concurrent Technical Sessions 1</b>							
Connected and Automated Transport – Shaping the Future	Impacts of CAVs on Transportation & Development	Transportation Data Driven Safety Analysis	Smart Cities	Broad Impacts Resulting from Transit Related Automation	Enhanced Infrastructure Systems Management	Regional Traffic Congestion	Airport Pavement Testing and Evaluation
<b>3:00 p.m. – 3:30 p.m. Networking Break in the Exhibit Hall</b>							
<b>3:30 p.m. – 5:00 p.m. Concurrent Technical Sessions 2</b>							
Sustainable Connected and Automated Transport	Standardization for the Next Generation of Mobility: A Focus on Connected Automated Vehicles and Shared Mobility	Contemporary Safety Issues	Planning for Sustainability	Automated Personal Rapid Transit and People Movers: Existing Trends and Characteristics	Sensor Technologies in Infrastructure Systems Management	Innovative Traffic and Pavement Performance Measures	Case Studies of Airfield Construction
<b>6:00 p.m. – 8:00 p.m. The ICTD 2018 DiDi Awards Banquet &amp; Francis C. Turner Lecture</b>							

## TUESDAY, July 17

### Speakers:

7:30 a.m. – 8:30 a.m.	Light Continental Breakfast in Exhibit Hall							
8:30 a.m. – 10:00 a.m.	<b>Impacts of Connected &amp; Autonomous Vehicles on Transportation &amp; Development – Perspectives of Leaders from the Public Sector</b> Moderator: <b>Kumares Sinha</b> , Purdue University				<b>Roger Millar</b> , Secretary of Transportation, Washington State DOT <b>Carlos Braceras</b> , Executive Director, Utah DOT <b>Darran Anderson</b> , Director of Strategy And Innovation, Texas DOT <b>Kim Avery</b> , Director, Bureau of Field Services, Michigan DOT			
10:00 a.m. – 10:30 a.m.	Networking/Coffee Break in the Exhibit Hall							
10:30 a.m. – 12:00 p.m.	<b>Impacts of Emerging Technologies on Transportation &amp; Development – A Modal Perspective</b> Moderator: <b>Mike Walton</b> , The University of Texas at Austin				<b>Vincent Valdes</b> , Associate Administrator for Research, Demonstration and Innovation, Federal Transit Administration <b>Egan Smith</b> , Managing Director, US DOT's Intelligent Transportation Systems (ITS) Joint Program Office (JPO) <b>Dwight W. Clark</b> , President, American Railway Engineering and Maintenance-of-Way Association (AREMA) <b>Michel Hovan</b> , Manager, Federal Aviation Administration (FAA) Airport Technology Research & Development Branch			
12:00 p.m. – 1:30 p.m.	Buffet Lunch in Exhibit Hall							
<i>Details on each of these sessions are organized by track and are presented on the following pages.</i>								
<b>Track A: Connected &amp; Autonomous Vehicles I</b>	<b>Track B: Connected &amp; Autonomous Vehicles II</b>	<b>Track C: Transportation Safety</b>	<b>Track D: Planning, Development &amp; Sustainability</b>	<b>Track E: Rail &amp; Public Transit</b>	<b>Track F: Airports &amp; Infrastructure Systems</b>	<b>Track G: Traffic Operations</b>	<b>Track H: Highway &amp; Airfield Pavements</b>	
1:30 p.m. – 3:00 p.m.	<b>Concurrent Technical Sessions 3</b>							
Enabling Technologies for Connected and Automated Vehicles	Applications of Artificial Intelligence & Machine Learning Tools to Solve Transportation Problems (TRB ABJ70)	Special Issues on Safety	Transportation & Land Use Planning		Impacts of Rail Transportation Systems	Airside Planning	Impact of Railroad Crossings, Pedestrian Behavior, and Road Construction	Airport Construction Materials & New Technologies
3:00 p.m. – 3:30 p.m.	Networking Break							
3:30 p.m. – 5:00 p.m.	<b>Concurrent Technical Sessions 4</b>							
Cooperative Trucking Automation	CAV Research: A State and National Perspective	Spatial Analysis	Impact Assessment: Vehicle Automation to Complete Streets		Recent Developments in Advanced Bus Transit Systems	Airport Terminal and Landside Planning	Technology Applications for Airport Pavements	Advancement in Cement and Concrete Materials
5:15 p.m. – 6:15 p.m.	<b>Town Hall with the Board of Governors of Transportation &amp; Development Institute (T&amp;DI) – Home for Transportation &amp; Development Related Activities at ASCE: How ASCE can meet your professional needs?</b>							
5:15 p.m. – 6:15 p.m.	<b>Younger Member Event: Three-Minute Pitch</b>							
6:30 p.m. – 7:30 p.m.	<b>Younger Member Session: "If I Could Tell You One Thing..."</b>							

## WEDNESDAY, July 18

7:30 a.m. – 8:30 a.m.	Light Continental Breakfast							
<i>Details on each of these sessions are organized by track and are presented on the following pages.</i>								
<b>Track A: Connected &amp; Autonomous Vehicles I</b>	<b>Track B: Connected &amp; Autonomous Vehicles II</b>	<b>Track C: Transportation Safety</b>	<b>Track D: Planning, Development &amp; Sustainability</b>	<b>Track E: Rail &amp; Public Transit</b>	<b>Track F: Airports &amp; Infrastructure Systems</b>	<b>Track G: Traffic Operations</b>	<b>Track H: Highway &amp; Airfield Pavements</b>	
8:30 a.m. – 10:00 a.m.	<b>Concurrent Technical Sessions 5</b>							
Behavior and Safety in Connected and Automated Traffic	Shared Mobility and Connected Automation	Highway Safety Manual/Signals	Bikes & Pedestrians		Challenges of Rail Transportation Systems	Innovative Techniques for Infrastructure Resiliency	Freight Transportation Management and Data Innovations	Advanced Analysis and Application
10:00 a.m. – 10:30 a.m.	Networking Break							
10:30 a.m. – 12:00 p.m.	<b>Concurrent Technical Sessions 6</b>							
From Autonomous Vehicles to Autonomous Traffic	Policy and Legal Implications of Connected and Automated Vehicles	Roadside Hardware for Safety	Sustainability Evaluation and Assessment		Transit Ride Sharing, Parking, and Passenger Systems	Pittsburgh International Airport Program	Intersections, Roundabouts, and Big Data	Impacts on Performance of Pavements
12:00 p.m. – 1:30 p.m.	Lunch on Own							
1:30 p.m. – 5:00 p.m.	<b>Technical Tours: Three Rivers Boat Tour: A Guide to Pittsburgh's Bridges and Development from the Water; CMU Lab and Pittsburgh Smart Corridor Tour; Port Authority Traffic Facility Transit Tour via Light Rail; Pittsburgh International Airport Tour</b>							

## TRACK A: CONNECTED & AUTONOMOUS VEHICLES I

### MONDAY, July 16

1:30 p.m. - 3:00 p.m. **Concurrent Technical Session 1, King's Garden 1**

#### Connected and Automated Transport – Shaping the Future

**Moderator:** Jianming Ma, *Texas Department of Transportation*

**Shaping the Future of Transportation: Research to Guide Change**, Katherine Kortum, *Transportation Research Board*

**Modeling Connected Vehicle Impacts on Traffic Mobility, Safety and Emission**, Heng Wei and Ting Zuo, *University of Cincinnati*; Hao Liu, *The University of California at Berkeley*; Y. Jeffrey Yang, *U.S. Environmental Protection Agency*

**Connected and Autonomous Vehicles Make Smart Cities Smart Cities**, Wessel van der Pol and Robbert Lohmann, *2getthere*

**From ADAS to Autonomous Vehicles: A Discussion Based on a Survey in Japan**, Ryosuke Ando and Yasuhide Nishihori, *Toyota Transportation Research Institute*

3:30 p.m. - 5:00 p.m. **Concurrent Technical Session 2, King's Garden 1**

#### Sustainable Connected and Automated Transport

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

**How the Era of Connected and Autonomous Vehicles (CAVs) May Revolutionize State Safety and Emissions Inspection Programs**, H Scott Matthews, *Carnegie Mellon University*

**Energy Consumption Analysis for Connected and Autonomous Mobility Systems**, Eleftheria Kontou, Yuche Chen, and Jeff Gonder, *National Renewable Energy Laboratory*

**Development and Evaluation of Automated Valet Parking System under the Connected Vehicles Environment**, Cong Zhao, Yuchuan Du, and Xinghua Li, *Tongji University*

**The Impacts of Connected Vehicles on Fuel Consumption and Traffic Operation under Recurring and Nonrecurring Congestion**, Arezoo Samimi Abianeh, Mark Burris, and Alireza Talebpour, *Texas A&M University*; Kumares Sinha, *Purdue University*

### TUESDAY, July 17

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

#### Enabling Technologies for Connected and Automated Vehicles

**Moderator:** Jeff Ban, *University of Washington*

**Traffic Control Using Trajectory Data: Practice at DiDi**, Jianfeng Zheng, *DiDi*

**Temporal-Spatial Dimension Extension-based Autonomous Intersection Control Formulation for Autonomous Vehicles**, Qiong Wu, Zhenning Li, Guohui Zhang, and Panos Prevedouros, *University of Hawaii*; Xiaoyue Liu, *University of Utah*

**Connected Road Infrastructures with 360-degree LiDAR Sensors**, Hao Xu, *University of Nevada, Reno*

**Non-Signalized Intersections Control – A Collaborative Fault Tolerant Control Perspective**, Hong Wang, *Pacific Northwest National Laboratory*, H M Abdul Aziz, *Oak Ridge National Laboratory*; Stanley Young, *NREL*

**A Driving Simulator Study: Resuming Control from Automated Vehicle under Different Conditions**, Peiyan Chen, Feng Chen, Xiaoxiang Ma, Lin Zhang and Xiaodong Pan, *Tongji University*


**TRACK A: CONNECTED & AUTONOMOUS VEHICLES I** *(continued)*
**TUESDAY, July 17** *(continued)*

 3:30 p.m. - 5:00 p.m. **Concurrent Technical Session 4, Rivers**
**Cooperative Trucking Automation**
**Moderator:** Mike Brown, *Southwest Research Institute*
**Leveraging Autonomy in Truck Platooning to Improve Freight Transportation Sustainability,** Erman Gungor, Ruifeng She, Imad Al-Qadi, and Yanfeng Ouyang, *University of Illinois at Urbana-Champaign*
**A Stochastic Optimal Control Approach for Real-Time Routing of Connected Automated Vehicles,** Xidong Pi and Zhen (Sean) Qian, *Carnegie Mellon University*; Xiaopeng Li, *University of South Florida*
**Longitudinal Control Strategy of Platoon with Mixed Automated and Manually Driven Vehicles for Reducing Traffic Oscillations,** Zhibin Li, Ye Li, Lu Xing, and Wei Wang, *Southeast University*
**WEDNESDAY, July 18**

 8:30 a.m. - 10:00 a.m. **Concurrent Technical Session 5, Rivers**
**Behavior and Safety in Connected and Automated Traffic**
**Moderator:** Guohui Zhang, *University of Hawaii at Manoa*
**Distributed Computation-Based Cooperative Model Predictive Control for a Platoon Mixed with Connected and Autonomous Vehicles and Human-Drive Vehicles,** Siyuan Gong, *Purdue University*; Lili Du, *University of Florida*
**Research on Lane-Changing Behavior in the Mixed Autonomous Vehicles and Human-Driving Vehicles Environment,** Changmei Dongye, Jianjun Shi, and Zeyu Shi, *Beijing University of Technology*
**Human-Like Autonomous Car-Following Model by Deep Deterministic Policy Gradient Reinforcement Learning,** Meixin Zhu and Xuesong Wang, *Tongji University*; Yinhai Wang, *University of Washington*
**Crashes in Unsignalized Intersections and the Related Collision Avoidance Strategy of Intelligent Vehicles,** Quan Yuan, Xunjia Zheng, Jianqiang Wang, and Yibing Li, *Tsinghua University*

 10:30 a.m. - 12:00 p.m. **Concurrent Technical Session 6, Rivers**
**From Autonomous Vehicles to Autonomous Traffic**
**Moderator:** Sean Qian, *Carnegie Mellon University*
**Optimal Variable Speed Limit Control for the Mixed Traffic Flows in a Connected and Autonomous Vehicle Environment,** Wei Fan and Miao Yu, *The University of North Carolina at Charlotte*
**Reducing Traffic Emissions using Sparsely Distributed Autonomous Vehicles in the Flow,** Raphael Stern and Daniel Work, *University of Illinois at Urbana-Champaign*
**A Mixed Traffic Capacity Analysis and Lane Management Model for Connected Automated Vehicles: A Markov Chain Method,** Amir Ghiasi, Omar Hussain, and Xiaopeng Li, *University of South Florida*; Zhen (Sean) Qian, *Carnegie Mellon University*
**Traffic Signal Timing Optimization with Connected Vehicles,** Wan Li and Xuegang (Jeff) Ban, *University of Washington*

## TRACK B: CONNECTED & AUTONOMOUS VEHICLES II

**MONDAY, July 16**

1:30 p.m. - 3:00 p.m. **Concurrent Technical Session 1, King's Garden 2**

### Impacts of CAVs on Transportation & Development

**Moderator:** Jim Katsafanas, *Michael Baker International*

**CAV Roadmap and the DSRC Pilot,** Bob Taylor, *Pennsylvania Turnpike*

**Connected & Autonomous Vehicles: Strategic plan, Pilot Deployment and Legislative Developments,** Mark Kopko, *PennDOT*

**CAV Deployment: Public-Partnerships – Key Benefits, Challenges, and Realities,** Matt Smith, *Michael Baker International*

3:30 p.m. - 5:00 p.m. **Concurrent Technical Session 2, King's Garden 2**

### Standardization for the Next Generation Mobility: A Focus on Connected Automated Vehicles and Shared Mobility

**Moderator:** Jack Pokrzywa, *SAE International*

Description: Surface transportation is rapidly evolving with advanced technologies enabling vehicle connectivity and automation as well as sharing of mobility assets and movement of goods. The high level of complexity and disruption in these areas must be accompanied by standards development to enable safe, reliable, and faster deployment. This session will highlight key standardization activities in shared mobility and vehicle automation and connectivity across SAE International as well as their policy and regulatory outcomes.

**SAE Standards in Preparation of the Mobility Revolution,** Jack Pokrzywa, *SAE International*

**Are We Ready to Standardize Shared Mobility?,** Annie Chang, *SAE International*

**Standards, Policy, Regulation and Legislation of Rapidly Advancing Passenger and Freight Mobility Technologies: Status and Perspectives,** William Gouse, *SAE International*

**TUESDAY, July 17**

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

### Applications of Artificial Intelligence & Machine Learning Tools to Solve Transportation Problems (TRB ABJ70)

**Moderator:** Sherif Ishak, *University of Alabama, Huntsville*

Description: This session presents various applications of artificial intelligence and machine learning tools to solve transportation problems associated with classification, optimization, and adaptation applications for identifying the type of secondary tasks in naturalistic driving data; determining the type of vehicle from point cloud data collected with LiDAR sensors; optimizing signalized intersections in connected/automated environments; and modeling individual route choice preferences.

**Autonomous Vehicle Routing Optimization in a Competitive Environment: A Reinforcement Learning**

**Application,** Hariith Abdulsattar, Haizhong Wang, Alireza Mostafizi, *Oregon State University*

**A Bi-Level Methodology for Identification of Types of Secondary Tasks from Observed Driving Behavior**

**Data: Application of Ensemble Tree Machine Learning Algorithms on SHRP2 NDS Data,** Osama A. Osman and Sogand Karbalaieali, *Louisiana State University*; Sherif Ishak, *University of Alabama at Huntsville*; Mustafa Hajij, *University of Southern Florida*

**Assessing Safety Impacts of Connected and Automated Vehicles under Cybersecurity Attacks,** Brian Park and Lian Cui, *University of Virginia*

**Implementation of Transfer Learning for Trailer Type Identification Using Side Fire LiDAR,** Mecit Cetin, Reza Vatani Nezafat, and Olcay Sahin, *Old Dominion University*



**TRACK B: CONNECTED & AUTONOMOUS VEHICLES II** *(continued)*

**TUESDAY, July 17** *(continued)*

3:30 p.m. - 5:00 p.m. **Concurrent Technical Session 4, Ballroom 1**

**CAV Research: A State and National Perspective**

**Moderator:** Darrin Jensen, *Texas Department of Transportation*

**Enabling CAV Safety and Optimization – A Systems Perspective,** Mike Brown, *Southwest Research Institute*

**CAV Research in Texas,** Darrin Jensen, *Texas Department of Transportation*

**Optimal Operational Control for Signalized Intersections for Smooth Traffic Flow with Minimized Energy Consumption,** Hong Wang, *Pacific Northwest National Laboratory, U.S. Department of Energy*

**WEDNESDAY, July 18**

8:30 a.m. - 10:00 a.m. **Concurrent Technical Session 5, Ballroom 1**

**Shared Mobility and Connected Automation**

**Moderator:** Koorosh Olyai, *Stantec Consulting Services*

**In-vehicle Time Adaptations to Use of Autonomous Vehicles,** Ying Jiang and Yin Hai Wang, *University of Washington*

**Mass Transit – A Connected and Autonomous Vehicle Highway,** Maniel Vineberg, *Independent Consultant*

**Estimating Future Travel Costs using Shared Autonomous Vehicle (SAV) Systems,** Linda Lim and Aly Tawfik, *California State University, Fresno*

10:30 a.m. - 12:00 p.m. **Concurrent Technical Session 6, Ballroom 1**

**Policy and Legal Implications of Connected and Automated Vehicles**

**Moderator:** Darrin Jensen, *Texas Department of Transportation*

**Removing the Legal Roadblocks to Highly Autonomous Vehicles: The Interplay of State and Federal Laws Regarding HAVs,** Christine Soares, Esq., *Cozen O'Connor*

**Sharing Connected Vehicle Infrastructure Between Governments and Internet Service Providers,** Alexandre Ligo and John Peha, *Carnegie Mellon University*

**Urban Arterial Work Zones for Traditional and Autonomous Vehicle Environments,** Amiy Varma, *North Dakota State University*

**Like or Dislike? Autonomous Vehicles for Chinese Road Users,** Quan Yuan and Shengqin Tang, *Tsinghua University*



## TRACK C: TRANSPORTATION SAFETY

**MONDAY, July 16**

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

### **Transportation Data Driven Safety Analysis - Session by Federal Highway Administration & Booz Allen Hamilton**

**Moderator:** Brian Pickerall, *Booz Allen Hamilton*

Description: With limited funding, transportation professionals are required to maximize their return on investment. Data-Driven Safety Analysis (DDSA) employs evidence-based models to quantify the safety impacts. This session will overview emerging DDSA practices and applications for alternative modes of transportation.

**Data-Driven Safety Analysis: Integrating Safety Performance Into ALL Transportation Investment Decisions,** John McFadden, *Federal Highway Administration*

**FAA Statistical Methods for Departure Predictability (SMDP),** Dejan Neskovic, *Booz Allen Hamilton*

**Prototyping Data-Driven Risk Analytics towards Improving the Safe Transportation of Hazardous Materials for the Pipeline and Hazardous Materials Safety Administration,** Dwayne Henclewood, *Booz Allen Hamilton*

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

### **Contemporary Safety Issues**

**Moderator:** Sunanda Dissanayake, *Kansas State University*

**Evaluation Model for Urban Expressway Exit based on Cross-Sectional Traffic Flow Monitoring,** Dong-lan Su, *Suzhou University of Science and Technology*, Jian-bei Liu and Ma Xiaolong, *First Highway Consultants Co., Ltd*

**GIS Based Spatial Analysis of Pedestrian Crashes: A Case Study of South Carolina,** Afshin Famili, Wayne Sarasua, Alireza Shams, Jennifer Ogle, and Niloofer Asadi, *Clemson University*

**Some Thoughts on Development of Road Passenger Transport in Tibet,** Chen Shuo and Mai Yuanyuan, *China Academy of Transportation Sciences*

**Technology Study to Improve Driving Visual Cognition Distance in Highway Fog Area at Night,** Jiangbi Hu, Jianlong Chen, Chike Yuan, and Shuya Sun, *Beijing University of Technology*

**TUESDAY, July 17**

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

### **Special Issues on Safety**

**Moderator:** Srinivas S. Pulugurtha, *University of North Carolina at Charlotte*

**Road User Behavior Survey to Identify Safety Issues of Elderly Drivers in Kansas,** Sunanda Dissanayake and Sameera Koththigoda, *Kansas State University*; Jian John Lu, *Tongji University*

**Analyzing of Frequency and Severity of Motorcycle Crashes at Municipality of Anchorage, Alaska,** Osama Abaza and Tanay-Datta Chowdhury, *University of Alaska at Anchorage*

**Patterns and High Value Locations of Motorcycle Crashes in Florida,** Lin Xiao and Wei Zhang, *Federal Highway Administration*

**Assessment of Existing Barrier Warrants for Roadside Slopes,** Christine Carrigan and Malcolm Ray, *RoadSafe, LLC*





## TRACK C: TRANSPORTATION SAFETY (continued)

### TUESDAY, July 17 (continued)

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

#### Spatial Analysis

**Moderator:** Nishantha Bandara, *Lawrence Technological University*

**Analysis of Highway Crashes Investment Using Spatial Tracking Technology**, Osama Abaza and Ty Wardell, *University of Alaska at Anchorage*

**Visualizing the Effect of a Crash Over Space and Time Using Historical Travel Time and Crash Data**, Srinivas Pulugurtha, Venkata Duddu, and Kamalkannan Elangovan, *University of North Carolina at Charlotte*

**Safe from Crime at Location-Specific Transit Facilities**, Anne Moudon, Alon Bassok and Mingyu Kang, *University of Washington*

**GIS-Based Analysis of Hydroplaning Risk Using LIDAR Technology**, Afshin Famili, Alireza Shams, Wayne Sarasua, Jennifer Ogle, and Niloofer Asadi, *Clemson University*

### WEDNESDAY, July 18

8:30 a.m. - 10:00 a.m. **Concurrent Technical Session 5, Brigade**

#### Highway Safety Manual/Signals

**Moderator:** Sunanda Dissanayake, *Kansas State University*

**Impact of Part-Time Shoulder Use on Safety Through the Highway Safety Manual**, Sean Coffey, Seri Park, and Leslie McCarthy, *Villanova University*

**Calibration of the Highway Safety Manual for Basic Freeway Segments in Kansas**, Imalka Matarage and Sunanda Dissanayake, *Kansas State University*

**Improving the Safety of Left-Turn Operations at Signalized Intersections for High-Risk Groups**, Ahmed Abdel-Rahim and Angel Gonzalez, *University of Idaho*

**Impact of Countdown Device on Drive Behavior at Signalized Intersection**, Yulong He, *Beijing University of Technology*; Xiaoduan Sun, *University of Louisiana*

10:30 a.m. - 12:00 p.m. **Concurrent Technical Session 6, Brigade**

#### Roadside Hardware for Safety

**Moderator:** Srinivas S. Pulugurtha, *University of North Carolina at Charlotte*

**Meta-Analysis of the Risk of Fatal and Incapacitating Injury in Tangent W-Beam Guardrail Terminal Collisions**, Malcolm Ray and Christine Carrigan, *RoadSafe, LLC*

**A Probability-Based Approach for Assessment of Concrete Median Barriers**, Qian Wang, *Manhattan College*; Hongbing Fang, *University of North Carolina at Charlotte*; Hanfeng Yin, *Hunan University, China*

**Assessing the Field Performance of W-Beam Terminals in Washington State**, Malcolm Ray and Christine Carrigan, *RoadSafe, LLC*

## TRACK D: PLANNING, DEVELOPMENT & SUSTAINABILITY

### MONDAY, July 16

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

#### Smart Cities

**Moderator:** John Harvey, University of California at Davis

**Planning for Autonomous Vehicles in the Smart City – Addressing Problems and Promise,** Holly Buck and Rachel Ackermann, *Felsburg Holt & Ullevig*

**Mobility as a Service – A Platform for Future Rural Mobility,** Kakan Dey and Md Tawhidur Rahman, *West Virginia University*

**Radical Traffic Engineering: How to Combat Impacts of Vehicle-Centric Design,** David DiGioia and Gary McNaughton, *McMahon Associates, Inc.*

**Sensing, Visualizing, Understanding, and Enhancing the Last Mile of Urban and Metropolitan Freight,** Vivek Sakhrani, *CPCS Transcom*

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

#### Planning for Sustainability

**Moderator:** Katherine Kortum, *Transportation Research Board*

**Making a Difference in Transportation with INVEST,** Constance Galloway, *Federal Highway Administration*

**Pervious Pavement Use for Effective Design – An Environmental Solution that Can Provide Reduced Costs and Project Footprints,** Josh Lockhart, *Crawford, Murphy & Tilly, Inc.*

**Comparative Assessment of Vehicle Emissions Performance Across States: Time Series Evidence from Pennsylvania and Colorado Testing Programs,** H. Scott Matthews and Prithvi Acharya, *Carnegie Mellon University*

**Fuel Consumption and Greenhouse Gas Emissions from On-road Vehicles on Highway Construction Work Zones,** John Harvey, Ali Butt, Maryam Ostovar, and Changmo Kim, *University of California Davis*

**Evaluating the Feasibility of Imposing Restriction on the Use of Older Vehicles,** Praveena Penmetsa, *University of Alabama, Tuscaloosa;* Srinivas Pulugurtha, and Venkata Duddu, *University of North Carolina at Charlotte*

### TUESDAY, July 17

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

#### Transportation & Land Use Planning

**Moderator:** John Harvey, University of California at Davis

**Designing the Built Environment for Resiliency through Integration of New Mobility Systems,** Shannon Sanders McDonald, *Southern Illinois University*

**Travel Time Based Performance Measures to Assess the Effect of Crashes by Severity,** Srinivas Pulugurtha and Synthia Tagar, *University of North Carolina at Charlotte*

**Lessons Learned from Modeling the Evacuation of a Suburban University Campus,** Ryan Fries, Karna Ghale, and Yan Qi, *Southern Illinois University Edwardsville;* Bryan Dirks, *U.S. Army Corps of Engineers*

**Effect of Land Use Developments on Travel Time Reliability,** Srinivas Pulugurtha and Ajinkya Mane, *University of North Carolina at Charlotte*

**Housing Location and Commuting Mode Choices of University Students and Employees: An Application of Bivariate Probit Models,** Naznin Sultana Daisy, Mohammad Hesam Hafezi, and Lei Liu, *Dalhousie University;* Hugh Millward, *Saint Mary's University*



**TRACK D: PLANNING, DEVELOPMENT & SUSTAINABILITY** *(continued)*

**TUESDAY, July 17** *(continued)*

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

**Impact Assessment: From Vehicle Automation to Complete Streets**

**Moderator:** John Harvey, *University of California Davis*

**Infrastructure and Policy Framework for Environmental Justice Assessment of Vehicle Automation**, Allanté Whitmore and Constantine Samaras, *Carnegie Mellon University*

**Using On-Road Data to Evaluate Fuel Efficiency Impacts from Vehicle Automation: A Case Study Using Adaptive Cruise Control Data from Volvo Car Corporation and Planned Extension to the Drive Me Project**, Lei Zhu, NREL; Jeff Gonder, NREL; Eric Björkvik, *Björn Lindenbergh*, Florian Fuerer, *Mitra Pourabdollah*, and Klaas Burgdorf, *Volvo Car Corporation*

**A Life Cycle Assessment Framework for Complete Streets**, John Harvey, Alissa Kendall, Ali A. Butt, Arash Saboori, Maryam Ostovar, Jesus Hernandez, and Bruce Haynes, *University of California Davis*

**Optimized Hydrogen Infrastructure Planning Using the Scenario Evaluation and Regional Analysis Model**, Chad Hunter, Brian Bush, Michael Penev, and Melaina Marc, *NREL*

**Environmental Impacts of Delivery by Ground Robots and Drones in Cities**, Constantine Samaras, *Carnegie Mellon University*

**WEDNESDAY, July 18**

8:30 a.m. - 10:00 a.m. **Concurrent Technical Session 5, Benedum**

**Bikes & Pedestrians**

**Moderator:** Katherine Kortum, *Transportation Research Board*

**Ride Quality for Bicycle Paths under Different Pavement Conditions**, Hans De Backer, Pieter De Winne, Sarmad Zaman Rajper, and Zain Ul Abdin, *Ghent University*

**Measuring Pedestrian Crossing Compliance Rate at High Pedestrian Crash Locations**, Osama Abaza and Mahmoud Arafat, *University of Alaska at Anchorage*

**Pedestrian Perception in Pathway Facilities Improvement**, Andyka Kusuma and Tri Tjahjono, *Universitas Indonesia*

10:30 a.m. - 12:00 p.m. **Concurrent Technical Session 6, Benedum**

**Sustainability Evaluation and Assessment**

**Moderator:** Katherine Kortum, *Transportation Research Board*

**Geologic Risk and Underground Construction**, Priscilla Nelson, *Colorado School of Mines*

**Undergraduate Courses and Senior Year Track on Sustainability in Civil Engineering**, Panos Prevedourous and Lambros K. Mitropoulos, *University of Hawaii at Manoa*

**Economic Assessment of the Use of Renewable Fuels in a Passenger Car**, Jérémy Rimbon, Wolf Fichtner, Frank Schultmann, Rimbon Rimbon, and David Hechler, *French-German Institute for Environmental Research*

**Evaluating the Resilience of Transportation Infrastructures to Extreme Weather Events using Soil-Moisture Active Passive Satellite Data**, Simon Packman, Sonya Lopez, and Mehran Mazari, *California State University Los Angeles*

**Metrics and Methods for Assessing Resilience Impacts from Integrated Above- and Below-Ground Urban Infrastructure**, Priscilla Nelson, *Colorado School of Mines*

## TRACK E: RAIL & PUBLIC TRANSIT

### MONDAY, July 16

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

#### **Broad Impacts Resulting from Transit Related Automation**

**Moderator:** Matthew Lesh, *Mobility e3*

**Global Trends in Urban Metro Automation,** Andrew Bata, *UITP International Association of Public Transport*

**Constraints, Progress, and Impacts on Growth of Modernizing New York's MTA System,** Robert Passwell, *City College of New York*

**Self-Driving, Automated Shuttle Buses: Impacts on Transit,** Koorosh Olyai, *Stantec*

**Electric Vehicle Fast-Charging Infrastructure: Challenges and Opportunities for Transportation Professionals,** Eva Lerner Lam, *Palisades Consulting Group*

**Shenzhen, China's Autonomous Bus Demonstration Project,** Song Jiahua, *Shenzhen Urban Transportation Planning and Research Center*

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

#### **Automated Personal Rapid Transit and People Movers: Existing Trends and Characteristics**

**Moderator:** Walter Kulyk, *Federal Transit Administration (Ret.)*

**Utilizing Purpose-Built, Shared-Use Autonomous Vehicles to Increase Multimodal Connections and Transit Use For New Forms of Mobility,** Mathew Lesh, *Mobility e3*

**Personal Rapid Transit as an Alternative to Bus Service in Two Communities,** Peter Muller, *ATRA*

**Automated People Movers and Automated Transit Systems: The Pitfalls of Mitigating Safety Hazards with Procedures,** Dennis Hinich, *Lea+Elliot*

**Airport Development with Automated People Mover Systems,** William Sproule, *Michigan Technological University*

### TUESDAY, July 17

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

#### **Impacts of Rail Transportation Systems**

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

**A Light Rail, Group Rapid Transit, Personal Rapid Transit Comparison,** Peter Muller, *ATRA*

**Converting Existing Rail Lines into Driverless Operation,** Steve Lucchino and Nigel Wright, *Bombardier*

**Using Isochrone Maps to Assess and Visualize the Impact of California's High Speed Rail on Regional Accessibility,** Juan Alejandro and Aly Tawfik, *California State University, Fresno*

**Leveraging Shared Autonomous Electric Vehicles for First/Last Mile Mobility,** Donna Chen, T. Zhang, and Javed Farhan, *University of Virginia*



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

### TUESDAY, July 17 (continued)

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

#### Recent Developments in Advanced Bus Transit Systems

**Moderator:** Ria Kontou, *National Renewable Energy Laboratory*

**Revolutionizing Transit: EV Bus Deployment Programs and Outcomes**, Lauren Cochran, *Proterra Inc.*

**Battery Electric Buses Proposed for Pittsburgh**, David Wohlwill, *Port Authority of Allegheny County*

**Converting BRT to LRT : Recent Developments and Lessons Learned**, Cliff Henke, *WSP*

**Right Sizing Infrastructure Projects: Mobility as a Service**, Christopher Garlick, *Toll Transactions*

**Redefining the Service Level Benchmarking for Public Transport System in India**, Rahul Tiwari and Kshama Puntambekar, *School of Planning and Architecture, Bhopal*; Purnima Parida, *Central Building Research Institute Roorkee, India*

### WEDNESDAY, July 18

8:30 a.m. - 10:00 a.m. **Concurrent Technical Session 5, Duquesne**

#### Challenges of Rail Transportation Systems

**Moderator:** Walter Kulyk, *Federal Transit Administration (Ret.)*

**Overall Challenges in Planning, Designing and Installing Driverless Rail Systems**, Steve Lucchino and Nigel Wright, *Bombardier*

**Modeling Evolution of Freight Transportation as a System-of-Systems to Determine Adoption of Emerging Vehicle Technologies**, Ana Guerrero de la Pena, Navindran Davendralingam, Ali Raz, Daniel DeLaurentis, Gregory Shaver, and Neera Jain, *Purdue University*

**Adapting Freight Rail Services to Address Advanced Technologies and Supply Chain Challenges**, David Clarke, *The University of Tennessee*

**Virtual 3D Surface Model at Sub-MM Resolution of Full-Width Rail Structure and Potential Applications**, Kelvin C.P. Wang, *Oklahoma State University*

10:30 a.m. - 12:00 p.m. **Concurrent Technical Session 6, Duquesne**

#### Transit Ride Sharing, Parking, and Passenger Systems

**Moderator:** Donna Chen, *University of Virginia*

**Focusing on the As-Built Environment to Properly Design Integrated Transit Ride Sharing Services and Systems**, Shannon Sanders McDonald, *Southern Illinois University*

**Impact of Ride-Sharing and Autonomy on Urban Mobility Behavior and Vehicle Stock**, Suhrid Deshmukh and Rich Roth, *MIT*

**Exploring the Economic, Environmental, and Travel Implications of Changes in Parking Choices Due to Driverless Vehicles**, Corey Harper, *Booz Allen Hamilton*; Chris Hendrickson and Constantine Samaras, *Carnegie Mellon University*

**Estimation of Origin-Destination Matrix Using Public Transit Smart Card Transaction Data**, Wei Fan and Zhen Chen, *University of North Carolina at Charlotte*

**Investigating Average Passenger Wait Time and Wait Time Behavior as a Function in Bus Line Headway**, Kelvin Akataobi and Aly Tawfik, *California State University*

## TRACK F: AIRPORTS & INFRASTRUCTURE SYSTEMS

### MONDAY, July 16

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

#### Enhanced Infrastructure Systems Management

**Moderator:** Brian McKeehan, *Gresham, Smith & Partners*

**Influence of Aggregate Geometric Features on Permanent Deformation of Asphalt Mixture Based on Image Processing and Data Mining,** Qiao Dong, Jiwang Jiang, Song Li, Fujian Ni, Zili Zhao, and Hao Wu, *Southeast University*

**Investigating the Heat Generation Efficiency of Electrically-Conductive Asphalt Mastic Using Infrared Thermal Imaging,** Ali Arabzadeh, Halil Ceylan, Sunghwan Kim, Alireza Sassani, and Kasthurirangan Gopalakrishnan, *Iowa State University*

**Characterization of 3D Aggregates Using Laser Triangulation,** Qiang Joshua Li, Guangwei Yang, You Zhan, and Kelvin C.P. Wang, *Oklahoma State University*; Dominique M. Pittenger, *University of Oklahoma*

**Data Driven Predictive Analytics for Bridge Asset Management,** Avinash Prasad, *New York City Transit Authority*; Purnima Prasad, *NYU-Tandon School of Engineering*

**Comprehensive Cost-Benefit Evaluation Method for Underground Utility Tunnel Construction Incorporating Road User Cost,** Chengbo Ai, *University of Massachusetts Amherst*; Shi Qiu, Junfeng Li, Zhengde Huang, and Zhonghua Wei, *Beijing University of Technology*; Bo Xue, *Global Data Communication*

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

#### Sensor Technologies in Infrastructure Systems Management

**Moderator:** Diniece Peters, *NYC DOT*

**Implementation of Intelligent Transportation Systems in Developing Cities – A Case Study of Lagos, Nigeria,** Simisola Elegba, *Lagos Metropolitan Area Transport Authority LAMATA*

**A Multi-Sensor Solution for Large-Scale Parking Space Detection,** Ruimin Ke, Yifan Zhuang, and Yin Hai Wang, *University of Washington*

**Piezoelectric Unit in Pavement for Energy Harvesting and Wheel Track Monitoring in the Age of Autonomous Vehicles,** Hongduo Zhao and Zhongpu Lin, *Tongji University*

**In-Pavement Fiber Bragg Grating Sensor for Vehicle Classification,** Muath Al-Tarawneh and Ying Huang, *North Dakota State University*

**Freeway Traffic Safety and Efficiency Enhancement through Adaptive Roadway Lighting and Control Enabled by Connected Sensor and Infrastructure Networks,** John E. Ash, Ziqiang Zeng, and Yin Hai Wang, *University of Washington*; Yunyi Liang, *Tongji University*; Ted Bailey, *Washington State Department of Transportation*

### TUESDAY, July 17

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

#### Airside Planning

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

**End-Around Taxiways – A Win-Win-Win: Reduced Aircraft Delays, Increased Safety, and Reduced Emissions,** William Dunlay, *WJDunlay Consulting, LLC*; Hui Xu, *The Port Authority of NY & NJ*

**State of Use of New Technologies for Global Airport Airside Development and Operation,** Vivek Khanna, *WSP*; Amiy Varma, *North Dakota State University*

**Airport Collaborative Decision Making in the United States – Is It Achievable?** Chris Oswald, *ACHNA*

**Technological Advances for Sustainable Development through Assessing Passenger Airline On-Time Performance in Developing Countries – A Case of Botswana,** Adwole Oladele, *Botswana International University of Science and Technology*



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

**TUESDAY, July 17** *(continued)*

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

**Airport Terminal and Landside Planning**

**Moderator:** Daniel Barton, *InterVISTAS*

**State of Use of New Technologies for Global Airport Terminal Development and Operation**, Amiy Varma, *North Dakota State University*; Vivek Khanna, *WSP*

**Billion Dollar Improvements at DCA: The New North Concourse and Secure National Hall**, Gregg Wollard, *Metropolitan Washington Airport Authority (MWAA)*

**Evaluating LAX Landside Planning and Constructability using BIM**, Rodomir Lazic, *WSP*

**Assigning Values to Air Passenger Time Savings in Airport Terminal and Landside Projects**, Geoff Gosling, *Aviation System Consulting, LLC*

**WEDNESDAY, July 18**

8:30 a.m. - 10:00 a.m. **Concurrent Technical Session 5, Birmingham**

**Innovative Techniques for Infrastructure Resiliency**

**Moderator:** Qiang (Joshua) Li, *Oklahoma State University*

**5D Project Management Strategies for Complex Projects (SHRP2: R10): Lessons Learned!** Majed Al-Ghandour, *North Carolina DOT*

**Failure Probability Prediction of Pavement Alligator Cracking through Bayesian Parametric Survival Analysis with Markov Chain Monte Carlo Simulation**, Xueqin Chen, *Tongji University*; Qiao Dong, *Southeast University*

**Development of Low-Shrinkage Rapid Set Composite and Simulation of Shrinkage Distress in Concrete Patch Repair**, Aseel Mansi, Haider Abdulhameed, and Yook-Kong Yong, *Rutgers University*

**Frost Heave Mitigation without Excavation and Minimal Traffic Disruption**, Ron Youngman and Roy Mathis, *Concrete Stabilization Technologies*

**Damage Detection for Load Rating Verification**, Levi Nelson and Carlos A. Gamez, *Metal Fatigue Solutions*

10:30 a.m. - 12:00 p.m. **Concurrent Technical Session 6, Birmingham**

**Pittsburgh International Airport Program**

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

**Description:** This session is designed to provide background and preview to the participants of the Pittsburgh Airport tour. Attendees not participating in the airport tour are welcome to attend.

**Pittsburgh International Airport Modernization**, Tom Woodrow, *Allegheny County Airport Authority*

**Pittsburgh International Airport Deicing Pad Reconstruction**, Jeff Bezak, *Allegheny County Airport Authority*

## TRACK G: TRAFFIC & FREIGHT OPERATIONS

### MONDAY, July 16

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

#### Regional Traffic Congestion

**Moderator:** Majed Al-Ghandour, *NCDOT*

**Developing a Systematic Approach to Improving Bottleneck Analysis in North Carolina,** Wei Fan, *University of North Carolina at Charlotte*

**Traffic Congestion Patterns Recognition – A Deep Learning Approach Using Convolutional Neural Networks,** Jidong Yang, Betty Kretlow, Tien Yee, and M.A. Karim, *Kennesaw State University*

**Quantifying Freeway Performance Measures using Multi-Source Traffic Data,** Yao-Jan Wu and Robert Kluger, *University of Louisville*

**Improving Freeway Operation with Ramp Metering Control using Connected Vehicles as “Floating Sensors,”** Heng Wei and Ting Zuo, *University of Cincinnati*; Zhixia Li, *University of Louisville*; Hao Liu, *The University of California at Berkeley*

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

#### Innovative Traffic and Pavement Performance Measures

**Moderator:** Panos Prevedouras, *University of Hawaii at Manoa*

**Data-Driven Approach for Traffic Signal Performance Measurement and Improvement,** Yao-Jan Wu and Robert Kluger, *University of Arizona*

**What Statistics Suggests about Required Runs for Simulating Signalized Intersection Delays,** Ryan Fries, Reza Salehi, and Yasaman Panjebandpour, *Southern Illinois University Edwardsville*

**High Accuracy Achieved in Determining Lengths and Locations of Horizontal Curves Using Light Detection and Ranging Point Cloud Data,** Mitsuru Saito, Grant Schultz, and Joseph Browning, *Brigham Young University*

**A Spatial Pavement Roughness Evaluation Method Based on Automated Vehicle Driving Comfort,** Hongduo Zhao, Difei Wu, and Mengyuan Zeng, *Tongji University*

### TUESDAY, July 17

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

#### Impact of Railroad Crossings, Pedestrian Behavior, and Road Construction

**Moderator:** Srikanth Panguluri, *CH2M*

**Railroad Preemption Under Traditional and Autonomous Vehicle Environments,** Amiy Varma and Sharijad Hasan, *North Dakota State University*

**Evaluation of Pedestrian Gap Acceptance Behaviour at Uncontrolled Road Sections under Mixed Traffic Condition,** Madhumita Paul, Indrajit Ghosh, and Pabitra Rajbongshi, *Indian Institute of Technology (IIT) Roorkee*

**Effect of Road Construction Projects on Travel Time Reliability,** Srinivas Pulugurtha and Venu Madhav Kukkapalli, *University of North Carolina at Charlotte*

**Transportation Maintenance Operations Workforce Development; Challenges, Opportunities and Solutions,** Dave Bergner, *Monte Vista Associates*





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

### TUESDAY, July 17 *(continued)*

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

#### Technology Applications for Airport Pavements

**Moderator:** Rick Boudreau, *Boudreau Engineering, Inc.*

**Use and Impact of Pavement Performance in Airfield Asset Management Strategy,** Cinzia Maggiore and Gary Fitch, *Jacobs*

**Automated PCI Data Collection at Airports (Drones),** Chaim Van Prooyen, *Hartsfield-Jackson Atlanta International Airport (ATL)*

**Use of Aircraft Turn Movement Simulation Models to Optimize Taxiway Reconstruction Phasing,** Richard Thuma and J. Huntley, *Crawford, Murphy & Tilly, Inc.*

**Airfield Pavement Condition Assessments using Geocentric, High Resolution 3D Digital Imagery, and Mobile LiDAR,** Kurt Keifer, *Gorrdona & Associates, Inc.*

### WEDNESDAY, July 18

8:30 a.m. - 10:00 a.m. **Concurrent Technical Session 5, Ft. Pitt**

#### Freight Transportation Management and Data Innovations

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

**Investigating the Effects of Reserved Lanes for Commercial Truck Platooning on Congestion: Pennsylvania Turnpike Case Study,** Corey Harper, *Booz Allen Hamilton*; Chris Hendrickson and Constantine Samaras, *Carnegie Mellon University*

**Managing Reversible Lanes with Truck Arrival Information to Alleviate Gate Congestion at Smart Container Terminals,** Yong Zhou and Ying-en Ge, *Shanghai Maritime University*

**Data-Driven Innovations in a Regional Freight Planning Model: Accounting for Heterogeneous Stakeholders' Preferences,** Dan Liu and Yinhai Wang, *University of Washington*

**The Role of Modern Ports in the National Economic Development: An Application to Iran and the Port of Bandar Abbas,** Cesar Queiroz, *World Bank*; Marzieh Nazemzadeh, *Ministry of Road and Urbanization, Iran*

**Potential for Crowdshipping in New York,** Alison Conway and Mahdieh Allahviranloo, *City College of New York*

10:30 a.m. - 12:00 p.m. **Concurrent Technical Session 6, Ft. Pitt**

#### Intersections, Roundabouts, and Big Data

**Moderator:** Majed Al-Ghandour, *NCDOT*

**Alum Creek Drive at Groveport Road – Flyover Bridge with Double Roundabouts,** William Crosier, *Franklin County Engineer's Office*

**Influence of Signal Countdown Timers on Pedestrian Movements at Signalized Intersections,** Madhumita Paul, Indrajit Ghosh, and Sumit Kumar, *Indian Institute of Technology (IIT) Roorkee*

**Big Data for STIP Management,** Majed N. Al-Ghandour, *NCDOT*; Evangelous Kaiser, *Florida Atlantic University*

## TRACK H: HIGHWAY & AIRFIELD PAVEMENTS

### MONDAY, July 16

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

#### Airport Pavement Testing and Evaluation

**Moderator:** Tim Ward, *HDR, Inc.*

**Full-Scale Tests of Aircraft Overloads on Airport Flexible Pavements**, David Brill, *Federal Aviation Administration*; Hao Yin, *Gemini Technologies, Inc.*

**Implementing Advanced Wireless Sensing System for Airfield Pavement Condition Monitoring**, Shuo Yang, Halil Ceylan, Sunghwan Kim, and Hesham Abdulla, *Iowa State University*

**Incorporation of Reliability into Airport Pavement Design Using Variation of Backcalculated Modulus**, Richard Ji, *Federal Aviation Administration*; Biqing Sheng, *CSRA*

**Development of Artificial Neural Network Based Predictive Models for Dynamic Modulus of Airfield Pavement Asphalt Mixtures**, Orhan Kaya, Halil Ceylan, and Sunghwan Kim, *Iowa State University*; Navneet Garg, *Federal Aviation Administration*

**Estimation of Service Life for Airfield Pavements using Survival Analysis**, Jeffrey Gagnon, Qingge Jia, and Richard Ji, *Federal Aviation Administration*; Zilong Wang and Hao Yin, *Gemini Technologies, Inc.*

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

#### Case Studies of Airfield Construction

**Moderator:** Quintin Watkins, *Michael Baker International*

**From Military to Cargo – Reconstruction of Taxiways at Rickenbacker International**, Benjamin Cooley and Greg Heaton, *Crawford Murphy & Tilly Inc.*

**The Impact of Temporary Construction Ramps on Aircraft Dynamic Response**, Michael Gerardi, *APR Consultants Inc.*

**Design and Restruction of Barranquilla Airport's Concrete Runway using Rubberized Asphalt and Geogrid Fabric with Nighttime Overlay Construction**, Xavier Munoz, *Grupo Aeroportuario del Caribe SAS*

**Planning and Engineering the Reconstruction of DFW International Airport Runway 17C-35C**, George Vittas, *George Vittas and Associates*; James Pantina, *DFW International Airport*

### TUESDAY, July 17

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

#### Airport Construction Materials & New Technologies

**Moderator:** Ernie Heymsfield, *University of Arkansas*

**Using Cellular Glass Foam as an EMAS Material**, Ernie Heymsfield, *University of Arkansas*

**Next Generation Backfill Technologies for Rapid Airfield Pavement Repair**, Mariely Mejias, Lulu Edwards, and Lyan Garcia, *U.S. Army Corps of Engineers*

**Application of Beam Bridging Filter in the Processing of Airport Pavement Profile Data**, Qiang Wang, *CSRA Inc.*; Albert Larkin, *Federal Aviation Administration*

**Hydronic Heated Pavement System Using Precast Concrete Pavement**, Hesham Abdulla, Halil Ceylan, Sunghwan Kim, Peter Taylor, Kasthurirangan Gopalakrishnan, and Kristen Cetin, *Iowa State University*



## TRACK H: HIGHWAY & AIRFIELD PAVEMENTS (continued)

**TUESDAY, July 17** (continued)

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

### Advancement in Cement and Concrete Materials

**Moderator:** Julie Marie Vandenbossche, *University of Pittsburgh*

**Impact of Coarse Aggregate Mineralogy on Coefficient of Thermal Expansion of Paving Concrete in New Mexico,** Gauhar Sabih and Rafiqul Tarefder, *University of New Mexico*

**Evaluation of Microcracking on Soil Cement Pavements,** Zhong Wu and Yilong Liu, *Louisiana Transportation Research Center (LTRC); Ferdous Intaj, Louisiana State University*

**Characterization of the Moisture Susceptibility of Cement-Stabilized Base Materials Using the Tube Suction Test,** Mohammad Rashidi and Reza Ashtiani, *The University of Texas at El Paso*

**An Introduction to Cellular Concrete (under 50 lbs/ft<sup>3</sup>) and Advanced Engineered Foam Technologies,** Nico Sutmoller, *Aerix Industries*

**Flexural Behavior of Rubberized Concrete for Application in Cold Regions,** Osama Abaza, *University of Alaska at Anchorage; Zaid Hussein, IDOWL*

**WEDNESDAY, July 18**

8:30 a.m. - 10:00 a.m. **Concurrent Technical Session 5, Smithfield**

### Advanced Analysis and Application

**Moderator:** Emin Kutay, *Michigan State University*

**Modeling and Validation of Asphalt Concrete Behavior in a Finite Element Framework,** A. S. M. Rahman, Mesbah Ahmed, and Rafiqul Tarefder, *The University of New Mexico*

**Factors Affecting the Compactability and Stability of Asphalt Concrete Mixes Containing High RAP Contents and WMA Technologies,** Mohammed Alsalihi and Ahmed Faheem, *Temple University*

**Effects of Pores and Oxidative Aging on the Nanomechanical Behavior of Asphalt Concrete,** Hasan Faisal, Mohiuddin Ahmad, and Rafiqul Tarefder, *University of New Mexico*

**Part-Time Shoulder Use Partial Depth Paved Shoulder Impact Study: An Interstate 476 Case Study,** Sean Coffey, Seri Park, and Leslie McCarthy, *Villanova University*

**Assessment and Calibration of Simplified Hirsch Model to Predict Complex Modulus of Superpave Asphalt Concrete,** A. S. M. Rahman, and Rafiqul Tarefder, *The University of New Mexico*

10:30 a.m. - 12:00 p.m. **Concurrent Technical Session 6, Smithfield**

### Impacts on Performance of Pavements

**Moderator:** Mehran Mazari, *California State University Los Angeles*

**Impact of Geogrids on Highway Pavement Performance,** Mark Wayne, *Tensar International; Jayhyun Kwon, Kennesaw State University*

**Geospatial Correlation of Intelligent Compaction Measurement Values With In-Situ Spot Testing for Quality Management of Compacted Geomaterials,** Luis Lemus and Aria Fathi, *The University of Texas at El Paso; Afshin Gholamy, Cesar Tirado, and Soheil Nazarian, Center of Transportation of Infrastructure System (CTIS), The University of Texas at El Paso; Mehran Mazari, California State University Los Angeles*

**Performance Evaluation of the Cement Stabilized Reclaimed Materials for Use in Pavement Foundations,** Mohammad Rashidi and Reza Ashtiani, *The University of Texas at El Paso*

**Investigating the Prospect of Reclaimed Asphalt Pavement (RAP) as Stabilized Base in the Context of Bangladesh,** Mohammed Islam and Md Tasfiqur Rahman, *Military Institute of Science and Technology; Mohammad Hossain, Bradley University*



## Are you looking for a way to be more engaged at ICTD2018?

Join the conversation by following T&DI on Twitter @ASCE\_TDI and use #ICTD18!

### Social Media Contest

Post on Twitter using the conference hashtag #ICTD18. All #ICTD18 tags will be entered into a drawing, and a winner will be randomly chosen. The prize will be an emailed gift card, post-conference. Winner must be a registered attendee of ICTD 2019.

Some ideas for post entries include:

- **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 Pittsburgh selfie!**



## Poster Schedule

Posters will be on display in the exhibit hall:

**Sunday, July 15** | 6:00 - 7:30 p.m.

**Monday, July 16** | 7:30 a.m. - 3:30 p.m.

**Tuesday, July 17** | 7:30 a.m. - 3:30 p.m.

## Poster Topics

**Connected & Autonomous Vehicles (CAVs)**

**Emerging Technologies for Transportation & Development**

**Big Data for Transportation Analytics**

**Transportation Safety**

**Traffic & Travel Behavior**

**Rail & Public Transit**

**Infrastructure Systems**

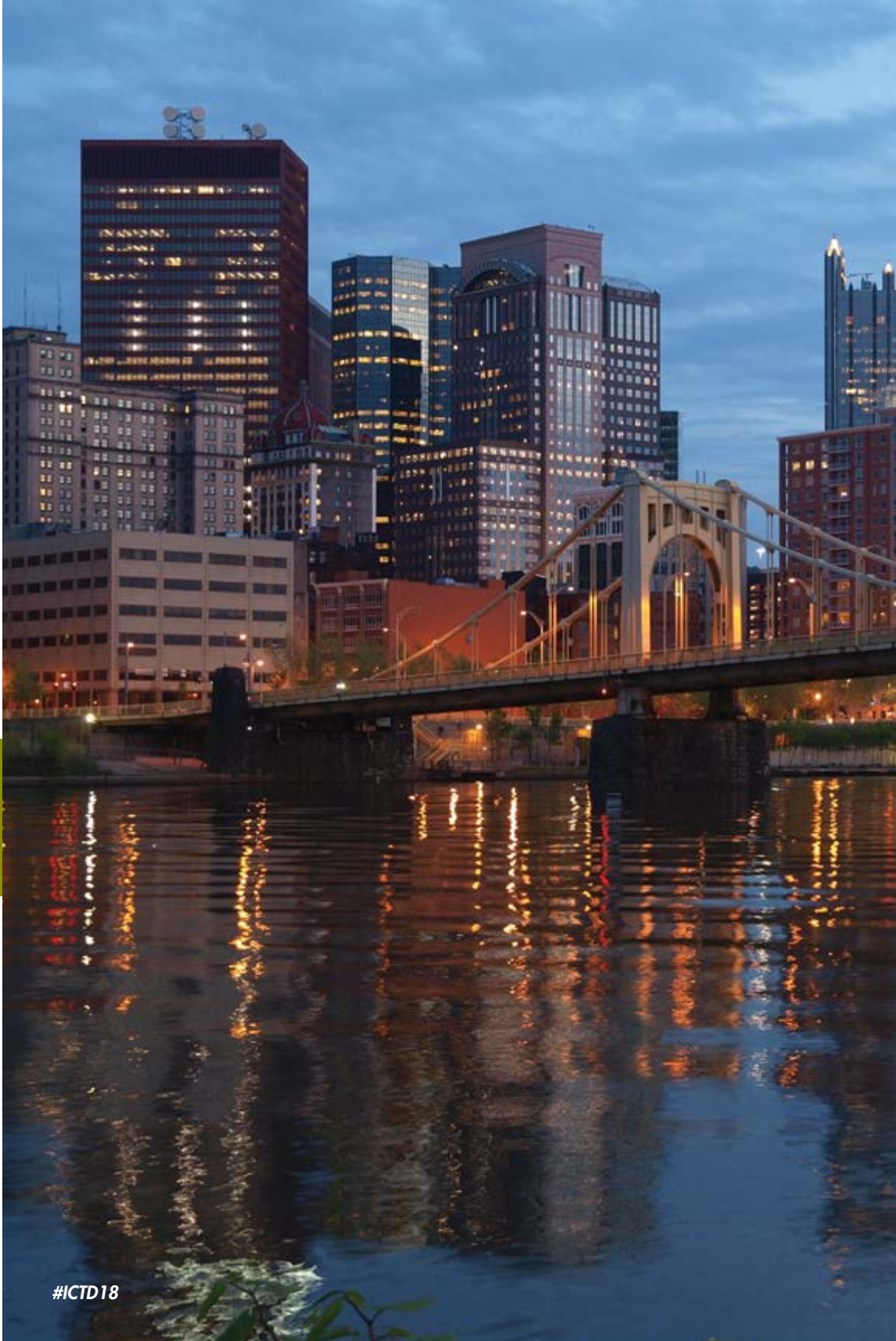
**Sustainability & Land Use**

**Highway Pavements**

## Best Poster Award

During the ICTD 2018 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 during the Awards Banquet.

*Details available in the Younger Members Events tab.*



## Connected & Autonomous Vehicles (CAVs)

**Automated Longitudinal Vehicle Following Control Considering Minimization of Fuel Consumption and Emissions**, Lihua Luo and Ying-en Ge, *Shanghai Maritime University*

**Quantifying the Mobility and Energy Benefits of Automated Mobility Districts Using Microscopic Traffic Simulation**, Lei Zhu, Stanley Young, Venu Garikapati, and Yi Hou, *NREL*; Yuhe Chen, *Vanderbilt University*; H M Abdul Aziz, *Oak Ridge National Laboratory*

**Optimal Placement of Roadside Equipment in a Connected Vehicle Environment for Incident Management**, Jalil Kianfar, *Saint Louis University*

**Delay Bound Analysis for Vehicular Adhoc Networks at Signalized Intersections**, Yunyi Liang, *Tongji University*; Mayuree Binjolkar, Yinhai Wang, and Zhiyong Cui, *University of Washington*

**Data Driven Formulation for Addressing Risk in Autonomous Vehicles**, Sandeep Mudigonda and Rodrigue Tchamna, *UTRC*; Camille Kanga, *UTRC / CUNY*; Dan Wan, *City College of New York*

**Impact of Autonomous Vehicles on Electric Vehicle Charging Infrastructure**, Avi C. Mersy and Constantine Samaras, *Carnegie Mellon University*

**A Method to Reduce the Real-Time Traffic Environment by Combining Low Penetration Data and Loop Detector Data**, Ruochen Hao, Wanjing Ma, and Xinzhou Qi, *Tongji University*

**Vehicular Networks Communication Analysis and Speed Guidance at Signalized Intersections**, Kaizhe Hou and Jianming Hu, *Tsinghua University*

## Emerging Technologies for Transportation & Development

**An Extensive Investigation on Eco-approaching Controller Under Partially Connected and Automated Vehicle Environment**, Huifu Jiang and Shi An, *Harbin Institute of Technology*; Jia Hu, *Tongji University*; Byungkyu Park, *University of Virginia*; Meng Wang, *Delft University of Technology*

**In-Pavement Fiber Bragg Grating Sensor for Vehicle Classification**, Muath Al-Tarawneh and Ying Huang, *North Dakota State University*

**Evaluation of Techniques based on Vehicle-to-Infrastructure Communication to Optimize Traffic Flow after a Freeway Incident**, Gopindra Sivakumar Nair and Chandra R. Bhat, *The University of Texas at Austin*; Natalia Ruiz Juri, *Center for Transportation Research*

**The Relationship Between For-Hire Service Pick-Ups and Built Environment Characteristics: Evidence from New York City**, Jina Mahmoudi and Lei Zhang, *University of Maryland*

**Reliability Based Design Optimization of a MASH TL-3 Concrete Barrier**, Erica Jarosch and Qian Wang, *Manhattan College*; Hongbing Fang, *The University of North Carolina at Charlotte*; Hanfeng Yin, *Hunan University*

**Traffic Service of Tourist Route Based on Mobile Internet**, Qinglu Ma, *Chongqing Jiaotong University*

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## Pittsburgh International Airport Tour

Wednesday, July 18 | 1:30 – 5:00 p.m.

The Pittsburgh International Airport Tour will include two parts. All airport tour participants will see both segments of the airport.

**Part I – Land Development and Natural Gas Development.** The group will view the land development completed on Airport property since 2004 including the Clinton Industrial Park and Cherrington Commerce Park, both of which are built and occupied by new office and flex space buildings. The group will also view the Marcellus Shale natural gas drilling activity on Airport property and visit the active well pads.

**Part II – Cargo #3 Ramp and Deicing Pad “C” Replacement.** The group will view a 2.5 acre concrete ramp expansion and 500’ extension of

a taxiway at the Cargo #3 Ramp. The project included concrete and bituminous paving, a 1.6 acre underground stormwater detention facility, and airfield lighting and signage upgrades. The group will also view the active construction of the Deicing Pad “C” replacement, which expands the deicing pad from four to five deicing positions and includes a new deicing collection system, underground stormwater detention, replacement of existing glycol collection tanks and full depth pavement reconstruction.

*The tour will meet in the Wyndham lobby at 1:15pm to board buses. Buses will depart promptly at 1:30pm.*

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

*\*\*Airport Tour Registration closed on June 30.*

## Carnegie Mellon University Laboratories and Pittsburgh Smart Corridor

Wednesday, July 18 | 1:30 – 5:00 p.m.

The Port Authority tour will take attendees on a narrated Light Rail Vehicle trip to the operating facilities at South Hills Village. The tour will include an inside look at the Operations Control Center and maintenance facility. All facilities are ADA accessible. Comfortable walking shoes are highly encouraged, and a provided safety

vest is required to be worn during the facilities tour. The tour guide will be resident historian Chuck Rompala, Assistant Manager of Road Operations.

*The tour will meet in the Wyndham lobby at 1:15pm and walk to the Gateway Station.*

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



## Three Rivers Boat Tour

Wednesday, July 18 | 1:30 – 5:00 p.m.

The best way to see Pittsburgh is aboard a Three Rivers Sightseeing Cruise. Learn about Pittsburgh's past, present, and future from her most perfect point of view – the Three Rivers. The Pittsburgh riverboat tour will begin on the Monongahela River and will continue on both the Allegheny and Ohio Rivers while a technical guide relays interesting facts, and engineering history that makes Pittsburgh and Western Pennsylvania so special. You'll be treated to the view of the lush landscape, towering skyscrapers, and all the amazing sights along the banks of the Allegheny, Ohio, and Monongahela Rivers. Come on down to the river and let us show you Pittsburgh!

*The tour will meet in the Wyndham lobby at 1:15 p.m. and walk to the boat docking station.*

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



## Port Authority Traffic Facility Transit Tour via Light Rail

Wednesday, July 18 | 1:30 – 5:00 p.m.

The Port Authority tour will take attendees on a narrated Light Rail Vehicle trip to the operating facilities at South Hills Village. The tour will include an inside look at the Operations Control Center and maintenance facility. All facilities are ADA accessible. Comfortable walking shoes are highly encouraged, and a provided safety vest is required to be worn during the facilities tour. The tour guide will be resident historian Chuck Rompala, Assistant Manager of Road Operations. Total tour time will be approximately 3 hours.

*The tour will meet in the Wyndham lobby at 1:15 p.m.*

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



Photo by Enlightenedment via Wikimedia

## THANK YOU TO OUR SPONSORS!

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### DIAMOND



Awards Dinner

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### GOLD



Final Program

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### CORPORATE



### SILVER



FIFA World Cup Watching Party



Crawford, Murphy & Tilly

Lanyards

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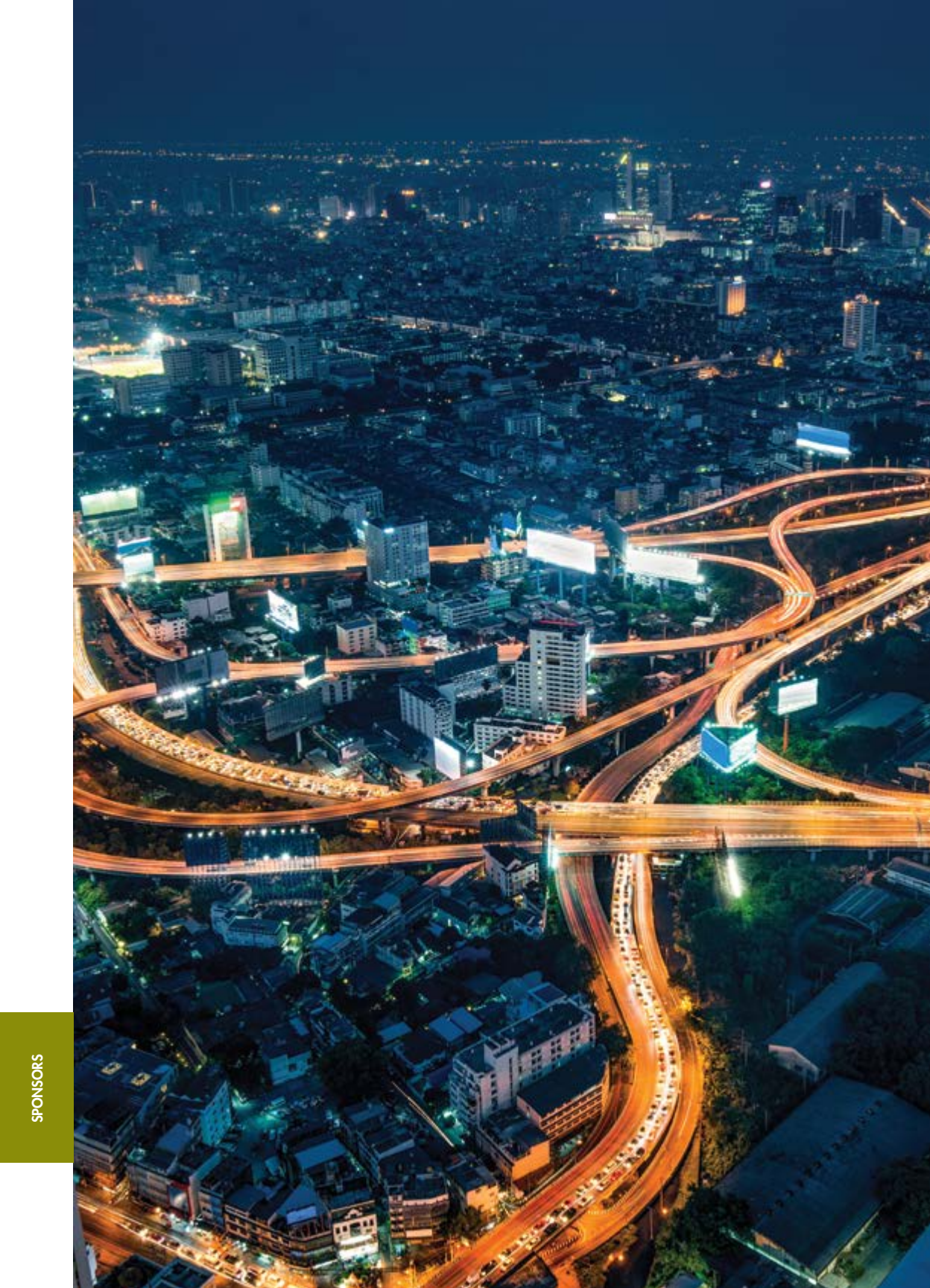
### BRONZE



Networking Break



Networking Break



## **FIFA World Cup Watching Party**

Sunday, July 15 | 11:00 a.m. – 1:00 p.m. | [Ballroom 1](#)

## **TRB AV070 Committee – Aircraft/Airport Compatibility**

Sunday, July 15 | 5:00 – 6:30 p.m. | [Benedum](#)

## **Ice Breaker Reception in Exhibit Hall**

Sunday, July 15 | 6:00 – 7:30 p.m. | [Ballrooms 2-4](#)

## **The ICTD 2018 DIDI Awards Banquet**

Monday, July 16 | 6:00 – 8:00 p.m. | [Ballroom 1](#)

## **T&DI Board of Governors Town Hall**

Tuesday, July 17 | 5:15 – 6:15 p.m. | [Rivers](#)

## **TRB ABJ70 Committee – Artificial Intelligence and Advanced Computing Applications**

*Open to all ICTD 2018 Attendees*

Tuesday, July 17 | 5:15 – 6:45 p.m. | [Brigade](#)

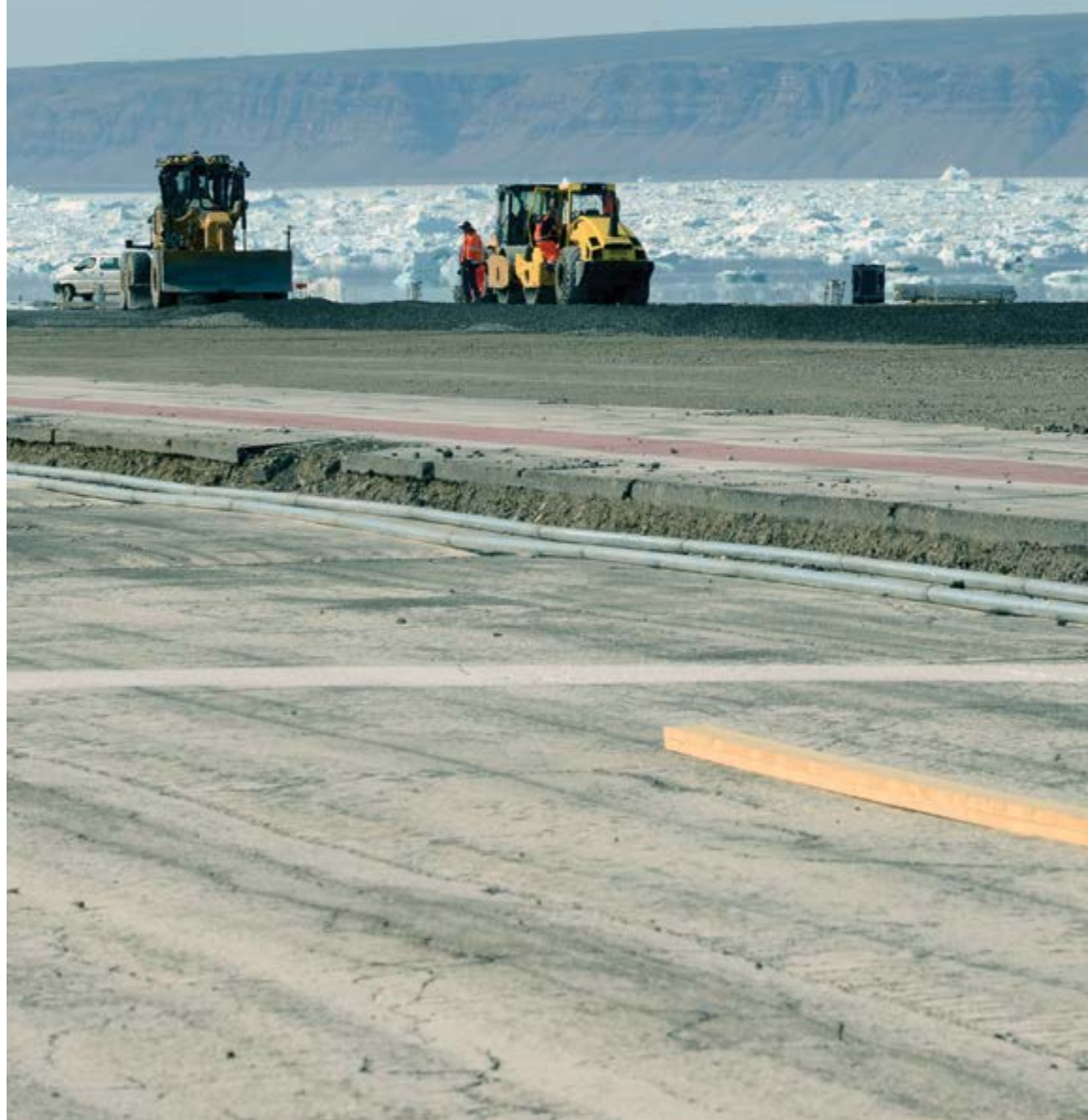
## **Younger Member Events**

### **Three-Minute Pitch**

Tuesday, July 17 | 5:15 – 6:15 p.m. | [Ballroom 1](#)

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

Tuesday, July 17 | 6:30 – 7:30 p.m. | [Ballroom 1](#)



SUNDAY | JULY 15

## FIFA World Cup Watching Party

11:00 a.m. – 1:00 p.m. | [Ballroom 1](#)

Come watch the culmination of the 2018 World Cup! The Final 2018 World Cup Match will be on Sunday, July 15, 2018, from 11:00 a.m. – 1:00 p.m. Bring your own lunch and join fellow ICTD attendees to watch the soccer match on large screens. A cash bar will be available. Then when the match is over, head to one of the many T&D committee meetings or ICTD Workshops offered during the afternoon. Open to all attendees.

**Sponsored by Applied Research Associates**

## TRB AV070 Committee – Aircraft/Airport Compatibility Meeting

*Open to all ICTD 2018 Attendees*

5:00 – 6:30 p.m. | [Benedum](#)

The Transportation Research Board (TRB) AV070 – Aircraft/Airport Compatibility Committee is concerned with the development and application of techniques for analyzing the interface of civil aircraft with the airport and its environs and for providing a basis for decisions concerning design and operations of aircraft and airports that are compatible, integrated, and cost-effective.

## Ice Breaker Reception in Exhibit Hall

6:00 – 7:30 p.m. | [Ballrooms 2-4](#)

Come join us for drinks and hors d'œuvres 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 \$65.



FIFA WORLD CUP  
RUSSIA 2018



MONDAY | JULY 16

## The ICTD 2018 DiDi Awards Banquet

6:00 – 8:00 p.m. | [Ballroom 1](#)

The DiDi Awards Banquet will host several significant events including an overview of DiDi's experience and perspective on mobility as a service, presentation of several prestigious ASCE and T&D awards, and the Francis C. Turner Lecture.



## Francis C. Turner Award & Lecture

**Automation and Artificial Intelligence for Pavement Data Systems, presented by Kelvin C.P. Wang, Ph.D., P.E., M.ASCE**

During the Awards Banquet, Kelvin C.P. Wang, Ph.D., P.E., M.ASCE will receive the 2018 Francis C. Turner Award for his international leadership in the field of transportation engineering research and education, for his outstanding contributions that advance the knowledge and practice of pavement engineering, and for his applications of multidisciplinary advanced technologies.

*The awards banquet is included in the full registration package and Monday daily rate. Additional tickets are available for \$75.*



TUESDAY | JULY 17

## T&D Board of Governors Town Hall

5:15 – 6:15 p.m. | [Rivers](#)

Join the ASCE Transportation & Development Institute (T&D) leadership for a town hall session. This will be an interactive session on the future of transportation and development. Voice your opinions and influence how ASCE can play a role in meeting your professional needs in a rapidly evolving environment. ***This event is included in full registration package and Tuesday daily rate.***

## TRB ABJ70 Committee – Artificial Intelligence and Advanced Computing Applications Meeting

*Open to all ICTD 2018 Attendees*

5:15 – 6:45 p.m. | [Brigade](#)

The scope of the Transportation Research Board (TRB) ABJ70 Committee - Artificial Intelligence and Advanced Computing Applications is to provide a focal point for all forms of artificial intelligence and advanced computing research activities across the various transportation-related disciplines, and to act as a forum for the evaluation and dissemination of information relative to the benefits of the technology to the transportation profession. The ABJ70 Mission is to serve as a technical forum on Artificial Intelligence (AI) and advanced computing solutions for the promotion of research on and their application to transportation problems, for the evaluation of their theoretical and practical merits, and for the dissemination of those solutions that are deemed credible and potentially useful to the transportation community.

## Younger Member Events

### Three-Minute Pitch

5:15 – 6:15 p.m. | [Ballroom 1](#)

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

6:30 - 7:30 p.m. | [Ballroom 1](#)

*For details, see Younger Member Events tab.*



## Three-Minute Pitch

Tuesday, July 17 | 5:15 – 6:15 p.m. | [Ballroom 1](#)

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

Tuesday, July 17 | 6:30 - 7:30 p.m. | [Ballroom 1](#)

## Best Poster Award

## Accessibility Walking Tour

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## YM Committee Co-Chairs

Sean Corcoran, P.E., M.ASCE

Sean Qian, Ph.D., M.ASCE

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**@ASCE\_TDI**

**#ICTD18**

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



## Three-Minute Pitch

Tuesday, July 17 | 5:15 – 6:15 p.m. | [Ballroom 1](#)

The Three-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 three-minute talk session is to promote new technologies, crystallize discoveries, and disseminate innovative 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.

### Judging Criteria

#### Significance

Does the presented work/idea show promise in improving quality of life and social welfare?

#### Comprehension

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

#### Engagement

- Did the oration make the audience want to know more?
- Did the presenter convey enthusiasm for their work/ideas?
- Did the presenter capture and maintain their audience's attention?

#### Communication Style

- Was the thesis 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?

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

Tuesday, July 17 | 6:30 - 7:30 p.m. | [Ballroom 1](#)

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.

# Younger Member Events *(continued)*

## Best Poster Award

During the ICTD 2018 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 during the Awards Banquet.

Who's eligible to compete? Registered ICTD attendees who present throughout the entire poster session and are undergraduate or graduate students by April 30, 2018 or are young professionals under 34 years old by July 31, 2018.

Eligible young professionals and students are automatically enrolled to compete for the poster award.

### Judging Criteria

#### Significance

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

#### 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?

## Accessibility Walking Tour

Tuesday, July 17 | 2:00 – 3:00 p.m. | *Meet at 1:45 p.m. in Sterling 1 (near the hotel lobby entrance)*

See our transportation system from an accessibility perspective. We'll look at how to incorporate accessibility into design, key issues, common pitfalls, and available resources. This moderately-paced tour will cover about 2 miles, so wear comfortable shoes and appropriate clothing.



## Awards Banquet and Turner Lecture

Monday, July 16 | 6:00 – 8:00 p.m. | [Ballroom 1](#)

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

- Francis C. Turner Award & Lecture
- Frank M. Masters Transportation Award
- Harland Bartholomew Award
- Wilbur S. Smith Award
- James Laurie Prize
- *Journal of Transportation Engineering* Best Paper Award
- Outstanding Younger Member Award
- Airfield Pavement Practitioner Award

## Additional ICTD-Specific Awards

Additional ICTD-specific awards include:

- Best ICTD 2018 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 2018 being honored during the Monday, July 16th evening awards banquet, sponsored by DiDi.

**(pssst.... tell your professor, boss, or friends to  
nominate you! @ASCE\_TDI #ICTD)**

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

## Francis C. Turner Award & Lecture

**Kelvin C.P. Wang, Ph.D., P.E., M.ASCE**



**Kelvin C.P. Wang,  
Ph.D., P.E., M.ASCE**

### Automation and Artificial Intelligence for Pavement Data Systems

Kelvin Wang, Ph.D., holds degrees from China's Jiaotong Universities and a Ph.D. from Arizona State University in 1992. After a four-year residency at Arizona DOT, he became a faculty member at the University of Arkansas. Currently he holds the Dawson chair at the School of Civil and Environmental Engineering at Oklahoma State University.

Wang has been tackling the problem of automating survey of pavement distresses for nearly 20 years with multi-million-dollar funding from various federal and state agencies. Technologies developed by Wang on automated pavement distress surveys are being used in several countries, including the U.S., China, South Africa, and Brazil. Since the mid-1990's he led or helped lead over 10 international conferences both in the U.S. and abroad. He is the co-editor-in-chief of the International Journal of Rail Transportation by Taylor and Francis. Wang also received the 2011 ASCE Frank M. Masters Transportation Engineering Award, and was ASCE T&DI president in FY 2017. He is the lead faculty in transportation at OSU and an associate director for a regional university transportation center.

### 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.



## **Frank M. Masters Transportation Award** **Sue McNeil, Ph.D., P.E., Dist.M.ASCE**



**Sue McNeil, Ph.D.,  
P.E., Dist.M.ASCE**

Sue McNeil, Ph.D., has made a significant contribution in transportation planning, especially with her recent work on the transportation aspects of disaster relief. This work, conducted in cooperation with the Center of Advanced Infrastructure and Transportation at Rutgers University, is of seminal value and it was disseminated widely through several reports and journal papers. In addition, McNeil's service as the Chief Editor of ASCE's *Journal of Infrastructure Systems* has been exemplary and serves as a bright example to all aspiring female civil engineering professionals. McNeil has an outstanding record of research achievement, educational contributions, and professional service. Her research contributions to improve asset management procedures, brownfield redevelopment, and infrastructure resiliency are particularly notable and deserving of recognition with the Frank Masters award. She has been a national and international engineering leader in these important activities. She has led a variety of professional committees and panels, as well as chairing or co-chairing prominent conferences for a variety of professional organizations including ASCE and the Transportation Research Board. She has also been a role model, advisor, and teacher for many civil engineers.

### **About the Award**

The Frank M. Masters Transportation Engineering Award is a memorial to the outstanding professional accomplishments of Frank M. Masters, Hon.M.ASCE, established in November 1975.



**Geoffrey S. Baskir,  
M.ASCE**

## **Harland Bartholomew Award** **Geoffrey S. Baskir, M.ASCE**

Geoffrey S. Baskir is a recognized civil engineering leader who best exemplifies a role and legacy of planning in urban development – particularly large-scale and complex airport developments – through his creative work, consultation, engagement, mentoring, communication, ethics, and planning and engineering acumen. Many young as well as experienced professionals have benefited immensely from his mentoring and advice and hold him in highest regards.

Baskir has devoted himself for nearly four decades to civil engineering. He has made significant contributions to public safety by using his skills as an aviation and airport planner. His work improved airport and aviation safety by reducing incursions and incidents through analyzing airport safety events and preparing plans for improvements.

Baskir has a long and distinguished record of accomplishment as a volunteer with both ASCE and TRB. With ASCE, he served both as Chair of the Air Transport Committee, President of the National Capital Section, Chair of the Airport Planning and Operations Committee, and Governor of the Transportation & Development Institute. During the six years he served as Chair of TRB's Aircraft/Airport Compatibility Committee, he helped forge increased collaboration between ASCE and TRB on programs related to airport operations and infrastructure.

### **About the Award**

This award is made to the person who is judged worthy of special commendation for contributions to the enhancement of the role of the civil engineer in urban planning and development. It was established in 1968 in recognition of the outstanding professional accomplishments of Harland Bartholomew, Hon.M.ASCE.



## **Wilbur S. Smith Award** **Geoffrey Michael Rowe, Ph.D., P.E., C.Eng., M.ASCE**



**Geoffrey Michael Rowe, Ph.D.**

Geoffrey Michael Rowe, Ph.D., is a distinguished highway engineer with nationally and internationally recognized expertise in pavement engineering and a specialization in asphalt materials. For more than 40 years, he has been actively involved in developing, improving, and implementing technologies to improve the understanding of bituminous materials for use on highway and airfield pavements.

Rowe's work covers all aspects from the practical construction of roads to advanced engineering research. He has performed pioneering work in the understanding of behavior of asphalt materials, including both mixtures and binders. His work is included in many specifications in use by highway engineers around the world, and his experience has been used to support technology transfer to highway agencies in the United States and other countries, including emerging and developing countries around the world.

### **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.

## **James Laurie Prize** **Paul M. Schonfeld, Ph.D., P.E., F.ASCE**



**Paul M. Schonfeld, Ph.D.**

Paul M. Schonfeld, Ph.D., is a professor in the Department of Civil and Environmental Engineering at the University of Maryland. He has served as the Director of the Transportation Engineering program for 19 years and Director for Freight Mobility and Security for 4 years, guiding students in many educational, research, and outreach activities. He and his students have developed numerous innovative methods for transportation system planning, design, evaluation, simulation, optimization, routing and scheduling, reliability analysis, and real-time control. Some of these methods have been used by the U.S. Army Corps of Engineers, Federal Aviation Administration, Maryland Department of Transportation, and various private firms.

Among many of his known research works, Schonfeld's contributions on transportation network development are his most valuable. This is because network development problems are challenging as improvements in networks tend to be quite interdependent. His research has gone beyond analyzing mutually exclusive alternatives and developed methods to analyze inter-related alternatives for very large and complex networks, while also being capable of optimizing development schedules and dealing with uncertainties about demand, costs, budgets, and other factors. These methods have been applied to road networks, inland waterway networks, and airports.

As a leader, he has steered many ASCE, ITE, and TRB committees over several decades and has a long list of related contributions, such as serving as the Editor of the ASCE Journal of Transportation Engineering.

### **About the Award**

The prize is awarded based on contributions to the advancement of transportation engineering, in the honor of the first ASCE President, administered by the ASCE Transportation & Development Institute.

## Airfield Pavement Practitioner Award

### Quintin B. Watkins, P.E., M.ASCE



Quintin B. Watkins,  
P.E., M.ASCE

Quintin B. Watkins has been involved in numerous projects involving evaluation, design, and construction of pavement facilities at numerous airports across the United States. Most notable have been his achievements at Hartsfield-Jackson Atlanta International Airport (ATL) where he has made significant contributions during his 20+ year career as a key member of the owner's team, as well as a consultant. His work has included completing complex projects such as fast-track runway replacements, design and construction of an end-around taxiway, and key involvement in perhaps the most comprehensive pavement management system in the world.

#### About the Award

The Airfield Pavement Practitioner Award was established in 2009 to recognize and honor practicing engineers employed in the airfield pavement engineering profession with demonstrated leadership and/or achievements in airfield pavement projects.

## Journal of Transportation Engineering Best Paper Award

### 2016 Winner – Said Easa and Qing Chong You

#### 2016 Best Paper Award

**Qing Chong You and Said M. Easa, M.ASCE, *Innovative Roadside Design Curve of Lateral Clearance: Roadway Simple Horizontal Curves*, J. Transp. Eng., 2016, 142(11): 04016055**



Qing Chong You

Qing Chong You is a senior transportation engineer with WSP Canada Inc. and a research associate with Ryerson University, Canada. He received his master's degree in transportation engineering from Ryerson University. While he services in the consulting industry, having received extensive industrial experience in the field of traffic, transit, and transportation planning and engineering, he actively conducts academic research. He has published several journal papers, one of which received a Best Paper Award from Transportation Research Board. His research interests include highway geometric design, road safety, traffic operations and management, transportation demand forecasting, and traffic simulation.



Said Easa

Said Easa, Ph.D., is Professor of Civil Engineering, Ryerson University, Canada. He received PhD from University of California, Berkeley and B.Sc from Cairo University. His current research focuses highway geometric design and safety. He has introduced innovative approaches for safer and more efficient transportation infrastructure, and has identified ways for improving the design of highway alignments, railway crossings, interchanges, intersections, and roundabouts. His research has been published in 270 refereed journal articles. He serves as Associate Editor of the ASCE Journal of Transportation Engineering, ASCE Journal of Surveying Engineering, and Canadian Journal of Civil Engineering. Dr. Easa's work received numerous national best-paper and lifetime achievement awards from Canadian and U.S. organizations.

## Journal of Transportation Engineering Best Paper Award

(continued)

### 2017 Winner – Juneyoung Park and Mohamed Abdel-Aty

#### 2017 Best Paper Award

**Juneyoung Park, Ph.D.; and Mohamed Abdel-Aty, Ph.D., P.E., A.M.ASCE, *Safety Performance of Combinations of Traffic and Roadway Cross-Sectional Design Elements at Straight and Curved Segments, J. Transp. Eng., Part A: Systems, 2017, 143(6): 04017015***



**Juneyoung Park, Ph.D.**

Juneyoung Park, Ph.D., is an assistant professor of the transportation and logistics engineering department at the Hanyang University, South Korea. His main research interests are traffic safety evaluation, advanced statistics and data mining, user information and human factors, simulations, traffic control devices, and freight transportation in logistics system. His awards and honors include University Award for Outstanding Dissertation in 2016 by the University of Central Florida, TRB Best Paper Award in 2015, and Winner of Big Data Analysis Contest in 2014. Park is member of multiple TRB Committees, including User Information Systems and Traffic Control Devices.



**Mohamed Abdel-Aty, Ph.D., P.E., A.M.ASCE**

Mohamed Abdel-Aty, Ph.D., P.E., F.ASCE is a Trustee Chair at the University of Central Florida (UCF). He is a Pegasus Professor and the Chair of the Civil, Environmental and Construction Engineering Department (CECE) at UCF. He is leading the Future City initiative at UCF. He was awarded in 2015 the Pegasus Professorship, the highest honor at UCF. His main expertise and interests are in the areas of traffic safety analysis, active traffic management, simulation, big data and data analytics and ITS. Abdel-Aty is a leading traffic safety expert at both the national and international levels. He is well-recognized for his research on real-time traffic safety, integrating road safety and transportation planning, and ITS safety applications. More recently he and his team have been working on connected vehicles, active traffic management, and improvement and implementation of the *Highway Safety Manual* in Florida. In the last 22 years, Abdel-Aty has managed more than 55 research projects. Abdel-Aty has published more than 500 papers, 265 in journals (Citations 11,500, H-Index 55). He supervised to graduation 66 Ph.D. and MS students. He and his students have won nine best paper awards from ASCE, TRB and WCTR. Abdel-Aty is the Editor-in-Chief of *Accident Analysis and Prevention*, the premier journal in safety. He is a member of the editorial boards of the *ITS Journal* and the *International Journal of Sustainable Transportation*, member of ASCE, and member of multiple TRB Committees, including Safety Data, Analysis & Evaluation, Safety Performance and User Information Systems. In 2003 he was selected as UCF's Distinguished Researcher, and in 2007 as UCF's Outstanding Graduate Teacher. He has received multiple research awards from the College of Engineering & Computer Science in 2003, 2008, 2010, and 2012, including the Dean's Advisory Board award. He has been invited to deliver many Keynote speeches in conferences around the world, including in Belgium, Brazil, China, South Korea, Turkey, Saudi Arabia, Jordan, Qatar, and the United Arab Emirates. He is a registered professional engineer in Florida.

#### About the Award

This award is given to the author(s) of an outstanding paper published in the Journal of Transportation Engineering.

## Outstanding Younger Member Award Cassie Castorena, Ph.D., A.M.ASCE



**Cassie Castorena,  
Ph.D., A.M.ASCE**

Cassie Castorena is an Assistant Professor in the Department of Civil, Construction, and Environmental Engineering at North Carolina State University (NCSU). Her research focuses on the characterization and modeling of asphalt binders, emulsions, mastics, and asphalt mixtures. Castorena has served as the PI or Co-PI for projects supported by the Federal Highway Administration (FHWA), National Cooperative Highway Research Program (NCHRP), National Science Foundation (NSF), and North Carolina Department of Transportation (NCDOT). Her work has been supported by over 3.5 million dollars of research funding. She has published 44 technical journal articles, conference papers, and technical reports. Castorena has received the Outstanding Teacher Award from NCSU in 2017 and the American Association of State Highway and Transportation Officials (AASHTO) Research Advisory Committee (RAC) for a High Value Research Award in 2016. She is an Associate Member of ASCE. She is also a member of Transportation Research Board (TRB) committee AFK20, Asphalt Binders, and the Association of Asphalt Paving Technologist (AAPT).

### About the Award

The Outstanding Younger Member Award was established in 2014 to recognize members of the Institute below the age of 35 for significant professional achievement and advancement of the profession.

## Younger Member: Best Poster Award

The best poster presented during the interactive poster session by young professionals or students will be announced. In special cases, it is possible to have more than one winning poster. The winner(s) of the Best Poster Award will receive an award.

## Robert Horonjef Award



**Amedeo R. Odoni,  
Ph.D., NAE, M.ASCE,  
F.INFORMS**

This award will be presented at the ASCE Annual Convention in October 2018.

Amedeo R. Odoni, Ph.D., NAE, M.ASCE, F.INFORMS, been selected as the 2017 recipient of the Robert Horonjef Award. Odoni's significant work on airport and airspace capacity and air traffic flow management has transformed the theory and practice of airport planning and engineering worldwide, influencing the entire process from planning and design to operations and policy-making. As an educator, his influence has been far reaching. His seminal texts – *Urban Operations Research*, *Airport Systems: Planning Design and Management*, and *The Global Airline Industry* – have been used by many students, educators, and practitioners worldwide and have helped deal with many cross-cutting issues affecting air transportation.

### About the Award

The Robert Horonjef Award was established to recognize and honor a person, persons, organization or organizations for outstanding achievements in, and contributions to the advancement of the field of air transportation engineering.

## 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.

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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!

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**Join the ICTD Conversation!**

**#ICTD18**



# Join the Transportation & Development Institute of ASCE



ROADWAYS



AVIATION



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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.

**Submit an Abstract! 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

# T&DI

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



### ~17,000 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 · Development · Mode Spanning · Standards · Administrative



### COMMITTEES

Connected & Autonomous Vehicles (CAV) Impacts · Highway Pavement · Street & Highway Operations · Highway Construction · Local Roads & Streets · Public Transport · Rail Transport · Automated People Movers · Airfield Pavement · Aviation Planning & Operations · Sustainability & Environment · Land Use & Development · Planning, Economics & Finance · Transportation Safety · Advanced Technologies · Infrastructure Systems · Freight & Logistics · APM Standard · Interlocking Concrete Pavers Standard · Permeable Concrete Interlocking Pavers Standard · Admin Committees: Awards · Conferences · Continuing Education · Membership · Nominating · Younger Members Committee



### CHAPTERS

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

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

## 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 (monthly) · Journal of Infrastructure Systems (quarterly) · Journal of Urban Planning & Design (quarterly)



### STANDARDS

Automated People Movers · Interlocking Concrete Pavers



### WEBINARS

Continuing education · Professional development offerings



### 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 · Long Term Pavement Performance Paper Award · Liesch Fellowship · T&DI Outstanding Younger Member Award



### BOOKS

Books on transportation and development topics



### MONTHLY NEWSLETTER

Transportation & Development News

**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 Sunday, July 15, 2018.** Committee meetings are open to all ICTD 2018 conference attendees, and serve as a great opportunity to engage with your professional community.

## Schedule | SUNDAY, July 15

*(Subject to change)*

### 1:00 – 3:00 p.m.

Airfield Pavement Committee | [Sterling 1-3](#)

Connected & Autonomous Vehicles Impacts Committee | [Brigade](#)

Freight & Logistics Committee | [Benedum](#)

Highway Construction Committee | [Board Room](#)

Infrastructure Systems Committee | [Smithfield](#)

Public Transport Committee | [Forbes](#)

Sustainability & Environment Committee | [Traders](#)

Transportation Safety Committee | [Duquesne](#)

### 3:00 – 5:00 p.m.

Advanced Technologies Committee | [Brigade](#)

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

Planning, Economics, & Finance Committee | [Smithfield](#)

Rail Transport Committee | [Forbes](#)

Street & Highway Operations Committee | [Duquesne](#)

Highway Pavement Committee | [Sterling 1-3](#)

### 5:00 – 6:00 p.m.

Journal of Transportation Engineering, Part A: Systems | [Rivers](#)



## Advanced Technologies Committee

3:00 – 5:00 p.m. | *Brigade*

Purpose: To provide a forum for the discussion on advanced technologies, and interaction among the varied professional transportation specialties involved. To encourage and guide the ASCE community in seeking out and implementing new opportunities for advanced technology applications in transportation; to provide leadership for ASCE conferences in the application of advanced technologies in transportation. To foster international exchanges and education on advanced technologies.

**Chair: Byungkyu (Brian) Park, M.ASCE**

**Vice Chair: Praveen Edara, Ph.D., P.E., M.ASCE**



**Park**

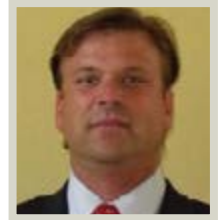
## Airfield Pavement Committee

1:00 – 3:00 p.m. | *Sterling 1-3*

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: Rick Boudreau, P.E., M.ASCE**

**Vice Chair: Bernadette Caparas, P.E., M.ASCE**



**Boudreau**

## Automated People Movers Committee

Not meeting at ICTD.

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**



**Elliott**



**Varma**

## **Aviation Planning & Operations Committee**

3:00 – 5:00 p.m. | *Benedum*

Purpose: To address issues dealing with the planning and design of airport runways, taxiways, aprons, terminals, ground transportation facilities, and support facilities (excepting airfield pavement design) and 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**

**Vice Chair: Vivek Khanna, Ph.D., P.E., M.ASCE**



**Ma**

## **Connected & Autonomous Vehicles Impacts Committee**

1:00 – 3:00 p.m. | *Brigade*

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**

**Co-Chair: Yinhai Wang, Ph.D., M.ASCE**



**Wang**

## Freight & Logistics Committee

1:00 – 3:00 p.m. | [Benedum](#)

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**



**Conway**

## Highway Construction Committee

1:00 – 3:00 p.m. | [Board Room](#)

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 over-all 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: Rajib Mallick, P.E., M.ASCE**

**Vice Chair: James Gallagher, P.E., F.ASCE**



**Mallick**

## Highway Pavement Committee

3:00 – 5:00 p.m. | [Sterling 1-3](#)

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**

**Vice Chair: Muhammad Kutay, Ph.D., P.E., M.ASCE**



**Ozer**



**Peters**

## **Infrastructure Systems Committee**

1:00 – 3:00 p.m. | [Smithfield](#)

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 Peters, EIT, A.M.ASCE**

**Vice Chair: Carlos Chang, P.E., M.ASCE**



**Hendrickson**

## **Journal of Transportation Engineering, Part A: System**

5:00 – 6:00 p.m. | [Rivers](#)

*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.

### **Editorial Board**

**Editor in Chief: Chris T. Hendrickson, Ph.D., Hon.M.ASCE**

**Managing Editor: Laurence R. Rilett, Ph.D., P.E.**

**Editor in Chief Emeritus: Kumares C. Sinha, Ph.D., P.E., Hon. M.ASCE**

## Planning, Economics & Finance Committee

3:00 – 5:00 p.m. | *Smithfield*

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**



**Labi**

## Public Transport Committee

1:00 – 3:00 p.m. | *Forbes*

Purpose: To examine and evaluate the developments in public transport modes, with emphasis on the planning, design, construction, and rehabilitation of capital facilities; 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: Steven Lee Jones, M.ASCE**

**Vice Chair: Luis Ferreras, M.ASCE**



**Jones**

## Rail Transport Committee

3:00 – 5:00 p.m. | *Forbes*

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 United States. 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 the RTC looks at 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: Hai Huang, P.E., M.ASCE**

**Vice Chair: Dimitris Rizos, C.Eng., M.ASCE**



**Huang**

## Street & Highway Operations Committee

3:00 – 5:00 p.m. | *Duquesne*

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**

**Vice Chair: Srikanth Panguluri, P.E., M.ASCE**



**Al-Ghandour**



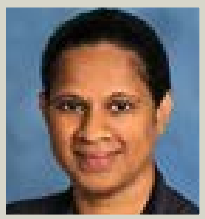
**Harvey**

## Sustainability & Environment Committee

1:00 – 3:00 p.m. | *Traders*

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: John Harvey, P.E., M.ASCE*



**Dissanayake**

## Transportation Safety Committee

1:00 – 3:00 p.m. | *Duquesne*

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.

*Chair: Sunanda Dissanayake, Ph.D., P.E., F.ASCE*

*Vice Chair: Deogratias Eustace, P.E., M.ASCE*





## See You in the Exhibit Hall!

Exhibits reflecting all areas of transportation and development design, construction, and operation will run throughout the conference to give you a look at leading edge suppliers and service providers to the industry and ideas for your projects and operations.

## Exhibit Hall Schedule

*(Subject to change)*

<b>Sunday, July 15</b>	
1:00 – 5:00 p.m.	<b>Exhibitor Move-in</b>
6:00 – 7:30 p.m.	<b>Welcome Reception in Exhibit Hall</b>
<b>Monday, July 16</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>
<b>Tuesday, July 17</b>	
7:30 a.m. – 3:30 p.m.	<b>Exhibit Hall Hours</b>
7:30 – 8:30 a.m.	<b>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>
3:45 – 5:00 p.m.	<b>Exhibitor Move-Out</b>



## 2018 Exhibitors

### Booth 1

#### **Aerix Industries**

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

Aerix Industries is the world leading manufacturer of foam concentrate for use in low density cellular concrete providing projects with a fast schedule cost saving alternative backfill material for roadway sub-base, bridge approaches backfill, and other pavement system solutions. Cellular concrete reduces soil loading while maintaining structural integrity.

### Booth 4

#### **Aero Aggregates**

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

Foamed glass aggregates are ultra-lightweight and used on highways, bridge abutments, and retaining walls. In addition, they provide drainage and insulation properties. Unit weights 10-20 pcf.

### Booth 5 & 8

#### **DiDi Chuxing**

[www.didichuxing.com/en](http://www.didichuxing.com/en)

DiDi Chuxing is the world's leading mobile transportation platform. It is committed to working with communities and partners to solve the world's transportation, environmental and employment challenges by using big data-driven deep learning algorithms that optimize resource allocation. By continuously improving user experience and creating social value, it strives to build an open, efficient, collaborative, and sustainable transportation ecosystem.

### Booth 9

#### **International Right of Way Association – Chapter 13**

[irwa13.org/site/](http://irwa13.org/site/)

Since its inception as a not-for-profit association in 1934, IRWA has united the efforts of its members toward professional development, strong ethics, and improved service to employers and the public, along with advancements within the right of way profession. IRWA is the unsurpassed source of right of way educational programs and professional services worldwide.

### Booth 11

#### **Master Locators**

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

As longtime leaders in the subsurface utility locating industry, Master Locators Inc. has served the Mid-Atlantic and Northeast with consistent service and highly qualified technicians for decades. Master Locators' experience and knowledge of professional utility marking and hydro excavation service ensures customers professional workmanship and quality subsurface utility engineering solutions.

### Booth 12

#### **Metal Fatigue Solutions**

[www.metal-fatigue-solutions.com](http://www.metal-fatigue-solutions.com)

Metal Fatigue Solutions, Inc. (MFS) is the leading authority on fatigue and development systems used to indicate the true status of fatigue damage in metal components and structures. MFS manufactures products based on two primary technologies, the Electrochemical Fatigue Sensor (EFS) and the Fatigue Fuse (FF). The EFS is an instrument that detects very small growing fatigue cracks in metals.

### Booth 7

#### **PlanGrid**

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

PlanGrid is construction software made for the field. Its cloud-based construction document collaboration platform is being used by major construction firms on more than 500,000 projects all over the world. PlanGrid allows plans and markups to be instantaneously shared with everyone on a construction project, no matter where they are. It lets contractors, architects, and building owners collaborate from their desktop or mobile devices across all of their project plans, specs, photos, RFIs, and punchlists.

### Booth 2

#### **Port Authority of Allegheny County**

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

Port Authority of Allegheny County provides public transportation throughout Pittsburgh and Allegheny County. It is currently focused on enacting a number of improvements to make service more efficient and easier to use. Numerous projects are either underway or in the planning stages, including implementation of smart card technology, real-time vehicle tracking, and on-street bus rapid transit.

### Booth 10

#### **Slag Cement Association**

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

The Slag Cement Association is dedicated to communicating the performance and environmental benefits of slag cement and slag blended cements through promotion, education, and technology development.

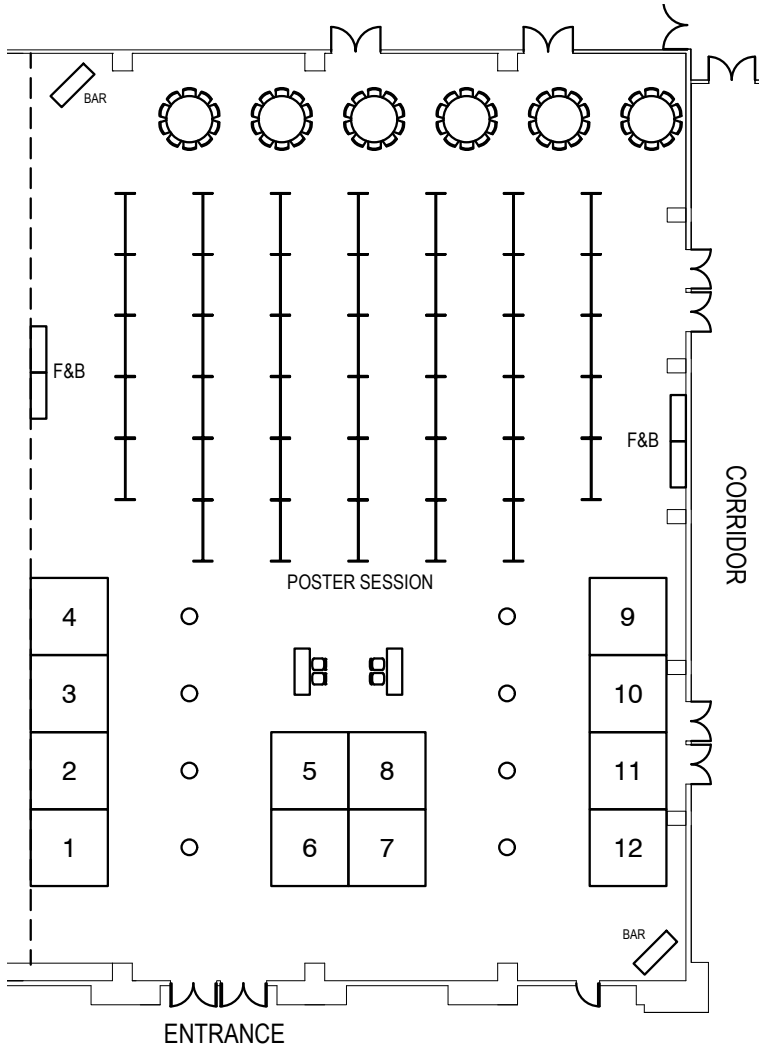
### Booth 6

#### **Williamette Valley Company**

[www.wilvaco.com](http://www.wilvaco.com) and  
[www.fastpatchsystems.com](http://www.fastpatchsystems.com)

Fastpatch repairs and preserves concrete slabs and asphalt pavement. Easy and safe to mix and install, 100 percent solids, and VOC free. Intended for spall repairs both large and small. Prevents F.O.D and provides long lasting repairs.

# Exhibit Hall



## ADA Compliance

The Wyndham Grand Pittsburgh Downtown 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 2018 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.

## Badges and Ribbons

Your ICTD name badge is your admission to all conference sessions. Please wear your badge at all times while at the Wyndham Grand Pittsburgh Downtown. Tickets are required for the pre- and post-conference 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 are available online to all full registrants. Please see the postcard in your registration package to access the Conference Proceedings.

## 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).

## Professional Development Hours (PDHs)

You may earn PDHs, which are nationally recognized units of record, by attending ICTD sessions and workshops. 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).

## Sustainable Conference Policy Statement

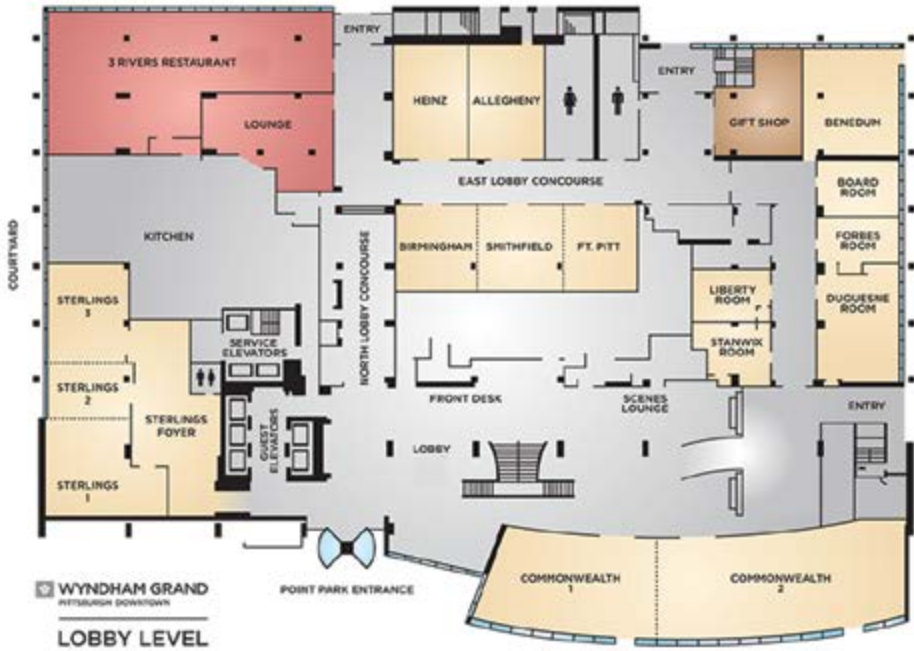
ASCE is committed to sustainable meetings in accord with the ASCE policy on The Role of the Civil Engineer in Sustainable Development. ASCE defines sustainability as a set of economic, environmental, and social conditions in which all of society has the capacity and opportunity to maintain and improve 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.

## ICTD Mobile App

*A quick, easy way to tap into the ICTD 2018 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 2018" 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. Wifi is available throughout the Wyndham hotel.

# General Information





# INTERNATIONAL CONFERENCE ON TRANSPORTATION & DEVELOPMENT 2018

Pittsburgh, Pennsylvania | July 15–18, 2018

## THANK YOU TO OUR SPONSORS!

### DIAMOND



Awards Dinner

### GOLD



Final Program

### CORPORATE



### SILVER



FIFA World Cup Watching Party



Lanyards

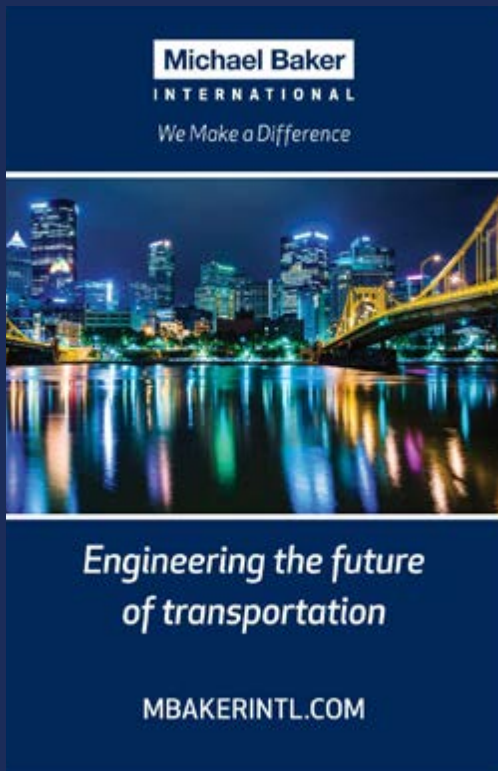
### BRONZE



Networking Break



Networking Break



**SAVE THE DATE**



**INTERNATIONAL CONFERENCE ON  
TRANSPORTATION & DEVELOPMENT 2019**

Alexandria, VA | June 10-12, 2019

*ASCE's Flagship Conference in Transportation & Development*



Hilton Alexandria Mark Center Hotel  
#ICTD19 | [www.asce-ictd.org](http://www.asce-ictd.org)

