Welcome!

It is our great pleasure to welcome you to the International Airfield and Highway Pavements Conference (Pavements 2019) organized by the Transportation and Development Institute (T&DI)!

The conference theme is “Efficient and Sustainable Pavements” and is dedicated to the state-of-the-art and state-of-practice design, construction, preservation, and rehabilitation technologies, as well as sustainable materials and life cycle assessments for airfield and highway pavements.

This international conference provides a chance to network, interact, and exchange information with worldwide leaders in the fields of highway and airfield pavements. This conference brings together transportation infrastructure researchers, consultants, designers, project/construction managers, academics, and contractors from around the world.

Pavements 2019’s three days of technical program will feature preconference workshops, a poster session, four technical tracks, and two plenary sessions. The first plenary session features a presentation of industry awards, followed by a keynote. The second plenary hosts the Carl Monismith Lecture by Gary Hicks of California Pavement Preservation Center at California State University, Chico, followed by a moderated panel discussion on the ASCE Grand Challenge.

The program also features two technical tours – one of the O’Hare International Airport Modernization Project as well as a tour visiting the Illinois Department of Transportation’s Jane Byrne Interchange Reconstruction project.

On behalf of the conference leadership, organizing committees, and the ASCE T&DI staff, we wish you a very pleasant stay in Chicago!
### Sunday, July 21
- 12:00 p.m. – 7:00 p.m.: Registration Open
- 1:00 p.m. – 5:00 p.m.: Exhibitor Move-In
- 1:00 p.m. – 5:00 p.m.: Pre-Conference Workshops
- 6:00 p.m. – 7:30 p.m.: Welcome Reception
- 6:00 p.m. – 7:30 p.m.: Exhibit Hall Open

### Monday, July 22
- 7:00 a.m. – 6:00 p.m.: Registration Open
- 7:30 a.m. – 8:30 a.m.: Light Continental Breakfast
- 8:30 a.m. – 10:00 a.m.: Opening Plenary Session: Welcome and Awards
- 10:00 a.m. – 10:30 a.m.: Networking Break in Exhibit Hall
- 10:30 a.m. – 12:00 p.m.: Concurrent Technical Sessions
- 12:00 p.m. – 1:30 p.m.: Buffet Lunch
- 1:30 p.m. – 3:00 p.m.: Concurrent Technical Sessions
- 3:00 p.m. – 3:30 p.m.: Networking Break in Exhibit Hall
- 3:30 p.m. – 5:00 p.m.: Concurrent Technical Sessions
- 5:15 p.m. – 6:15 p.m.: Prepare to Profess: Pavements Faculty Session
- 6:30 p.m. – 9:00 p.m.: Chicago River Boat Tour

### Tuesday, July 23
- 7:00 a.m. – 6:00 p.m.: Registration Open
- 7:30 a.m. – 3:30 p.m.: Light Continental Breakfast
- 8:30 a.m. – 10:00 a.m.: Plenary Session
- 10:00 a.m. – 10:30 a.m.: Networking Break in Exhibit Hall
- 10:30 a.m. – 12:00 p.m.: Concurrent Technical Sessions
- 12:00 p.m. – 1:30 p.m.: Buffet Lunch
- 1:30 p.m. – 3:00 p.m.: Technical Sessions
- 3:00 p.m. – 3:30 p.m.: Networking Break in Exhibit Hall
- 3:30 p.m. – 5:00 p.m.: Concurrent Technical Sessions
- 3:45 p.m. – 5:00 p.m.: Exhibitors Move-Out
- 5:15 p.m. – 6:15 p.m.: Younger Members Session “Paving the Gap Between Different Generations of Civil Engineers”

### Wednesday, July 24
- 7:00 a.m. – 12:00 p.m.: Registration Open (Moved to 14th Floor Foyer)
- 7:30 a.m. – 8:30 a.m.: Light Continental Breakfast
- 8:30 a.m. – 10:00 a.m.: Concurrent Technical Sessions
- 10:00 a.m. – 10:30 a.m.: Networking Break in Exhibit Hall
- 10:30 a.m. – 12:00 p.m.: Concurrent Technical Sessions
- 1:00 p.m. – 5:00 p.m.: Technical Tours
**PROGRAM CONTENT TABS**

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

---

**PAVEMENTS MOBILE APP**

**A QUICK, EASY WAY TO TAP INTO THE PAVEMENTS 2019 EXPERIENCE**

Download the free conference mobile app and see the full conference schedule, poster list, speaker bios, exhibit hall information, and more! The free app is available in the Apple Store and Google Play store. Just search for the “ASCE Conferences and Events” app, install and open app, then select “Pavements 2019” as your event. This will allow you to create an account to access the app.
Sunday, July 21

**APSE Committee Meeting**
8:00 a.m. – 12:00 p.m. | Western Stage

**Conference Workshops**
1:00 – 5:00 p.m. | Merchants Hotel
Performance Engineered Mixtures (PEM) Workshop
1:00 – 5:00 p.m. | Steamboat Hotel
Airport Pavement Evaluation Software Workshop – PAVEAIR, BAKFAA and ProFAA

**TRB AV070 Committee Meeting**
3:00 – 4:30 p.m. | Bulls Head

**Airfield Pavement Committee**
5:00 – 6:00 p.m. | Western Stage

**Welcome Reception**
6:00 – 7:30 p.m. | Wolf Point

**Highway Construction Committee and Highway Pavements Committee (Combined)**
7:30 – 9:00 p.m. | Western Stage
Pre-Conference Events

SUNDAY | JULY 21

APSE Committee Meeting
8:00 a.m. – 12:00 p.m. | Western Stage

Pre-Conference Workshops
Earn PDHs, immerse yourself in a new topic or engage with those in your field to discuss an area of interest!

Workshops are available at an additional cost of $150/workshop.

All events are subject to change.

Performance Engineered Mixtures (PEM) Workshop
1:00 – 5:00 p.m. | Merchants Hotel
4 PDHs

The fundamental shift associated with performance engineered mixtures is the transfer of risk and control from the highway agency to the contractor. Instead of telling contractors what to do, agencies will give them the chance to innovate and meet the performance criteria specified by the agency in the most economical and environmentally sustainable manner. The ultimate vision of the PEM program is for highway agencies to have faster and better quality assurance tests, optimized mixtures that lead to cost savings, and longer lasting pavements. Topics for presentation and discussion at the workshop are:

- Performance Engineered Pavements (Asphalt and Concrete), Richard Duval, FHWA
- Performance Engineered Mixtures (PEM) for Concrete, Michael Praul, FHWA
- Concrete PEM Tests, Ph.D., Peter Taylor, National Concrete Pavement Technology Center
- Concrete PEM Pooled Fund, Cooperative Agreement, and State Implementation, Gordon Smith, National Concrete Pavement Technology Center
- Strengthening Asphalt Quality Assurance, Tim Aschenbrener, FHWA
- Navigating the Performance Test Jungle: Recommendations to Implementing Performance Tests, David Mensching, Ph.D., FHWA
- MaineDOT Experience with Performance Engineered Mixture Design for Asphalt, Derek Nener-Plante, MaineDOT

This workshop is a cooperative activity of the Federal Highway Administration and the American Concrete Pavement Association.

Airport Pavement Evaluation Software Workshop – PAVEAIR, BAKFAA and ProFAA
1:00 – 5:00 p.m. | Steamboat Hotel
4 PDHs

Instructor: Jeffrey Gagnon, Federal Aviation Administration

Developed and maintained by the Federal Aviation Administration (U.S.), a suite of free software tools including the PAVEAIR, BAKFAA, and ProFAA computer programs provides publicly-available tools for pavement evaluation and analysis. FAA PAVEAIR 3.2 is a web-based Airport Pavement Management System (APMS) designed to assist organizations in the assessment, management, and maintenance of their airfield pavement networks. BAKFAA 2.1.0.1 performs backcalculation of pavement material properties using Heavy Weight Deflectometer/Falling Weight Deflectometer (HWD/FWD) data. ProFAA computes pavement elevation profile roughness indices. This FAA software workshop is intended for engineers practicing airport pavement evaluations.

Participants in the workshop will:

- Learn the principles of pavement evaluation using these software programs.
- Participate in hands-on demonstrations of the software.
- Discover how recent and scheduled improvements will enhance the functionality of each program. It is highly recommended that workshop participants bring their own laptops so that they can install the software to follow along through the training and pavement evaluation demonstrations.

TRB AV070 Committee Meeting
3:00 – 4:30 p.m. | Bulls Head

Airfield Pavement Committee
5:00 – 6:00 p.m. | Western Stage
Welcome Reception
6:00 – 7:30 p.m. | Wolf Point Ballroom

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

Highway Construction Committee and Highway Pavements Committee (Combined)
7:30 – 9:00 p.m. | Western Stage

In Memoriam: Ross Anderson

It is with profound sadness that we report the sudden passing of Ross Anderson, a good friend and mentor to many, on June 7, 2019.

Anderson was very active in ASCE and T&DI. He recently served on the local organizing committee of the 2019 International Airfield and Highway Pavement Conference and was instrumental in organizing the O’Hare Airport- Airside ORD 21tour. He will be greatly missed.
Monday, July 22

Opening Plenary
Welcome Address, Keynote Speakers, and Awards
8:30 – 10:00 a.m.

Tuesday, July 23

Carl L. Monismith Award and Lecture on Pavement Preservation; ASCE Grand Challenge Panel
8:30 – 10:00 a.m.
Opening Plenary
Welcome Address, Keynote Speakers, and Awards
8:30 – 10:00 a.m. | Sauganash Grand Ballroom
1.5 PDHS

Omer Osman, Acting Secretary, Illinois Department of Transportation
Omer Osman was appointed transportation secretary by Gov. JB Pritzker in 2019. His role as secretary reflects three decades of experience at the Illinois Department of Transportation in engineering and management. Moving through IDOT’s ranks gives him unique insight into department operations and scope, funding challenges and opportunities, as well as the need for strategic maintenance and infrastructure growth to support economic development and travel for Illinois residents.

Under his leadership, IDOT continues to champion diversity. He remains an advocate for eliminating barriers and increasing access to IDOT partnerships with disadvantaged business enterprises and minority- and female-owned businesses. His vast experience in transportation includes the management and advancement of complex projects and the assessment of current resources to inform funding and programmatic needs to create a multimodal system for the 21st century.

A native of the Sudan, Osman came to the U.S. to study civil engineering at Southern University and A & M College in Baton Rouge, Louisiana. He also earned a master’s in civil engineering with an emphasis in construction management at Bradley University in Peoria.

Jamie L. Rhee, Commissioner, Chicago Department of Aviation
Chicago Department of Aviation (CDA) Commissioner Jamie Rhee manages one of the world’s busiest airport systems, comprised of O’Hare and Midway International Airports, which serves more than 100 million passengers each year and propels Chicago as a global leader for air cargo activity. Chicago’s airports are also among the most connected in the world, serving more than 260 locations via 50 different commercial carriers to 46 countries worldwide.

Rhee has a long history of mastering complex issues in aviation as well as municipal government. Rhee began her career with the City of Chicago, and has worked for nearly 24 years in various roles, most recently as the Chief Procurement Officer. In this role, Rhee oversaw purchasing of $2 billion in goods and services for dozens of user departments of the City of Chicago, including the CDA; and the certification of thousands of minority-owned, women-owned, and disadvantaged business enterprises, including the Airport Concessionaire Disadvantaged Business Enterprise (ACDBE) program. Under Rhee’s leadership, Chicago’s procurement reform efforts have received national and international recognition, and Rhee has been recognized with a dozen awards from industry organizations for her contributions to public service.

Rhee previously served in various roles at the CDA. From 2004-2008, she served as the General Counsel for the O’Hare Modernization Program (OMP), where she handled all legal matters for the multi-billion dollar program, including all federal and state litigation as well as legal strategy with the Chicago Corporation Counsel, Department of Justice and the Federal Aviation Administration (FAA); oversaw the successful completion of the FAA’s Environmental Impact Statement process and managed the legal process and procurement for all contracts, including commissioning the OMP’s first runway project ahead of schedule and under budget. She also played key roles in previous administrations, having served as a Deputy Chief of Staff to the Mayor; and in various roles at the Departments of Law and Planning and Development. Rhee has a Bachelor of Arts degree from Michigan State University and a Juris Doctorate degree from DePaul University School of Law.

Carl L. Monismith Award and Lecture on Pavement Preservation
8:30 – 10:00 a.m. | Sauganash Grand Ballroom
1.5 PDHS

R. Gary Hicks, Ph.D., P.E., ASCE Life Member, Project Manager, CP2 Center and Consultant
Hicks is the 2018 winner of the ASCE Geo-Institute’s Carl L. Monismith Award and Lecture on Pavement Engineering for his 50 years of technical and professional contributions in pavement materials, design, and evaluation and the construction and maintenance of transportation facilities. The Monismith
Lecture is awarded annually for outstanding research contributions in Pavement Engineering and honors Professor Carl L. Monismith’s contributions to the field.

Hicks is a part-time Project Manager for the California Pavement Preservation (CP2) Center established at CSU, Chico in 2006 and a private consultant to several companies and organizations. Prior to this, Dr. Hicks was the Technical Director for the CP2 Center, senior principal for MACTEC E&C (now WOOD LLC) in Sacramento, and a Distinguished Professor of Civil Engineering at Oregon State University for over 25 years before retiring in 1997. He was an Associate Professor at Georgia Tech in the early 1970s and was a Senior Engineer for Woodward Clyde Consultants in the 1960s.

Hicks has worked in the area of pavements and pavement preservation for nearly 50 years. He was involved in the development of the 1972, 1986, and the 2002 AASHTO Pavement Design Guides. He participated in the SHRP A-003A contract to develop new and improved tests for asphalt concrete mixes.

He received his BS, MS, and Ph.D. degrees from the University of California at Berkeley where his major professor was Carl Monismith. He has been active with the Transportation Research Board (having served as the head of the pavements section and as a member of the pavement maintenance and preservation committees.), Association of Asphalt Paving Technologists (having served as president and selected as an honorary member), Foundation for Pavement Preservation (Founder member, served on the board, and an honorary member), and ASCE where he was the young member of the year in 1975 for the Georgia Section, a member of the airfield pavement and highway pavement committees, and the Chair of the Highway pavements committee.

He is a registered Civil Engineer in the states of California, Oregon, and Alaska and has authored more than 200 publications and one textbook, with Clark Oglesby titled “Highway Engineering” and won numerous awards during his career. He is still active as a consultant to several companies and organizations in the area of pavement design, management, maintenance, and rehabilitation. Gary Hicks was one of Carl Monismith’s earliest Ph.D students and the first of Professor Monismith’s students to receive this award.

---

**ASCE Grand Challenge Panel**

**K. N. Gunalan, Ph.D., P.E., F.ASCE, D.GE.,** ASCE Grand Challenge Panel Moderator, ASCE President 2020

K.N. Gunalan (Guna) is Vice President of Alternative Delivery at AECOM, based in Salt Lake City, Utah. Previously, he was a vice president for Parsons Brinckerhoff.

Gunalan has managed large complex infrastructure projects, providing technical advice on civil, structural, geotechnical, pavement, and materials issues on a variety of projects around the world. His collaborative approach has contributed to many successful programs and projects ranging from a few thousand dollars to more than 3 billion dollars.

Gunalan has been active in ASCE for many years, including leadership roles as Region 8 director (2009-2012), Region 8 governor (2005-2007), Utah Section president (2002-2003), and Texas Section High Plains Branch president (1992). He served as the chair of ASCE’s 2014 Global Engineering Conference in Panama City, Panama, in celebration of the 100th anniversary of the Panama Canal. Most recently, he served as a governor for the Geo-Institute and was a member of the steering committee for the 2017 ASCE India Conference.

Gunalan has been married for 35 years to Duru. They have a son, Kabilar, and a daughter, Pallavi. He loves to read, travel, and learn about new cultures.

**Jeffrey S. Gagnon, M.ASCE,** Airport Pavement Section Manager of Federal Aviation Administration (FAA) Airport Technology Research & Development Branch

Jeffrey Gagnon joined the Airport Pavement Technology R&D branch in August 2007 as the Airport Pavement R&D Section Manager. He is a civil engineer with over 25 years of experience in the aviation industry. He has worked with several international aviation consulting firms on a diverse range of projects ranging from design and construction of large international airports to pavement research studies, as well as, airport pavement management systems. He earned his Bachelor’s degree in Civil Engineering from the University of New Hampshire in 1990 and a Master’s of Engineering from Texas A&M University in 1992. He is a licensed professional engineer in the state of North Carolina and is a member of the American Society of Civil Engineers (ASCE) Airfield Pavement Committee.
Plenary Events (continued)

Thomas P. Harman, Director, Center for Accelerating Innovation, Federal Highway Administration

Thomas Harman is the Director of the Federal Highway Administration’s Center for Accelerating Innovation. The Center leads the FAST Act - Every Day Counts (EDC) Initiative; Accelerated Innovation Deployment (AID) Demonstration Grant Program; Accelerating Market Readiness Program; and supports the National State Transportation Innovation Council (STIC) Network. Tom has a Bachelor’s in Civil Engineering from the University of Maryland and a Master’s in Civil from the University of Illinois. He has over 30 years of experience in technology implementation, policy, and research. Mr. Harman’s expertise is in technology deployment, warm mix asphalt, and quality assurance. Tom married Sharon in 1996 and is the proud father of Ashley, Corey, and Connor.

Paul A. Loete, P.E., Director of Highways Project Implementation, Illinois Department of Transportation

Paul Loete graduated from the University of Illinois at Urbana Champaign with a degree in civil engineering before beginning his career in the private sector. His private sector experience includes a diverse background in environmental, civil, and transportation engineering. Loete is a licensed professional engineer in Illinois with more than 20 years of experience in private practice and state government. Throughout his career, he has both managed and developed transportation projects in Illinois and Iowa. His experience includes planning, design, and construction engineering associated with various transportation and stormwater management projects, as well as management, strategic planning, and office leadership.

In September 2012, Loete began his career with the Illinois Department of Transportation. His time was allocated to organizational management, administration, and quality review at the district 2 and 3 offices in Dixon and Ottawa, respectively. Region Two includes a staff of more than 670 employees and average annual program of approximately $300 million.

In February 2016, Loete was appointed director of highways project implementation with the Department of Transportation. In his current position, he is accountable for the implementation of programs to accomplish the annual highway work program in conjunction with the coordination of the state’s highway activities with local and regional agencies. This encompasses the safe, efficient, and sustainable delivery of the state’s highway construction program as well as maintenance and operations of the state highway system through effective engineering activities of the districts and central bureaus with 4,616 full-time employees and more than $1 billion in annual construction programs.
Claim Your E-Proceedings
Activate Your Online Access to International Airfield and Highway Pavements Conference Proceedings.

Eligible conference attendees have until 9/30/2019 to claim your International Airfield and Highway Pavements Conference proceedings.

Once claimed, you will always have access.

Get Started! See postcard in your registration packet.

Use token: airfield19

Detailed instructions and screenshots are also available at https://ascelibrary.org/ahp2019-token
If you have questions, please contact ASCE Customer Service by telephone 1-800-548-2723 (U.S. and Canada) or 1-703-295-6300 (other locations), or email ascelibrary@asce.org.
Concurrent Technical Sessions

**Monday, July 22**
10:30 a.m. – 12:00 p.m.
1:30 p.m. – 3:00 p.m.
3:30 p.m. – 5:00 p.m.

**Tuesday, July 23**
10:30 a.m. – 12:00 p.m.
1:30 p.m. – 3:00 p.m.
3:30 p.m. – 5:00 p.m.

**Wednesday, July 24**
8:30 a.m. – 10:00 a.m.
10:30 a.m. – 12:00 p.m.

**Professional Development Hours (PDHs)**

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

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

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

The system will remain open for 365 days from the receipt of the registration email to allow you time to make any adjustments and print your certificate and transcript. After that 365-day mark, you will need to contact ASCE Customer Service at registrations@asce.org or (800) 548-2723 to modify your conference attendance information.
**Sunday, July 21**

<table>
<thead>
<tr>
<th>1:00 p.m. – 5:00 p.m.</th>
<th>Performance Engineered Mixtures (PEM) Workshop, Merchants Hotel</th>
</tr>
</thead>
<tbody>
<tr>
<td>1:00 p.m. – 5:00 p.m.</td>
<td>Airport Pavement Evaluation Software Workshop – PAVEAIR, BAKFAA and ProfFAA, Steamboat Hotel</td>
</tr>
<tr>
<td>6:00 p.m. – 7:30 p.m.</td>
<td>Welcome Reception in Exhibit Hall, Wolf Point</td>
</tr>
</tbody>
</table>

**Monday, July 22**

<table>
<thead>
<tr>
<th>7:30 a.m. – 8:30 a.m.</th>
<th>Light Continental Breakfast, Wolf Point</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:30 a.m. – 10:00 a.m.</td>
<td>Opening Plenary Session Welcome and Awards, Sauganash Grand Ballroom</td>
</tr>
<tr>
<td>Omer Osman, Acting Secretary, Illinois Department of Transportation Jamie L. Rhee, Commissioner, Chicago Department of Aviation</td>
<td></td>
</tr>
<tr>
<td>10:00 a.m. – 10:30 a.m.</td>
<td>Networking Break in the Exhibit Hall, Wolf Point</td>
</tr>
</tbody>
</table>

---

### Concurrent Technical Session

**Pavement Condition Assessment (A1)**

- **Moderator:** John Harvey, University of California at Davis
- **Pavement Condition Data from Traffic Speed Deflectometer for Network Level Pavement Management**
  - Shivshree Shrestha, Gerardo Flintsch, and S. K. Katicha, Virginia Tech
- **Backcalculation of Raptor (RWD) Measurements and Forward Prediction of FWD Deflections Compared with FWD Measurements**
  - Stine Madsen and Niels Pedersen, Technical University of Denmark
- **Field Performance of Deep-Learning Based Fully Automated Distress Surveys**
  - Guangwei Yang and Kelvin Wang, Oklahoma State University; Baoxian Li, Yangyong Sun, and Allen Zhang, Guangdong Academy of Building Research; Kenneth J. O’Connell, O'Connell & Lawrence, Inc.
- **FHWA Long Term Pavement Performance (LTPP) Program and Competition**
  - Debbie Walker, FHWA

**Asphalt Mixture Testing and Characterization (B1)**

- **Moderator:** Silvia Caro, Universidad de los Andes, Colombia
- **Comparing Asphalt Properties for Samples Produced in the Laboratory and Different Production Plants**
  - Greg White, University of the Sunshine Coast; Andrew Kidd, BCC
- **Effects of Aging Protocols on the Discrimination Potential of a Cracking Test in Asphalt Mixtures**
  - Kevin Hall, Elvis Castillo-Camarena, and Nathan Parnell, University of Arkansas

**Three-Dimensional Balanced Mix Design for Asphalt Concrete**

- Ulfman Mohamed Ali, Jaime Hernandez, and Imad Al-Qadi, UIUC

**Evaluation of Interchangeability of Results from Available Overlay Tester Devices**

- Victor Garcia, Sohail Nazarian, Imad Abdallah, and Jose Garibay, The University of Texas at El Paso

**Relationship Between Aggregate Packing Characteristics and Compactability of Hot-Mix Asphalt Mixes**

- Julius J. Komba, James Maina, Wynand Steyn, and Emilie Horak, University of Pretoria

**Design and Analysis of Airfield Pavements (C1)**

- **Moderator:** Greg Cline, FAA
- **HMA Mix Design and Characterization for Airport Pavement Thickness Design - Past, Present & a Look into Future**
  - Navneet Garg, FAA
- **Chasing the Airplane: History of Airfield Pavement Design in the U.S.,**
  - Timothy Rushing, U.S. Army ERDC
- **Artificial Neural Network Models for Airport Rigid Pavement Top-down Critical Stress Predictions: Sensitivity Evaluation**
  - Adel Rezaei-Tarahomi, Hail Ceylan, Kasthurirangan Gopalakrishnan, Sungghan Kim, and Othman Kaya, Iowa State University; David R. Brill, FAA
- **toward a French Rational Method for Airfield Rigid Pavement Design**
  - Jessica Clavel and Michael Brouin, STAC; Jean-Michel Piau, IFSTTAR
- **Comparing Rigid and Flexible Airport Pavements Designed by Different Methods**
  - Greg White and Reeve Balesstra, University of the Sunshine Coast; Paul McCullagh, Beca

**Artificial Intelligence and Machine Learning Applications (D1)**

- **Moderator:** Eyad Masad, Texas A&M University at Qatar
- **Rapid Quantification of Sawcut Damage Using Deep Learning and Rgb-d Images**
  - Quan Tran and Jeffery Roesler, UIUC
- **Predicting Pavement Roughness as a Performance Indicator Using Historical Data and Artificial Intelligence**
  - Mehran Mazzari and Joseph Lucey, California State University Los Angeles; Aria Fathi, The University of Texas at El Paso
- **Fatigue Endurance Limit Model Utilizing Artificial Neural Network for Asphalt Concrete Pavements**
  - Mayzen Iszid and Meina Soulaman, University of Texas at Tyler
- **Parametric Study of Pavement Deterioration Using Machine Learning Algorithms**
  - Aria Fathi and Mahdi Saghati, The University of Texas at El Paso; Mehran Mazzari, California State University Los Angeles; Arash Hosseini, Temple University; Saurav Kumar, Texas A&M AgLife El Paso
- **Artificial Intelligence Based Design of Pavement Mixes**
  - Rajib Mallick, Nivedya Kottayi, and Ramkumar Veeraragavan, Worcester Polytechnic Institute
### Monday, July 22 (continued)

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>12:00 p.m. – 1:30 p.m.</td>
<td>Lunch Buffet in the Exhibit Hall, Wolf Point</td>
</tr>
<tr>
<td>1:30 p.m. – 3:00 p.m.</td>
<td>Concurrent Technical Session</td>
</tr>
<tr>
<td></td>
<td>Pavement Management Systems (A2)</td>
</tr>
<tr>
<td></td>
<td>Moderator: Kevin Hall, University of Arkansas</td>
</tr>
<tr>
<td></td>
<td>Pavement Management System Informs</td>
</tr>
<tr>
<td></td>
<td>Decision-making at New Jersey Turnpike Authority, Laura Wagner-Bartz and John Benda, FHITB</td>
</tr>
<tr>
<td></td>
<td>Asset Management Approach for Transport Infrastructure Networks - The AM4INFRA Project, Darko Kakol, Slovenian National Building and Civil Engineering Institute</td>
</tr>
<tr>
<td></td>
<td>Pavement Structural Evaluation at Network Level Pavement Management – a Case Study, Mahdi Nasimifar and Nadarajah Sivaneswaran, FHWA; Senthilmurugan Thyagarajan, ESC Inc.</td>
</tr>
<tr>
<td></td>
<td>Real Time Pavement Asset Management and Integration with Work Order Management, Abbas Kachwalla, Mark Hughes, and Katherine Keegan, AECOM</td>
</tr>
<tr>
<td></td>
<td>Development of a Comprehensive Performance Models from a Large Longitudinal PMS Data Set, Jeremy Lea, Ashkan Saboori, Arash Saboori, John Harvey, Weizhuo Xiong, Mayra Velasquez, and Changmo Kim, University of California at Davis; Zhongwen Wang, California Department of Transportation</td>
</tr>
<tr>
<td></td>
<td>Asphalt Mixture Modification (B2)</td>
</tr>
<tr>
<td></td>
<td>Moderator: Francesco Canestrari, Università Politecnica delle Marche</td>
</tr>
<tr>
<td></td>
<td>Impact of Asphalt Modifier Dosage on Modified Binder Rheology and Chemistry with Long-term Aging, Punit Singhvi, Hasan Ozer, and Imad Al Qadi, UIUC; Ahmet Karakas; Kamal Hossain, Memorial University of Newfoundland</td>
</tr>
<tr>
<td></td>
<td>A Comparative Study between the Effectiveness of a Softer Grade Binder and a Rejuvenating Agent in Hot Mix Asphalt with Reclaimed Asphalt Pavement, Shams Arafat and Nazimuddin Wasiuddin, Louisiana Tech University</td>
</tr>
<tr>
<td></td>
<td>Characterization of Asphalt Concrete Containing Low Content of Crumb Rubber Modifier, Yanlong Liang, John Harvey, David Jones, and Rongzong Wu, University of California at Davis; Charles D. Suszko and Srikant Balasubramanian, California State Transportation Agency</td>
</tr>
<tr>
<td></td>
<td>Laboratory Investigation of Low Temperature Performance of the SBS Modified Mixtures, Md Amanul Hasan and Rafiqul Tarefder, University of New Mexico</td>
</tr>
<tr>
<td></td>
<td>Investigating Rejuvenation Mechanisms for Reclaimed Asphalt Pavement, Mehdi Zadshir, Columbia University; Shahrzad Hosseinnezhad and Daniel Oldham, NC A&amp;T University; Ellie Fini, Arizona State University</td>
</tr>
<tr>
<td>3:00 p.m. – 3:30 p.m.</td>
<td>Networking/Coffee Break in the Exhibit Hall, Wolf Point</td>
</tr>
<tr>
<td></td>
<td>Case Studies in Airfield Pavement Applications (C2)</td>
</tr>
<tr>
<td></td>
<td>Moderator: Navneet Garg, FAA</td>
</tr>
<tr>
<td></td>
<td>Aircraft Hardstand Ramp Expansion at DFW International Airport, Manuel Berjano and Kara Bymers, ATKINS/SNC-Lavalin Group</td>
</tr>
<tr>
<td></td>
<td>Case Study – a State of the Art, Reinforced Soil Slope System for Runway End Safety Area at Kannur International Airport, India, Satya Kumar Sunkavalli, Budhmal Jain, and Manoj Tipnis, Larsen &amp; Toubro Limited</td>
</tr>
<tr>
<td></td>
<td>Effective Airfield Pavement Repairs- BWI Airport Case Study, Alan Yazzalani and Vidya Sagar Bethu, AECOM</td>
</tr>
<tr>
<td></td>
<td>Evaluation, Design and Build Taxiway a Reconstruction St Kitts Airport, Enrol Douglas, EFDouglass and Associates; Michael McNerney, University of Texas at Arlington; Nicholas Reck and Alvaro Ulicio, Dynatest North America, Inc.</td>
</tr>
<tr>
<td></td>
<td>Runway Pavement Performance in Unusual Conditions, Jozef Grajek, EJG Aviation</td>
</tr>
<tr>
<td></td>
<td>Innovative Technologies (D2)</td>
</tr>
<tr>
<td></td>
<td>Moderator: Erol Tutumluer, UIUC</td>
</tr>
<tr>
<td></td>
<td>Developing an Enhanced Thermoelectric Energy Harvesting Approach for Asphalt Pavement, Seyed Amid Tahami, Mohammadreza Gholiikhan, Reza Nasouri, Smer Dessouky, and A. T. Papagiannakis, University of Texas at San Antonio</td>
</tr>
<tr>
<td></td>
<td>Novel Methodology of Using UAV-CRP Technology for Reducing the Pavement Construction Project Delays, Surya Surat Chandra Congress and Anand Puppula, University of Texas Arlington</td>
</tr>
<tr>
<td></td>
<td>Piezoelectric Energy Harvesting from Roadway, Hao Wang, Rutgers University</td>
</tr>
</tbody>
</table>
### Monday, July 22 (continued)

<table>
<thead>
<tr>
<th>TRACK-A: DESIGN AND MANAGEMENT OF PAVEMENTS, Steamboat Hotel</th>
<th>TRACK-B: PAVEMENT MATERIALS CHARACTERIZATION, Sauganash East</th>
<th>TRACK-C: AIRFIELD PAVEMENTS, Sauganash West</th>
<th>TRACK-D: INNOVATIONS AND SUSTAINABILITY, Western Stage</th>
</tr>
</thead>
<tbody>
<tr>
<td>3:30 p.m. – 5:00 p.m. Concurrent Technical Session</td>
<td></td>
<td></td>
<td>Case Studies (D3)</td>
</tr>
</tbody>
</table>

**Rehabilitation and Preservation of Asphalt Pavements (A3)**

**Moderator:** Karim Chatti, Michigan State University

- 6-Year Study on Micro Surfacing Performance, Adriana Vargas-Nordcbeck, National Center for Asphalt Technology
- Effect of Thin Overlays on the Structural Performance of Cold Recycled Bases for High Traffic Volume Roads, Md Rahman and Adriana Vargas-Nordcbeck, National Center for Asphalt Technology (NCAT)
- Maintenance and Rehabilitation of Paved, Low-traffic County Roads in Norway, Anders Sveen and Vegar Antonsen, Norwegian Public Roads Administration
- Comparative Evaluation of Hot Applied and Emulsion-based Chip Seals, Yogesh Kumbargeri and M. Emin Kutay, Michigan State University; Iker Bax, Virginia Transportation Research Council

**Concrete Pavement Technology (B3)**

**Moderator:** Jeffery Roesler, UIUC

- Material Optimisation and Large-scale Investigations of Precast Concrete Slabs, Joerg Patzak and Paul Bolz, TU Dresden
- Precast Concrete Pavement Current Practices - 2019, Shiraz Iayubi, Advanced Concrete Pavement Consultancy LLC
- Potential Technical and Cost Benefits of Two-lift Concrete Paving, Jiong Hu, University of Nebraska-Lincoln
- The Future of Concrete Pavement Imagined, Leif Wahne and Gerald Voigt, American Concrete Pavement Association
- Faulting Prediction for Unbonded Concrete Overlays, John W. DeSantis and Julie Vandenbossche, University of Pittsburgh

**Airfield Pavement Condition Assessment (C3)**

**Moderator:** Cyril Fabre, Airbus

- Asphalt Pavement Groove Life Analysis at the National Airport Pavement Test Facility, Qiang Wang, General Dynamics Information Technology (GDIT); Albert Larkin, Federal Aviation Administration
- Full-Scale Tests of Unbonded PCC Overlays at the FAA’s National Airport Pavement Test Facility, Mesbah Ahmed and Hao Yin, Gemini Technologies, Inc.; David Brill, Federal Aviation Administration
- A Streamlined Probabilistic Methodology for Risk Assessment of Early Cracking in Airfield Concrete Pavement Design, Fabrizio D’Amico, and Luca Bianchini Ciampoli, Roma Tre University; Fabio Tosti, University of West London (UWL)
- Falling Weight Deflectometer Tests Back-analysis Using Levenberg-marquardt Optimization, Sérgio Raposo and Geoffrey Rowe, ABATECH

**Case Studies (D3)**

**Moderator:** Brian Diefenderfer, Virginia Transportation Research Council

- SPS-2 Strategic Study of Structural Factors for Rigid Pavements, Kevin Senn and Timin Punnackal, NCE; Steven Trisch, National Concrete Pavement Technology Center
- Design and Construction Takeaways from PMS Performance Modeling, Jeremy Lea, John Harvey, Ashkan Saboori, David Jones, and Rongzong Wu, University of California at Davis
- Developing Performance Related Specifications for a Large California Freeway Project, Rongzong Wu, John Harvey, Hesamaddin Nabizadeh, Angel Mateos, and David Jones, and Mohamed Elkashef, University of California at Davis; Srikanth Balasubramanian, California State Transportation Agency; Suha Suthar, Raghubar Shrestha, and Kee Foo, California Department of Transportation
- Full-Scale Probabilistic Assessment of Asphalt Surface Treatments: The Case Study of Lee Road 159, Farhang Jalali, Adriana Vargas-Nordcbeck, and Mostafa Nakhaei, National Center for Asphalt Technology (NCAT)

---

5:15 p.m. – 6:00 p.m. **Poster Session, LaSalle**

5:15 p.m. – 6:15 p.m. **Prepare to Profess: Pavements Faculty Session, Western Room**

6:30 p.m. – 9:00 p.m. **Chicago River Architecture Boat Tour**

See Special Events Tab for details
Tuesday, July 23

7:30 a.m. – 8:30 a.m. Light Continental Breakfast, Wolf Point

8:30 a.m. – 10:00 a.m. Carl L. Monismith Award and Lecture: Pavement Preservation ASCE Grand Challenge Panel, Sauganash Grand Ballroom

10:00 a.m. – 10:30 a.m. Networking/Coffee Break in the Exhibit Hall, Wolf Point

<table>
<thead>
<tr>
<th>TRACK-A: DESIGN AND MANAGEMENT OF PAVEMENTS, Steamboat Hotel</th>
<th>TRACK-B: PAVEMENT MATERIALS CHARACTERIZATION, Sauganash East</th>
<th>TRACK-C: AIRFIELD PAVEMENTS, Sauganash West</th>
<th>TRACK-D: INNOVATIONS AND SUSTAINABILITY, Western Stage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concurrent Technical Session</td>
<td>10:30 a.m. – 12:00 p.m.</td>
<td>10:30 a.m. – 12:00 p.m.</td>
<td>10:30 a.m. – 12:00 p.m.</td>
</tr>
</tbody>
</table>

Presented by Gary Hicks, Ph.D. ASCE Grand Challenge Panel moderated by K. N. Gunalan, Ph.D., P.E., FASCE, D.GE., ASCE President 2020 Panelists: Thomas Harman, Director, Center for Accelerating Innovation, Federal Highway Administration; Jeffrey S. Gagnon, M.ASCE, Airport Pavement Section Manager of Federal Aviation Administration (FAA) Airport Technology Research & Development Branch; Paul A. Loete, P.E., Director of Highways Project Implementation, Illinois Department of Transportation
### Tuesday, July 23 (continued)

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>12:00 p.m. – 1:30 p.m.</td>
<td>Lunch Buffet in the Exhibit Hall, Wolf Point</td>
</tr>
<tr>
<td>1:30 p.m. – 3:00 p.m.</td>
<td>Concurrent Technical Session</td>
</tr>
<tr>
<td><strong>TRACK-A: DESIGN AND MANAGEMENT OF PAVEMENTS, Steamboat Hotel</strong></td>
<td>Unbound Layers Characterization (B5)</td>
</tr>
<tr>
<td>Moderator:</td>
<td>Mehran Mazari, California State University, Los Angeles</td>
</tr>
<tr>
<td>Unbound Layers Characterization (B5)</td>
<td>Moderator: Mehran Mazari, California State University, Los Angeles</td>
</tr>
<tr>
<td></td>
<td>Evaluating Equilibrium Matric Suctions Under Pavement System Based on Thornthwaite Moisture Index (TMI), Amir Hossein Javid and Rifat Bulut, Oklahoma State University</td>
</tr>
<tr>
<td></td>
<td>Potential of RAP as Aggregate Base and Subbase in the Context of Bangladesh, Mohammad Hassain, Bradley University; Mohammad Ismail, Sheikh Rahman, Sakib Hassain, Fahim Faisal, and Mahadi Hasan, Military Institute of Science and Technology</td>
</tr>
<tr>
<td></td>
<td>Comparison Between HWD Backcalculated Subgrade dynamic Moduli and In-situ Static Bearing Capacity Tests, Michael Brouin, Amir Sadoun, and Alexandre Duprey, French Civil Aviation Technical Center (STAC)</td>
</tr>
<tr>
<td></td>
<td>Frost Depth Penetration and Frost Heave in Frost Susceptible Soils, Wade A. Lein, U.S. Army Corps of Engineers, Engineer Research and Development Center</td>
</tr>
<tr>
<td></td>
<td>Prediction of Permanent Deformation of Flexible Pavement’s Unbound Granular Materials Using Elasto-plastic Model SANISAND, Ricky Tolentino, University of South Australia</td>
</tr>
<tr>
<td><strong>TRACK-B: PAVEMENT MATERIALS CHARACTERIZATION, Sauganash East</strong></td>
<td>Structural Analysis of Airfield Pavements (C5)</td>
</tr>
<tr>
<td>Moderator:</td>
<td>Manuel Bejarano, Atkins</td>
</tr>
<tr>
<td>Structural Analysis of Airfield Pavements (C5)</td>
<td>Moderator: Manuel Bejarano, Atkins</td>
</tr>
<tr>
<td></td>
<td>Paradox: Why the Heaviest Commercial Airplane Remains the Most Pavement Friendly Aircraft at Large Hub Airports?, Cyril Faire and Gerard Vaur, Airbus SAS</td>
</tr>
<tr>
<td></td>
<td>Benchmark Comparative Study of FE-PANDA – PCASE Tools Used for Evaluating Structural Performance of Heavy Duty Airfield Pavements, Wayne Hodo and John Rushing, U.S. Army ERDC, Masoud Darabi and Rashmi Kola, University of Kansas</td>
</tr>
<tr>
<td></td>
<td>Effects of Gear Configuration and Pavement Temperature on Airfield Asphalt Pavement Stresses, Jeffrey Gagnon and Richard Ji, Federal Aviation Administration</td>
</tr>
<tr>
<td></td>
<td>Analysis of Thermal-induced Reflective Cracking Potential in Airfield Composite Pavements, Hao Wang and Pengyu Xie, Rutgers University</td>
</tr>
<tr>
<td><strong>TRACK-C: AIRFIELD PAVEMENTS, Sauganash West</strong></td>
<td>Advances in Asphalt Materials and Modification (DS)</td>
</tr>
<tr>
<td>Moderator:</td>
<td>Ahmed Faheem, Temple University</td>
</tr>
<tr>
<td>Advances in Asphalt Materials and Modification (DS)</td>
<td>Moderator: Ahmed Faheem, Temple University</td>
</tr>
<tr>
<td></td>
<td>Permanent Deformation Characteristics of BRA Modified Asphalt Paving Mixtures Using Dynamic Creep Test Analysis, Ainaeleh Nejma and Hamid Nikraz, Curtin University; Muhammad Karami, University of Lampung</td>
</tr>
<tr>
<td></td>
<td>Performance Evaluation of Hot Mix Biobinder, Ran Li, Junna Xin, and Jinwen Zhang, Washington State University; Kun Zhang, California State University</td>
</tr>
<tr>
<td></td>
<td>Tribological Characterization of Graphene Nano-platelet (GNP) Bituminous Binders, Lorenzo Paolo Inggrassia, Università Politecnica delle Marche; Francesco Canestrati, Polytechnic University of Marche, Nihai Marasteanu, Xichao Lu</td>
</tr>
<tr>
<td></td>
<td>Effect of Nanomaterials on Cracking and Rutting Resistance of HMA, Doba Geda, Bishal Karki, Anthony Berg, and Robeara Melaku, University of North Dakota; Rajib Sahai, Florida International University</td>
</tr>
<tr>
<td>3:00 p.m. – 3:30 p.m.</td>
<td>Networking/Coffee Break in the Exhibit Hall, Wolf Point</td>
</tr>
</tbody>
</table>
### Tuesday, July 23 (continued)

<table>
<thead>
<tr>
<th>TRACK A: DESIGN AND MANAGEMENT OF PAVEMENTS, Steamboat Hotel</th>
<th>TRACK-B: PAVEMENT MATERIALS CHARACTERIZATION, Sauganash East</th>
<th>TRACK-C: AIRFIELD PAVEMENTS, Sauganash West</th>
<th>TRACK-D: INNOVATIONS AND SUSTAINABILITY, Western Stage</th>
</tr>
</thead>
<tbody>
<tr>
<td>3:30 p.m. – 5:00 p.m. Concurrent Technical Session</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Pavement Performance Prediction and Evaluation (A6)**  
Moderator: Yusuf Mehta, Rowan University  
Comparisons of Construction and Production Quality-based Pavement Performance Prediction Models Using Wisconsin Data, Arash Hosseini and Ahmed Faheem, Temple University  
Effect of Truck Platooning on Pavement Life and Cost, Erman Gungor and Imad Al-Qadi, UIUC  
Towards Development of PCI and IRI Models for Road Networks in the City of St. John’s, Abdualmtalib Ali, Kamal Hassian, Surya Swarna, and Amgad Hussein, Memorial University of Newfoundland; Heena Dhaman, University of New Brunswick; Mohammed Hassian, Bradley University  
A Multiple Regression Analysis – Model HMA Fatigue Cracking Using LTPP Data, Shadi Saadeh and Jacob Dethero, California State University, Long Beach  
Stabilization of Base and Subbase Layers (B6)  
Moderator: Pranshoo Solanki, Illinois State University  
Laboratory Evaluation of Silty Soils Stabilized with Lignosulfonate, Yizhou Li, Yang Zhang, Halil Ceylan, and Sunghwan Kim, Iowa State University  
Analysis of the Bearing Capacity of a Clayey Sand Stabilized with Waste Tire Fibers, Dinis Gardeiro, Rosa Luzia, Sofia Carronda, and Alexandre Simao, Instituto Politecnico de Castelo Branco  
Field Evaluation of High Level Roads with Foamed Bitumen Stabilized Base Layers, Frederico Guatimosim, Copavel Consultoria de Engenharia LTDA, Kamilla Vasconcelos, Loredi Bernucci, and Andre Kuchiishi, Politechnic School from University of Sao Paulo  
Lessons Learned from a Research Study into Crack Mitigation on Full-depth Reclaimed Pavements Stabilized with Portland Cement, Stefan Louw, David Jones, Joseph Hammack, Rongzong Wu, University of California at Davis  
Airfield Pavement Performance (C6)  
Moderator: Timothy Rushing, U.S. Army, ERDC  
Standard Specifications for Construction of Airports: AC 150/5370-10H; FY 2019 & Beyond, Gregory Cline, FAA  
Analyses of Airport Pavement Rutting Trends in FAA’s NAPTF Construction Cycle 5 Pavement Test Sections, Priyanka Sarker and Erol Tutumluer, UIUC; Navneet Garg, FAA  
Investigating Asphalt Rutting Failures in Airfield Pavements, Ghassan Chehab, American University of Beirut; Yara Hamdar, Transportation Engineering Solutions and Technologies  
New Challenges in Evaluating Bearing Capacity of Airfield Pavements, Andreas Loizos, Aggeliki Armeni, Christina Plati, and Brad Clatt, National Technical University of Athens  
Case Study Examining the Performance of Transverse Grooves in Concrete Pavement, Timothy Martin, CTLGroup; Paul Okamoto, KPFF Consulting Engineers  
Accelerated Pavement Testing (D6)  
Moderator: Ricardo Archilla, University of Hawaii at Manoa  
Rutting Performance of Cold Central Plant Recycling (CCPR) Under Accelerated Pavement Testing, Gerardo Flintsch and Wenjing Xue, Virginia Tech Transportation Institute; Brian Dierenderfer, Virginia Transportation Research Council; Benjamin Bowers, Auburn University  
Performance Evaluation of Pervious Pavement Using Accelerated Pavement Testing System, Zeyu Zhang and Guoyang Lu, RWTH Aachen University; Dawei Wang, Harbin Institute of Technology; Markus Oeser, ISAC  
Effect of HMA Thickness, Type of Base, and Moisture on an APT Test, Jose Aguiar-Moya, University of Costa Rica  
APT Analysis Based on Deflection Parameters, Jose Aguiar-Moya, Tania Ávila-Esquível, Edgar Comacho-Garita, and Luis Ioria-Salazar, Universidad de Costa Rica  
Sustainability Assessment and APT Based Field Performance of Chemically Stabilized Quarry By-Product Applications in Pavement Base Layers, Issam Qamhia, UIUC

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
</table>
| 5:15 p.m. – 6:15 p.m. | Younger Members Session: Paving the Gap Between Different Generations of Civil Engineers, Sauganash West  
Sponsored by Crawford, Murphy, & Tilly |
| 7:00 p.m. – 8:00 p.m. | Construction Institute Pavements Committee Meeting, Steamboat Hotel |
**Wednesday, July 24**

**7:30 a.m. – 8:30 a.m.**  
*Light Continental Breakfast, Sauganash Ballroom Lobby*

<table>
<thead>
<tr>
<th>TRACK-A: DESIGN AND MANAGEMENT OF PAVEMENTS, Steamboat Hotel</th>
<th>TRACK-B: PAVEMENT MATERIALS CHARACTERIZATION, Sauganash East</th>
<th>TRACK-C: AIRFIELD PAVEMENTS, Sauganash West</th>
<th>TRACK-D: INNOVATIONS AND SUSTAINABILITY, Western Stage</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Technical Program</strong></td>
<td><strong>Wednesday, July 24</strong></td>
<td><strong>Wednesday, July 24</strong></td>
<td><strong>Wednesday, July 24</strong></td>
</tr>
<tr>
<td><strong>8:30 a.m. – 10:00 a.m.</strong></td>
<td><strong>8:30 a.m. – 10:00 a.m.</strong></td>
<td><strong>8:30 a.m. – 10:00 a.m.</strong></td>
<td><strong>8:30 a.m. – 10:00 a.m.</strong></td>
</tr>
<tr>
<td>Concurrent Technical Session</td>
<td>Concurrent Technical Session</td>
<td>Concurrent Technical Session</td>
<td>Concurrent Technical Session</td>
</tr>
<tr>
<td>Construction Monitoring and Quality (A7)</td>
<td>Concrete Mixture Characterization (B7)</td>
<td>Maintenance and Repair of Airfield Pavements (C7)</td>
<td>Life-Cycle Methods in Decision Making (D7)</td>
</tr>
<tr>
<td><strong>Moderator:</strong> Zhen Leng, Hong Kong Polytechnic University</td>
<td><strong>Moderator:</strong> Peter Taylor, Iowa State University</td>
<td><strong>Moderator:</strong> Ben Cox, U.S. Army, ERDC</td>
<td><strong>Moderator:</strong> Gerald Voigt, ACPA</td>
</tr>
<tr>
<td>Development of Pay Factors to Regulate Chip Seal Construction Quality, Syed W. Haider, Yogesh Kumbargeri, and M. Emin Kutay, Michigan State University; Ilker Boz, Virginia Transportation Research Council</td>
<td>Digital Foam Index Test for Air Entrainment of Fly Ash Concrete, Aniruddha Baral and Jeffery Roesler, UIUC</td>
<td>Sensitivity Analysis of Asphaltic Drainable Base Used in Flexible Airport Pavements, Benjamin Mahaffay, David Brill, Navneet Garg, and Jeffrey Gagnon, FAA</td>
<td>Airfield Life-Cycle Assessment: Benchmark Study of a Project at JFK International Airport, Ali Butt, John Harvey, Arash Saboori, and Maryam Ostovar, University of California at Davis; Navneet Garg, Federal Aviation Administration</td>
</tr>
<tr>
<td>Reducing Pavement Project Delivery Inefficiency, Irregularity, and Cost Using Lean Construction, Information Modelling, and Monitoring Systems, Seyedali Ghahari, Bortior Kor Nii Tsui Alabi, Samuel Labi, and Hanna Kemaw, Purdue University</td>
<td>Guidance for Increasing the Use of Recycled Concrete Pavement Materials, Mark Snyder; Tom Cackler, Peter Taylor, Steven Trisch, National Concrete Pavement Technology Center</td>
<td>Laboratory and Field Evaluation of Rapid-setting Flowable Fill as a Surface Material for Airfield Pavement Repairs, William Carruth, Monica Ramsey, and Jeb Tingle, U.S. Army Engineer Research and Development Center</td>
<td>Benefit Cost Analysis (BCA) of Connected Autonomous Trucks, Seunggu Kang, UIUC</td>
</tr>
<tr>
<td>Developing Transfer Functions Between Intelligent Compaction Roller and Lightweight Deflectometer Data, Aria Fathi, Soheil Nazarian, and Cesar Tirado, The University of Texas at El Paso; Mehran Mazani, California State University Los Angeles</td>
<td>Effect of Concrete Mixture and Strength Properties on Concrete Pavement Design, Shuvo Islam, Mustaque Hossain, and Christopher Jones, Kansas State University</td>
<td>Life-Cycle Assessment of Airfield Pavement Preservation and Maintenance Schedules, Qingwen Zhou, Hasan Ozer, and Imad Al-Qadi, UIUC</td>
<td></td>
</tr>
</tbody>
</table>

**10:00 a.m. – 10:30 a.m.**  
*Networking Break, Sauganash Ballroom Lobby*
<table>
<thead>
<tr>
<th>Time</th>
<th>TRACK-A: DESIGN AND MANAGEMENT OF PAVEMENTS, Steamboat Hotel</th>
<th>TRACK-B: PAVEMENT MATERIALS CHARACTERIZATION, Sauganash East</th>
<th>TRACK-C: AIRFIELD PAVEMENTS, Sauganash West</th>
<th>TRACK-D: INNOVATIONS AND SUSTAINABILITY, Western Stage</th>
</tr>
</thead>
<tbody>
<tr>
<td>10:30 a.m. – 12:00 p.m.</td>
<td>Concurrent Technical Session</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Wednesday, July 24 (continued)</strong></td>
<td><strong>Modeling of Asphalt Pavements (A8)</strong></td>
<td><strong>Recycled Waste and Additives in Asphalt Materials (B8)</strong></td>
<td><strong>Materials and Specifications (C8)</strong></td>
<td><strong>Interaction of Pavements and Environment (D8)</strong></td>
</tr>
<tr>
<td><strong>Moderator:</strong> Tom Papagiannakis, The University of Texas at San Antonio</td>
<td><strong>Moderator:</strong> Hossein Ajideh, City of Carlsbad</td>
<td><strong>Moderator:</strong> Katie Chou, T.Y. Lin International Group</td>
<td><strong>Moderator:</strong> Hao Wang, Rutgers University</td>
<td></td>
</tr>
<tr>
<td><strong>Crack Modeling of Bituminous Mixtures Using Nonlinear Viscoelastic Cohesive Zone (NVCZ) Considering Rate-, Mode-, and Ageing-dependent Fracture, Jamilla Teixeira, Gabriela Nascimento, and Yong-Rak Kim, University of Nebraska</strong></td>
<td><strong>Evaluation of Carbon Char in Hot-mix Asphalt Mixtures, Ya Gao, Xingdong Gao, Mustaque Hossain, and Shuvo Islam, Kansas State University</strong></td>
<td><strong>Developing a Performance-based Specification for Stone Mastic Asphalt as an Ungrooved Runway Surface, Sean Jamieson and Greg White, University of the Sunshine Coast</strong></td>
<td><strong>Effect of Pavement Structural Response on Vehicle Fuel Consumption: Field Data Collection Methods and Preliminary Results, Ali Butt, John Harvey, Sampal Kedarisetty, Jeremy Lea, Darren Reger, and Dillon Fitch, University of California at Davis; Danilo Balzarini, Imen Zaabar, and Karim Chatti, Michigan State University; Erdem Coleri and Mostafa Estaji, Oregon State University; Arghavan Louhghalam, University of Massachusetts Dartmouth</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Evaluation of Fatigue Performance of Coarse and Fine Graded Asphalt Concrete Mix Employing Viscoelastic Continuum Damage (VECD) Model, Md Mehedi Hasan, Md Amanul Hasan, and Ratiqul Tarefder, The University of New Mexico</strong></td>
<td><strong>Intermediate and Low Temperature Cracking of Sulfur Modified Asphalt Mixtures, Jose Rivera-Perez, Ulthman Mohamed Ali, Hasan Ozer, and Imad Al-Qadi, UIUC</strong></td>
<td><strong>Overcoming Challenges of Applying American Airfield Pavement Standards in Europe, Ryan Hanson, HDR</strong></td>
<td><strong>Mechanistic-Based Parametric Model for Predicting Structural Rolling Resistance of Flexible Pavements, Danilo Balzarini, Karim Chatti, and Imen Zaabar, Michigan State University; Ali Butt and John Harvey, University of California at Davis</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Mechanical and Microstructural Properties of Asphalt Binders Containing Various Proportions of Reclaimed Asphalt Pavement (RAP), K. Lakshmi Roja, Eyad Masad, and Wbubalisam Yiming, Texas A&amp;M University at Qatar</strong></td>
<td><strong>Modification of Bitumen Emulsion with Waterborne Epoxy Resin – Produce High-performance Cold-mix Asphalt, Zhen Leng and Rui Li, The Hong Kong Polytechnic University</strong></td>
<td><strong>Airfield Pavement Design and Construction Specifications for New T5 Parking Aprons and Taxiways at Changi International Airport, Singapore, George Nowak, Hatch Corporation</strong></td>
<td><strong>A Coupled Pavement-urban Canyon Model for Assessing Cool Pavements, Sushobhan Sen and Jeffery Roesler, UIUC</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Effects of Dry-Wet Cycles on the Viscoelastic Properties of an Asphalt Mixture, Silvia Caro, Eduardo Rueda, Javier Montenegro, Bernardo Caicedo, Universidad de los Andes</strong></td>
<td><strong>Performance Characterization of Asphalt Concrete Mixtures Modified with a Latex Additive, Victor Garcia, Mauricio Valenzuela, Alexandra Torres, Imad Abdallah, and Soheil Nazarian, The University of Texas at El Paso</strong></td>
<td><strong>Concrete Mixtures for Airports Pavement, Peter Taylor and Gordon Smith, National Concrete Pavement Technology Center</strong></td>
<td><strong>Overview of Pavement Life Cycle Assessment Use Phase Research at the MIT Concrete Sustainability Hub, James Mack, CEMEX; Mehdi Akbarian, Franz-Josef Ilm, Xin Xu, Randolph Kirchain, and Jeremy Gregory, MIT Concrete Sustainability Hub; Arghavan Louhghalam, UMass Dartmouth</strong></td>
<td></td>
</tr>
</tbody>
</table>

12:00 p.m. – 1:00 p.m.  
Lunch On Your Own  
1:00 p.m. – 5:00 p.m.  
**Technical Tours:**  
O’Hare Airport- Airside-ORD 21  
IDOT Highway- Jane Byrne Interchange  
Reconstruction, See Technical Tour tab for details
SAVE THE DATE

GEO-CONGRESS 2020
Minneapolis, Minnesota | February 25-28

Vision, Insight, Outlook

www.geocongress.org
**Poster Hall Hours**
Sunday, July 21 | 6:00 p.m. – 7:30 p.m., LaSalle
Monday, July 22 | 7:30 a.m. – 6:00 p.m., LaSalle
Tuesday, July 23 | 7:30 a.m. – 3:30 p.m., LaSalle

**Poster Session**
Monday, July 22 | 5:15 p.m. – 6:00 p.m., LaSalle
Poster presenters are asked to stand by their poster during this session only, but the posters will be available other times.

**Poster Topics**
Advanced Analysis of Pavements
Asphalt Binder Characterization and Modification
Asphalt Mixture Modification
Asphalt Mixture Testing and Characterization
Concrete Mixture Characterization
Concrete Pavement Technology
Construction Practices and Quality Control
Design and Analysis of Airfield Pavements
Innovative Techniques in Pavement Construction
Mechanistic Analysis and Design of Pavements
Pavement Performance and Condition Assessment
Pavement Surface Characteristics
Recycled and Waste Materials
Rehabilitation and Preservation of Pavements
Stabilization of Unbound Layers
Sustainability Assessment of Pavement System
Unbound Layers Characterization
2019-2020 T&DI/ASCE-LTPP
International Data Analysis

Theme
Use the LTPP Data to Evaluate a Question or Concern for Your Region or State

Challenge
Effect of Overweight Vehicles on Pavement Performance Using the LTPP Traffic Data

All-Expense Paid Trip to Attend TRB Annual Meeting in DC.

Undergraduate $500
Graduate $1,000
Partnership $1,000
Aramis López Challenge $2,000

Deadline to Submit Papers | July 1, 2020 | ELECTRONIC FORMAT ONLY
All papers must be sent to Debi Denney at ddenney@asce.org or ltpp@asce.org

HTTPS://GOO.GL/PRRGGK
Advanced Analysis of Pavements

- UNLEA a Multilayer Elastic Program Script in Scilab, Luis R. Vasquez-Varela and Francisco Garcia-Orozco, Universidad Nacional de Colombia Sede Manizales
- Comparative Analysis of Flexible and Composite Pavement Design for Desert Road in Jordan, Dalia Bannoura, Ministry of Public Works and Housing, Laith Tashman and Khair Al-Deen Bsisu, The University of Jordan
- A Comparison of Concrete Pavement Responses Using Finite Element Method with Foundation Springs and 3-D Solid Elements, Nancy Aguirre, Abbasali Taghavi Ghaesari, and Cesar Carrasco, University of Texas at El Paso
- Pavement Structural Evaluation Using Dynamic Modulus (E*) Approach, Konstantina Georgouli, Andreas Loizos, and Christina Plati, National Technical University of Athens
- Investigation of the Effect of Uncertainty in Dynamic Modulus of Asphalt Concrete on Pavement Performance Prediction Using Mechanistic-empirical Method, Hussein Kassem, Ghassan Chehab, Shadi Najjar, and Jad Khalil, American University of Beirut
- Performance Prediction Using Mechanistic-Empirical Method

Asphalt Binder Characterization and Modification

- Application of Modified Binder Bond Strength Test for Evaluating the Effects of Curing, Moisture, and Aging on Tensile Bond Strength of Tack Coats, Rouzbeh Ghabchi and Buddhika P. Rajapaksha, South Dakota State University
- Comparison of Binder Content Determination by Centrifuge Extractor and Ignition Test Methods for HMA, José Neves, Universidade de Lisboa
- Effect of Nanopolymer on Binder and Mix Performance, Abolghasem Yazdani, Robeam Melaku, and Daba Gedafa, University of North Dakota
- Chemical-Microstructural-Mechanical Tests and Kinetic Analyses to Evaluate Binder Aging: Laboratory vs. Field, Hamzeh Haghshenas, Nebraska Department of Transportation, Yong-Rak Kim, University of Nebraska
- Critical Properties of Asphalt Binders in the High Stiffness Region, Geoffrey M. Rowe, Abatech
- Identification and Evaluation of the Elastomeric, Plasticomeric and Chemical Modifiers in Asphalt Binders, Roksana Hassain, Nazimuddin Wasiuddin, and Shams Arafat, Louisiana Tech University
- The Effect of Asphalt Binder Softeners, and Anti-oxidation Additives on Asphalt Aging, Ahmed Faheem, Ahmed El Khiat, and Mohammed Alsafih, Temple University
- Atomic Absorption Spectrometer and Inductively Coupled Plasma for Detection of Contaminant Materials in Asphalt Cement in Comparison with X-ray Fluorescence Analysis, Ya Gao and Minkyum Kim, Kansas State University
- Moisture Susceptibility of Nano Al2O3 and SiO2 Modified Asphalt Mixtures, Mehmet Salam, Suleyman Demirel University; Sebnem Karahancer, E. Eriskin; S. Terzi; M.Y. Akbas; A. Cengizhan

Asphalt Mixture Testing and Characterization

- A Hot Mix Asphalt Design Guidance for Mix Performance Related Specifications, Rongzong Wu, John Harvey, Angel Mateos, and Hesamoddin Nabizadeh, University of California, Davis
- Cracking and Rutting Performance of Field and Laboratory HMA Mixes, Daba Gedafa, Anthony Berg, Bishal Karki, and Robeam Melaku, University of North Dakota; Rajib Saha, Florida International University
- Comparative Study of Adhesive Properties of Polyurethane- and Bitumen-Aggregate, Bin Hong, Junling Gao, and Dawei Wang, Harbin Institute of Technology; Mingyang Gong, Northeast Forestry University
- Effects of Surface Treatments and Thermal Cycling on Mechanical Properties of Basalt Fiber Reinforced Vinyl Ester Resin Composite Materials, Qilinx Yang, Bin Hong, Tianshuai Li, and Dawei Wang, Harbin Institute of Technology; Zhimin Ma
- Evaluation on the Hydraulic Properties of Porous Pavement Material Based on Computed Tomography Scanning Technology, Guoyang Lu, RWTH Aachen University; Dawei Wang, Harbin Institute of Technology
- A Flexible Functional Form for Modeling Phase Angle of Asphalt Concrete Mixes, Adrian R. Archilla, University of Hawaii at Manoa
- Study on the Tensile Properties of Polyurethane Rubber Particle mixture Based on the Direct Tensile Test, Junfeng Gao and Zhanping You, Michigan Technological University; Haining Wang and Xianwei Meng, Chang’an University
- Development of Surrogate Test for Design and Quality Control of Asphalt Pavement, Liya Jiao, John Harvey, David Jones, Rongzong Wu, Yanlong Liang, University of California, Davis
Development of Specifications to Compact Field Mixes in the Lab for Performance Related Testing, Mohamed Elkashef, Hesamaddin Nabizadeh, Rongzong Wu, John Harvey, and Angel Mateos, University of California, Davis; Irwin Guada, University of California, Berkeley

Asphalt Fatigue Test Using Incremental Repeated-load Permanent Deformation (IRLPD), Haleh Azari and Alaeddin Mahseni, Pavement Systems LLC

Rutting Potential of Parameters Using Hamburg Wheel Tracking Device (HWTD), Matias M. Mendez Larrain, Roca Engineering, Inc.; Rafiqul A. Tarefder, The University of New Mexico


Asphalt Concrete Rutting Modeling Using Hamburg Wheel Tracking Device (HWTD), Matias M. Mendez Larrain, Roca Engineering, Inc.; Rafiqul A. Tarefder, The University of New Mexico

Relationship Between Microstructure Characteristics and Structural Capacity of Porous Friction Course (PFC) Mixtures, Laura Manrique-Sanchez and Silvia Caro, Universidad de los Andes

Effect of Compaction on Morphoscopic Structure of Asphalt Mixture Based on X-ray Computed Tomography, Transhua Li and Dawei Wang, Harbin Institute of Technology; Marc Schnitzer and Pengfei Liu, RWTH Aachen University; Markus Oeser, ISAC

Numerical Modeling of Asphalt Mixture Healing, Amir Bahadori and Balasingam Muhunthan, Washington State University

Evaluation of Pervious Concrete Pore Network Properties Using the Watershed Segmentation Approach, Ghim Ping Ong and Ajayshankar Jagadeesh, National University of Singapore; Yu-Min Su, National Kaohsiung University of Science and Technology

Mixture Design of Exposed Aggregate Concrete Overlay, Young Kyu Kim, Institute for Disaster Prevention; Makara Rith and Seung Woo Lee, Gangneung-Wonju National University

Creep in Concrete Pavement Slabs: Implication to Design and Analysis, Ya Wei, Department of Civil Engineering

Concrete Pavement Technology

Evaluation of Radio Frequency Interference Potential of Electrically Conductive Concrete for Heated Pavement Systems, Wei Shen, Thel Mani Mina, Halil Ceylan, and Sungwhwan Kim, Iowa State University

Precast Concrete Pavement Case Studies, Shiraz Tayabji, Advanced Concrete Pavement Consultancy LLC

Impact of Moisture Infiltration on Rigid Pavement Performance and Timing for Resealing Joints, Syed W. Haider, Michigan State University

Prediction of the Long-Term Coefficient of Thermal Expansion of Paving Concrete, Gauhar Sabih and Rafiqul Tarefder, University of New Mexico

Construction Practices and Quality Control

Review of Acceptance Schedule of Payment for Asphalt Pavements in Alabama, Akeem A. Ajede, Fan Yin, and Naim H. Tran, National Center for Asphalt Technology; Lyndi Blackburn

Quality Assurance in Flexible Pavements in Colombia, Luz Marina Torrado and Norma Cristina Solarte, Universidad Pontificia Bolivariana; Maria Fernanda Serrano, Pontificia Universidad Javeriana; José Alberto Rondón, Universidad Industrial de Santander

Tack Coat Best Practices for Maximum Performance, Mark Buncher, Asphalt Institute

Best Practices for Constructing and Specifying Asphalt Longitudinal Joints, Mark Buncher, Asphalt Institute

Concrete Mixture Characterization

Pozzolanic Activity of Incorporated Sustainable Concrete Materials for Rigid Pavements, Amir Alarab, Ghassan Chehab, and Bilal Hamad, American University of Beirut

Flexural Fatigue Behavior of High Volume Fly Ash Concrete Under Constant Amplitude, Compound and Variable Amplitude Loading, Aravindikumar Harwalkar and Sidramappa Avanti, PDA College of Engineering Kalaburagi, Karnataka, India

A New Developed Shape Memory Polyurethane Sealant for Concrete Pavement Joints, Shuang Shi and Too Xu, Nanjing Forestry University; Dawei Wang, Harbin Institute of Technology; Markus Oeser, ISAC
Design and Analysis of Airfield Pavements

Design of Emergency Airstrip on an Expressway in India, Anurag Anand, BSCPL Infrastructure Limited; Mukesh Ravichandran, North Carolina State University; Sridhar Raju, Birla Institute of Technology and Science, Pilani, Hyderbad Campus; Kashinath Gumte, Consulting Engineering Services (India) Private Limited

Overcoming Challenges of Applying American Airfield Pavement Standards in Europe, Ryan Hanson, HDR

Influence of Coarse Protrusion on Skid Resistance Performance of Cement Concrete Pavement, Lin Qi, Junsheng Liu, Xinmin Zhang, and Fangran Zhao, Civil Aviation University of China

Dynamic Evaluation of Bearing Capacity of a Taxiway Bridge Under Aircraft Taxing, Qian Dong, Lin Qi, Xinmin Zhang, and Fangran Zhao, Civil Aviation University of China


Geotechnical Centrifuge Models of Airport Flexible Pavements Under Repeated Aircraft Loads, Ghim Ping Ong, National University of Singapore; Siang Huat Goh; Chong Hun Yeo

A Design Approach on the Use of Lightweight Filling Materials for Construction of an Aircraft Deicing Station at a Critical Soil Site: A Case Study, Fabrizio D’Amico, Luca Bianchini Ciampoli, and Valeria Gagliardi, Roma Tre University; Fabio Tosti, University of West London

Innovative Techniques in Pavement Construction

Investigation on Environmental-friendly Near-infrared Reflective Coatings and Their Performance for Cool Pavement, Hui Li and Ning Xie, Key Laboratory of Road and Traffic Engineering of the Ministry of Education, Tongji University; John Harvey, University of California Pavement Research Center, Davis

Investigation into Flat and Elongated Particles Ratio for Asphalt Mix Design Using a Modern Laser Technique, Joseph Aonchie-Boateng and Goulodis Ciss Mvelase, CSIR

Light Weight Deflectometer Specification for Aggregate Base, John Siekmeyer and Bruce Tanquist, Minnesota DOT; Nayyar Siddiki, Indiana DOT; Soheil Nazarian, The University of Texas at El Paso

Mechanistic Analysis and Design of Pavements

A Concurrent Mechanistic Pavement-mixture Design Approach: Parametric Analysis and Comparison with Instrumented Flexible Pavements, Sorosh Amelian and Yong-Rak Kim, University of Nebraska

Evaluation of Material Input Levels on Design of Unbonded Concrete Overlay Using Pavement Mechanistic-Empirical Design, Gauthar Sabih and Rafiqul A. Tarefder, University of New Mexico

Impact of Heavy Logging Trucks on Flexible Pavement Performance During Spring Thaw, Sam Owusu-Ababio, University of Wisconsin-Platteville; Robert Schmitt

Assessment of the 1993 AASHTO Structural Number as a Tool for Performance Evaluation of Asphalt Pavements Using Falling Weight Deflectometer Data from LTTP, Eshan Dave and Mirkat Oshone, University of New Hampshire; Jo Daniel; Ayman Ali, Mohamed Elshaer and Yusuf Mehta, Rowan University

Mechanistic Empirical Estimation of Remaining Service Life of Flexible Pavements Based on Simple Deflection Parameters, Ana Coca and Karthikeyan Logananthan, University of Texas at Arlington, Mayzan Isied, Stefan Romanoschi, and Mena Souliman, University of Texas at Tyler; Samer Hassan, Dessouky, University of Texas at San Antonio

Pavement Design and Analysis with Pavementdesigner.org for Concrete and Cement-Based Solutions, Eric Ferreebee and Gerald Voigt, American Concrete Pavement Association

A Simplified Procedure for Developing Level 2 Traffic Inputs for the AASHTOware Pavement-me, Syed W. Haider, Michigan State

Pavement Performance and Condition Assessment

20 Years Performance of LTTP SPS-2 Sections in Wisconsin, Sam Owusu-Ababio and Danny X. Xiao, University of Wisconsin-Platteville

Influence of Asphalt Surface Temperature on Pavement Rutting in Cold Regions, Osama Abaza and Tanay-Datta Chowdhury, UAA; Mahmoud Arfat

Profile Measurement, Smoothness Acceptance and the Integration of New Profile Measurement Technology, Michael Gerardi, APR Consultants; Albert Larkin, Federal Aviation Administration

Evaluating Deterioration Rates in Asphalt Concrete, Peter-Paul Dzwilewski, Katherine Gauthier, Genevieve Long, and Monty Wade, Applied Pavement Technology

Evaluation on Comprehensive Performance of In-service Asphalt Pavement with Semi-Rigid Base in Beijing, Peter-Paul Dzwilewski, Katherine Gauthier, Genevieve Long, Monty Wade, Applied Pavement Technology

Analysis of the Capabilities of Google Maps to Evaluate Pavement Condition, Cristina Torres-Machi and Gustavo Adrianzen, University of Colorado Boulder

Pavement Performance Evaluation from an Instrumented Section, Zafrul Khan and Rafiqul A. Tarefder, University of New Mexico

Summary of Practice for Automated Pavement Condition Data Collection, Sanjeet Adhikari, Indiana University Purdue University Indianapolis (IUPUI); Pranshoo Solanki, Illinois State University

#Pavements19 www.pavementsconference.org / 25
Recycled and Waste Materials

Assessment of Asphalt Mixtures Reinforced with Natural Palm Fibers, Leticia El Zein and Hussein Kassem, American University of Beirut

Evaluation of Re-recycling Capacity of Bituminous Mixtures, Víctor Antunes and José Neves, National Laboratory of Civil Engineering/Technical University of Lisbon (LNEC/IST); Ana Cristina Freire, National Laboratory of Civil Engineering (LNEC-Portugal)

Evaluation of the Effect of Combined Different Reclaimed Asphalt Pavement Sources, Dae Seong Jang, Seongil Kang, and Jaejun Lee, Chonbuk National University

A Summary of Practice for Recycling of Waste Glass in Pavement Materials, Thomas Bierma, Guang Jin, and Pranshoo Solanki, Illinois State University

Ceramic Waste, the New Materials for Asphalt Mixtures, María Fernanda Serrano, Norma Cristina Solarte, and Luz Marina Torrado, Universidad Pontificia Bolivariana; Alfredo Garcia Garcia and Carlos Alonso Troyano, Universitat Politècnica de València

Incorporation of High Percentage of Recycled Materials in New Bituminous Mixtures: A Cost Effective Solution, Víctor Antunes and José Neves, National Laboratory of Civil Engineering/Technical University of Lisbon (LNEC/IST); Ana Cristina Freire, National Laboratory of Civil Engineering (LNEC-Portugal)

Rehabilitation and Preservation of Pavements

Local Calibration of Stiffness Modulus for Full-Depth Reclamation Design, Cristina Torres-Machi and Victor Galotti, University of Colorado Boulder

Image Processing Method to Estimate the Wearing Condition of Slurry Seal Mixtures, Aria Fathi and Mahdi Saghaei, University of Texas at El Paso; Arash Hosseini, Temple University; Seyed Mohammad Asgharzadeh, Tarbiat Modares University

Pavement Rehabilitation Strategy Guide, Angeli Gamez, Seunggyu Kang, Hasan Ozer, and Imad Al-Qadi, Illinois Center for Transportation, University of Illinois at Urbana-Champaign

Addressing Pavement Performance Loss Using Crack Sealing Treatment, Bortiorkor Nii Tsui Alabi and Julius Keller, Purdue University

Stabilization of Unbound Layers

Utilizing Fly Ash to Improve Expansive Subgrade in Bangladesh, Mohammad Hassain, Bradley University; Mohammed Russedul Islam, Muntahina Ibqal, Ceyum Noor, Mostafizur Rahman, and Ausmita Sarkar, Military Institute of Science and Technology

Influence of Lime and Fly Ash Stabilized Subgrades on Mechanistic Empirical Pavement Distresses of Flexible Pavement Sections, Pranshoo Solanki, Illinois State University; Sanjeev Adhikari, Indiana University Purdue University Indianapolis (IUPUI)

Pavement Surface Characteristics

Finite Element Based Vehicle Skid Resistance Simulation Using In-situ 3D Pavement Surface Data, Joshua Q. Li, Kelvin Wang, and Guangwei Yang, Oklahoma State University; Yi Peng, Southwest Jiaotong University

Development a Trailer to Measure the Noise Generated at the Interface Between Tire and Pavement Surface, Abdulhaq hadi abed ali Alhaddad and Tuqa Khalid, Faculty of Engineering, Mustansiriya University

Finite Element Modeling of Effect of Pavement Surface Texture on Rolling Resistance, Karim Chatti and Shabnam Rajaee, Michigan State University

Impact of Pavement Surface Properties on Wet-weather Crashes, Gerardo Flintsch, Samer Katicha, and Kenneth Velez Rodriguez, Virginia Tech Transportation Institute

Safety Evaluation of Porous Pavement Surface in Wet Weather, Hao Wang, Rutgers University

The Effect of Braking Distance Reduction by Alternating Friction Coefficient of Pavement, Chen-Ming Kuo, National Cheng Kung University

Efficient and Sustainable Pavements

Reduction in Roughness Due to Asphalt Concrete Overlays Placed on Flexible Pavements, Rohan Perera, SME

A Multiple Regression Analysis to Model Hma Fatigue Cracking Using LTPP Data, Jacob Delhera and Shadi Saadeh, California State University, Long Beach

Evaluation of Load Transfer in Rigid Pavements by Rolling Wheel Deflectometer and Falling Weight Deflectometer

Prediction of Remaining Life of Pavement by Surface Deformation Using Odemark’s Approach, Pawan Deep, Davide Lo Presti, and Nick Thom, University of Nottingham; Mathias B. Andersen Martyn Stonecliffe Jones, and Alessandro Marradi, Dynatest

Using Hot Mix Asphalt Mix Design, Construction and Performance Data to Inform Pavement Policy and Standards, Ryan Howell, University of Washington; Stephen Muench; James Feraocar; Milad Ashtrian; Jim Weston

Prediction of Pavement Life of Flexible Pavements Under the Traffic Loading Conditions of Bangladesh, Omar Faruque Hamim and Md Shamsul Hoque, Bangladesh University of Engineering & Technology

Life-Cycle Assessment of Using Sulfur-Extended Asphalt (SEA) in Pavements, Rebehah Yang, Transportation Engineering Solutions and Technology (TEST), Inc., Hasan Ozer and Yahfeng Ouyang, UIUC; Md. Kamrul Islam, Muhammad Imran Khan, Kaffayatullah Khan, and Faisal Ibrahim Shalabi, King Faisal University

Prediction of Residual Life of Pavement by Surface Deformation using Odemark’s Approach, Partha Pratim Biswas, Manoj Kumar Sahis, Agnimitra Sengupta, and Gokul Mondal, Jadavpur University

(continued)
Durability Studies on the Lateritic Soil Stabilized with GGBS and Alkali Solutions, Amulya S, A U Ravi Shankar, and Panditharadhya B. J, National Institute of Technology Karnataka

Sustainability Assessment of Pavement System

A Review of the Pavement Economic and Competition Studies at the MIT Concrete Sustainability Hub, James Mack, CEMEX; Omar Swei, University of British Columbia; Jeremy Gregory and Randolph Kirchain, MIT Concrete Sustainability Hub

A Combined Tool for Life Cycle Assessment and Life Cycle Cost Analysis, Imad Al-Qadi, Egemen Okte, and Hasan Ozer, Illinois Center for Transportation, University of Illinois at Urbana-Champaign

Using Different Performance Measures to Assess the Sustainability of Warm Mix Asphalt in Hot Climatic Conditions, Ghassan Chehab, American University of Beirut; Yara Hamdar, Transportation Engineering Solutions and Technologies; Hussein Kassem, Beirut Arab University

Effects of Water Coupled Cracks on Life-cycle Assessment of Concrete Pavement under Moving Load, Satoshi Komatsu, Huu Quoc Hung Nguyen, and Koichi Maekawa, Yokohama National University

Unbound Layers Characterization

Performance-Based Evaluation of a Crushed Rock Base Course with Non-Compliant Grading, Greg White, University of the Sunshine Coast

Study on Water Permeability of Porous Road Base with Graded Stone, Junsheng Liu, Lin Qi, Xianmin Zhang, and Fangran Zhao, Civil Aviation University of China

Evaluation of Resilient Modulus of Highly Compressible Soils, Mario Flores, Cesar Lerma, Alexandra Ossa, and Tomas Romero, Instituto de Ingeniería, Universidad Nacional Autónoma de México

Chemical Characterization and Macro-Mechanical Properties of Road Bitumen Before and After Artificial Ageing, Hartmut Herb and Markus Stoeckner, Hochschule Karlsruhe – University of Applied Science

Resilient Modulus Prediction Models of Unbound Materials Using Long-Term Pavement Performance (LTPP) Database, Ayman Ali, Mohamed Elshaer, and Yusuf Mehta, Rowan University

Asphalt Concrete Rutting Modeling Using Hamburg Wheel Tracking Device (HWT)
Our Vision Is 20/20: Challenge the Past and ENGINEER TOMORROW
Wednesday, JULY 24
1:00 p.m. – 5:00 p.m.

O’Hare Airport | Airside-ORD 21

IDOT Highway | Jane Byrne Interchange Reconstruction
All technical tours will be Wednesday, July 24, 2019, from 1:00 pm–5:00 pm.

**All tour attendees are to gather in the street-level lobby of the Holiday Inn building at 1:00 p.m. As a group, you will board the proper shuttle (parked on N Orleans Street).**

Attendees can earn professional development hours (PDHs) by attending a technical tour.

Tour tickets are $40/attendee (must be registered for the conference to attend).

Due to potential security requirements, tour registration will be required prior to the event.

**O’Hare Airport | Airside-ORD 21**

At the forefront of the O’Hare 21 are plans by the city and the airlines to build a new O’Hare Global Terminal (OGT), a Global Concourse, and two new satellite concourses. At 2.2 million square feet, the new OGT will be one of the largest and most cutting-edge terminals in the nation. It will more than double the space at today’s Terminal 2, replacing it with an expanded, light-filled arrivals hall to feature additional gates; more space for concessions, lounges, and public amenities; state of the art new baggage systems; and advanced new technologies to improve security screening.

**IDOT Highway | Jane Byrne Interchange Reconstruction**

The Jane Byrne Interchange was the slowest and most congested highway freight bottleneck in the nation with more than 400,000 vehicles traveling through the Interchange on a daily basis, and more than 1,100 crashes reported on average per year. Built more than 50 years ago, the interchange has not had a major rehabilitation since its initial construction. High traffic volumes, single-lane ramps, and tight curves make the circle prone to congestion, which causes it to operate under breakdown conditions for most of the day.

The planning and design phases began in 2014. The construction phase (Phase III) is being implemented in three stages. Stage 1 is the Cross Road Bridges. The focus on Stage 2 will be I-290/Congress Parkway, and Stage 3 will consist of the I-90/94 segment. Project completion is expected in 2020.

This project is unique. It involves three different interstates, a constricted urban area, working around the CTA Blue Line, multiple bridges, a city water pumping station, and the need to keep traffic flowing in a location that sees an extreme number of vehicles every day.

The total cost of the Byrne project is $600 million. The planned improvements to the junction are expected to reduce traffic delays by more than 50 percent by widening ramps and creating better shoulders so that disabled vehicles don’t get stuck and tie up traffic behind them.

Sunday, July 21
Welcome Reception
6:00 – 7:30 p.m. | Wolf Point

Monday, July 22
Prepare to Profess: Pavements Faculty Session
5:15 – 6:15 p.m. | Western Stage

Chicago River Boat Tour
6:30 – 9:00 p.m.

Tuesday, July 23
Younger Members Session: Paving the Gap Between Different Generations of Civil Engineers
5:15 – 6:30 p.m. | Sauganash West
Welcome Reception

6:00 – 7:30 p.m. | Wolf Point

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

Prepare to Profess: Pavements Faculty Session

5:15 – 6:15 p.m. | Western Stage

Pavements Faculty workshop is designed to provide graduate students, researchers, and postdocs with important information about preparing for their future academic careers. The workshop will consist of a panel addressing different issues of concern and opportunities for pavement engineering researchers and professionals seeking academic positions and success. Presentation topics will range from navigating the job market to issues in teaching and pedagogy, to variety of professional opportunities available both inside and outside the academia. Panel discussions will also extend to institutions like APSE and its role to support them as current students (or postdocs) and future faculty member.

Panelists will include professors at different stages in their careers to communicate their own experiences in their journey toward tenure.

The workshop is co-organized by pavement committees of T&D, GI, and EMI and Academy of Pavement Science and Engineering (APSE).

Panel Members:

Imad Al-Qadi, Erol Tutumluer, Kevin Hall, Eyad Masad, Chuck Schwartz

Chicago River Boat Tour

6:30 – 9:00 p.m.

Spend your evening viewing Chicago’s rich architectural heritage and history. Led by an expertly trained CAC docent volunteer, the river cruise tells the stories behind more than 50 buildings along the Chicago River.

Hear how Chicago grew from a small settlement into one of the world’s largest cities in less than 100 years. In just 60 minutes, you’ll get the best overview of Chicago’s architecture and its history.

This is a ticketed event. Please visit the registration desk if you are interested in joining this evening on the river!

Transportation to the boat dock is provided. Please meet in the lobby on the street level of the Holiday Inn. The shuttle will be parked along N. Orleans Street. The shuttle will leave the Holiday Inn promptly at 6:30 p.m.

The boat will leave the dock at 7:00 p.m. and return to dock at 9:00 p.m. Dinner and drinks will be served on the boat.

Younger Members Session: Paving the Gap Between Different Generations of Civil Engineers

5:15 – 6:30 p.m. | Sauganash West

This conference event is geared for both younger and not so young engineers to learn how the different generations can work together successfully. The moderator will begin the session with a not too serious look at the differences between the generations, followed by a panel discussion. The four person panel will include two experienced engineers and two younger engineers. The experienced panelists will share what they wish they knew when they were younger. The younger panelists will share what makes their generation’s approach to civil engineering different from past generations, including what they wish the older generation knew about them. A lively discussion is anticipated that will be both informative and fun.
THANK YOU TO OUR SPONSORS!

GOLD

U.S. Department of Transportation
Federal Highway Administration

CORPORATE

GEICO
P #MemberDiscount
PEARL INSURANCE
UPS

SILVER

ARA
CMT
Michael Baker International
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 SCHEDULE** *(Subject to change)*

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sunday, July 21</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1:00 – 5:00 p.m.</td>
<td></td>
<td>Exhibitor Move-in</td>
</tr>
<tr>
<td>6:00 – 7:30 p.m.</td>
<td></td>
<td>Welcome Reception in Exhibit Hall</td>
</tr>
<tr>
<td><strong>Monday, July 22</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7:30 a.m. – 6:00 p.m.</td>
<td></td>
<td>Exhibit Hall Hours</td>
</tr>
<tr>
<td>7:30 – 8:30 a.m.</td>
<td></td>
<td>Light Continental Breakfast</td>
</tr>
<tr>
<td>10:00 – 10:30 a.m.</td>
<td></td>
<td>Networking Break</td>
</tr>
<tr>
<td>12:00 – 1:30 p.m.</td>
<td></td>
<td>Buffet Lunch</td>
</tr>
<tr>
<td>3:00 – 3:30 p.m.</td>
<td></td>
<td>Networking Break</td>
</tr>
<tr>
<td><strong>Tuesday, July 23</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7:30 a.m. – 3:30 p.m.</td>
<td></td>
<td>Exhibit Hall Hours</td>
</tr>
<tr>
<td>7:30 – 8:30 a.m.</td>
<td></td>
<td>Continental Breakfast</td>
</tr>
<tr>
<td>10:00 – 10:30 a.m.</td>
<td></td>
<td>Networking Break</td>
</tr>
<tr>
<td>12:00 – 1:30 p.m.</td>
<td></td>
<td>Buffet Lunch</td>
</tr>
<tr>
<td>3:00 – 3:30 p.m.</td>
<td></td>
<td>Networking Break</td>
</tr>
<tr>
<td>3:45 – 5:00 p.m.</td>
<td></td>
<td>Exhibitor Move-Out</td>
</tr>
</tbody>
</table>
Asphalt Plus
www.asphaltplus.com
Elastiko 100 is a chemically engineered crumb rubber product that has been developed to simplify and improve rubber asphalt production/placement while cutting cost.

Chicago testing Laboratory
www.chicagotestinglab.com
Chicago Testing Laboratory (CTL) is Chicagoland’s premier resource for the testing and inspection of construction materials, including asphalt and asphalt materials, liquids, aggregates, concrete and soils.

Controls Group
www.controls-usa.com
Controls Group is a global leader in the design and manufacture of testing equipment for the construction industry including the Wykeham Farrance geotechnical equipment offering both static and dynamic loading capabilities for a wide range of testing systems.

Forta Corp
www.fortacorp.com
Since 1978, FORTA Corporation has developed, produced, and promoted a complete family of synthetic fiber reinforcements for a wide variety of concrete and asphalt applications.

Geocomp Corporation
www.geocomp.com
Geocomp creates fully automated geotechnical laboratory testing products that are easy-to-use and powerful enough to standup to the challenging demands of geotechnical testing.

Gilion Company
www.globalgilson.com
Gilion Company, Inc. is a third generation, family-owned manufacturer and worldwide distributor of materials testing equipment serving the asphalt, aggregate, concrete and soils industries.

Heat Design Equipment
www.aspalttheater.com
HDE manufactures patented infrared heating equipment, popular model, paver attached joint heater meets FAA requirements to skip cutting the cold edge, saving time and money.

Huesker
www.Huesker.com

Humboldt
www.humboldtmfg.com
Humboldt Mfg. Co., is a leading manufacturer and supplier of construction materials testing equipment for Soil, Concrete and Asphalt. Both Lab and Field Equipment.

Kessler Soils Engineering Products
www.kesslerbcp.com
KSE Testing Equipment, a Kessler Soils Engineering Products Company, manufactures & distributes testing devices for soils, asphalt & concrete. KSE is the leading Dynamic Cone Penetrometer manufacturer. Distributor for Zorn Light Weight Deflectometers which measure modulus, a non-nuclear alternative. Distributor for the MIT-SCAN2-BT dowel bar scanner & MIT-SCAN-T3 pavement thickness NDT devices.

Phoscrete Corporation
www.phoscrete.com
Phoscrete is an Easy-To-Use, Fast-Setting, Long-Lasting MALP Concrete for full and partial-depth concrete repairs including expansion joints. Phoscrete meets USACE requirements for rapid runway repairs.

RDM International
www.rdmintlinc.com
RDM provides consulting services and research for airport planning and design; pavement evaluation, design, and management; and construction support for airports, highways, and military facilities.

Uretek USA
www.uretekusa.com
URETEK USA, Inc. specializes in returning your pavement system to its original design, with an improved foundation soil structure. We’re the sustainable solution that preserves your assets using our superior technology that revolutionized the industry - a sensible solution that requires significantly less energy, time, expense and operational disruption than replacement.

Williamette Valley Company
www.wilvaco.com and 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.

Pavements Surface Coatings
pavementsurfacecoatings.com
Pavement Surface Coatings is the manufacturer of Endurablend, a polymer modified cement “Ultra-Thin” (1/8”) micro-surfacing material that can be applied to both asphalt and concrete pavements for preservation, delineation and decorative applications.
INTERNATIONAL CONFERENCE ON AUTOMATED PEOPLE MOVERS & AUTOMATED TRANSIT SYSTEMS
Chicago, IL | June 29 - July 2, 2020
A Conference of the Transportation & Development Institute (T&DI) of ASCE

www.apmconference.org
Awards

Monday, July 22 | 8:30 – 10:00 a.m. | Sauganash Grand Ballroom

Airfield Pavement Practitioner Award
Harland Bartholomew Award
James Laurie Prize
Best Paper of Pavements 2019 Proceedings
Frank M. Masters Transportation Award

Tuesday, July 23 | 8:30 – 10:00 a.m. | Sauganash Grand Ballroom

Carl L. Monismith Award and Lecture

PLEASE VISIT THE T&DI WEBSITE AT 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!

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

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

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

Monday, July 22 | 8:30 – 10:00 a.m. | Sauganash Grand Ballroom

The American Society of Civil Engineers (ASCE) and the Transportation & Development Institute (T&D) are proud to present the following prestigious awards during the International Conference on Airfield & Highway Pavements 2019.

Airfield Pavement Practitioner Award

Navneet Garg, Ph.D., M.ASCE

Navneet Garg, Ph.D., of the National Airport Pavement & Materials Research Center (NAPMRC), has been named the recipient of the 2018 ASCE Transportation and Development Institute (T&D) Airfield Pavement Practitioner Award. Dr. Garg is being recognized for his outstanding contribution to advancing the state of practice in airfield pavement analysis and design. With a deep knowledge of pavement design, asphalt pavements, unbound pavement layers, and as an expert in field instrumentation, he plays a critical part in the current and future research for the FAA in the airport pavement field.

Some of his major accomplishments include having conceptualized and developed the National Airport Pavement & Materials Research Center (NAPMRC), developed specifications for FAA customized asphalt pavement analyzer (APA), developed a Strain Gage Based Sensor System to detect delamination/de-bonding in Hot Mix Asphalt (HMA) overlays at high speed exits on airports, led the congressionally (US Congress) mandated study on “Operational Life of Airport Pavements,” and led airport pavement instrumentation and testing projects.

Garg is active in his service and leadership in professional societies and international organizations. He is currently the Chairman of the ISAP Working Group on Accelerated Pavement Testing and the Heavy Vehicle Simulator International Alliance (HVS-IA). He is a member of the ASCE Airfield Pavement Committee and the TRB committees AFP70 on Aggregates, AFD30 on General and Emerging Pavement Design, and AFS20 on Geotechnical Instrumentation and Modeling. Dr. Garg is an Associate Editor of the prestigious International Journal of Pavement Engineering.

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.

Harland Bartholomew Award

Lily Elefteriadou, Ph.D., M.ASCE

Lily Elefteriadou, Ph.D., has been chosen as the winner of the American Society of Civil Engineers (ASCE) Harland Bartholomew Award.

Elefteriadou is the Director of the University of Florida Transportation Institute (UFTI), University of Florida. She has made significant contributions to transportation research and education through her publications, as well as teaching and service record. She is one of the world’s foremost experts in the field of traffic operations, traffic flow theory, and simulation. Her work has been extensively incorporated into one of the most important documents in her area of research, the Highway Capacity Manual (HCM), which is used widely in the US and world-wide.
Elefteriadou has built a strong, collaborative relationship with the City of Gainesville and the Florida Department of Transportation (FDOT) to develop I-STREET, a real-world testbed for the development, testing, and deployment of advanced transportation technologies. Through her leadership, the City of Gainesville has been exploring various technologies for enhancing mobility and safety in the region and beyond.

In another project Elefteriadou is leading, funded by the National Science Foundation and the FDOT, her team is developing methods and tools for joint optimization of signal control and vehicle movement, to improve mobility by exploiting the capabilities of connected and autonomous vehicles.

Elefteriadou has published extensively (nearly 80 refereed publications, and more than 120 additional conference publications and reports) and has been invited to present her work at many conferences and institutes worldwide.

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.

James Laurie Prize

**Eyad Masad, Ph.D., P.E., F.ASCE**

Eyad Masad, Ph.D., P.E., F.ASCE, is receiving the 2019 James Laurie Prize for his transformative contributions to the advancement of transportation engineering through his innovative research on asphalt concrete micro-mechanical modeling.

Masad’s research focuses on microstructure characterization, constitutive modeling, and micromechanics of pavement materials and systems. He has published more than 350 technical papers and reports including 200 journal papers. He is also the holder of one US patent. He is the co-author of a book on Pavement Design and Materials, which is adopted for teaching pavement courses in many universities around the world. Dr. Masad has established several research laboratories and chaired/co-chaired many conferences, symposia, and workshops sponsored by professional organizations all over the world.

Masad is an excellent educator. He is a professor in the Zachry Department of Civil Engineering at Texas A&M University and a professor in the Mechanical Engineering Program at Texas A&M at Qatar. Dr. Masad serves as the Executive Director of Global Initiatives in the Texas A&M Engineering Experiment Station. As a progressive-minded academic, he is both teacher and mentor to his students. Dr. Masad has received several university awards including the Dean’s Leadership Award, Zachry Professorship, the Dean’s Meritorious Service Award, Halliburton Professorship Award for Scholarly Excellence in Engineering, to name a few.

Masad is a fellow of the American Society of Civil Engineers (ASCE), a member of the American Association for the Advancement of Science (AAAS), a member of the Association of Asphalt Paving Technologists, and a member of the American Society for Engineering Education. He was the Chair of the Pavement Committee of the Geo-Institute, ASCE.

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.
Frank M. Masters Transportation Award

**John T. Harvey, Ph.D., P.E., M.ASCE**

John T. Harvey, Ph.D., P.E., is a professor and Research Engineer in the Department of Civil and Environmental Engineering, University of California, Davis. He has produced research, development, and implementation results in the areas of pavement design, materials, rapid construction, pavement management and the quantification of environmental impacts of pavement that are used around the world.

Harvey is a recognized and accomplished leader in the field of pavement engineering whose innovative research aims at advancing the state of knowledge in the applied analysis of asphalt and concrete materials and pavements. Dr. Harvey has integrated his theoretical and laboratory work with full-scale accelerated testing to verify and validate his application of theory to practice.

Harvey is among the founders of the Academy of Pavement Science and Engineering, whose mission is to serve the pavement science and engineering academic community through education, research, and professional development.

With more than 140 peer-reviewed publications, his research serves to improve the transportation system of the State of California and the nation and prompts agencies to effectively use their infrastructure investment to maximize the return from taxpayers’ dollars. His current groundbreaking work in the area of pavement life-cycle assessment (LCA) and environmental product declarations (EPDs), are edging closer to adoption within California; and he has been a key player in work with the Federal Highway Administration’s deployment effort on pavement sustainability.

With his research expertise, energy, and ability to transform research to practice, Dr. Harvey has managed to set an ambitious research agenda for himself and has succeeded in advancing the cutting-edge, interdisciplinary research in pavements towards the realization of the professional community goals.

**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.

---

**Best Paper of Pavements 2019 Proceedings**

*Impact of Asphalt Modifier Dosage on Modified Binder Rheology and Chemistry with Long-Term Aging,* Punit Singhvi, Hasan Ozer, and Imad Al-Qadi, UIUC; Ahmet Karakas; Kamal Hossain, Memorial University of Newfoundland

**Younger Member Best Paper of Pavements 2019 Proceedings**

Awards (continued)

Tuesday, July 23 | 8:30 – 9:00 a.m. | Sauganash Grand Ballroom

Carl L. Monismith Award and Lecture

Gary Hicks, Ph.D, P.E., F.ASCE

ASCE Monismith Lecture on Pavement Preservation

Gary Hicks is the 2018 winner of the ASCE Geo Institute’s Carl L. Monismith Award and Lecture on Pavement Engineering for his 50 years of technical and professional contributions in pavement materials, design, and evaluation and the construction and maintenance of transportation facilities.

Hicks is a part time Project Manager for the California Pavement Preservation (CP2) Center established at CSU, Chico in 2006 and a private consultant to several companies and organizations. Prior to this, Dr. Hicks was the Technical Director for the CP2 Center, senior principal for MACTEC E&C (now WOOD LLC) in Sacramento, and a Distinguished Professor of Civil Engineering at Oregon State University for over 25 years before retiring in 1997. He was an Associate Professor at Georgia Tech in the early 1970’s and was a senior Engineer for Woodward Clyde Consultants in the 1960’s.

Hicks has worked in the area of pavements and pavement preservation for nearly 50 years. He was involved in the development of the 1972, 1986, and phase 1 of the 2002 AASHTO Pavement Design Guides. He also participated in the SHRP A-003A contract to develop new and improved tests for asphalt concrete mixes.

He received his BS, MS, and Ph.D. degrees from the University of California at Berkeley where his major professor was Carl Monismith. He has been active with the Transportation Research Board (having served as the head of the pavements section and as a member of the pavement maintenance and preservation committees.), Association of Asphalt Paving Technologists (having served as president and selected as an honorary member), Foundation for Pavement Preservation (served on the Board), the International Society of Asphalt Pavements (Founder member, served on the board, and an honorary member), and ASCE where he was the young member of the year in 1975 for the Georgia Section, a member of the airfield pavement and highway pavement committees, and the Chair of the Highway pavements committee. He is a registered Civil Engineer in the states of California, Oregon, and Alaska and has authored more than 200 publications and one textbook, with Clark Oglesby titled “Highway Engineering” and won numerous awards during his career. He is still active as a consultant to several companies and organizations in the area of pavement design, management, maintenance, and rehabilitation.

Gary Hicks was one of Carl Monismith’s Ph.D students and the first of Professor Monismith’s students to receive this award.

About the Award

The Monismith Lecture is awarded annually for outstanding research contributions in Pavement Engineering and honors Professor Carl L. Monismith’s contributions to the field.
Transportation & Development Institute
AN INSTITUTE OF THE AMERICAN SOCIETY OF CIVIL ENGINEERS (ASCE)

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

MISSION
To advance knowledge and practice in sustainable transportation and development.

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

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

Join us!
www.asce.org/tdi

Follow us!
Twitter @ASCE_TDI

JOIN THE PAVEMENTS CONVERSATION!

#Pavements19
Join the Transportation & Development Institute of ASCE

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.

Save the Date! The International Conference on Transportation & Development will be in Seattle, WA, May 26-29, 2020.

Publish in ASCE/T&DI Journals

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

Come see what we are all about!
Visit www.asce.org/tdi and connect with us on Twitter @ASCE_TDI
ORGANIZATION

MEMBERS
T&DI Represents the transportation and development professionals of ASCE’s 150,000 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 · Planning & Development · Administrative · Emerging Technologies · Local and Student Chapters · Standards

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

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

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

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

JOURNALS

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

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

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

BOOKS
Books on transportation and development topics

MONTHLY NEWSLETTER
Transportation & Development News (monthly electronic publication)

Not a member? Join today by visiting www.asce.org/tdi
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. Committee meetings are open to all Pavementss 2019 conference attendees, and serve as a great opportunity to engage with your professional community.

**T&DI Committees Meeting at Pavements 2019**

**Airfield Pavement Committee**  
Sunday, July 21 | 5:00-6:00 p.m. | Western Stage

**Highway Construction Committee and Highway Pavements Committee (Combined)**  
Sunday, July 21 | 7:30-9:00 p.m. | Western Stage

**Other Committees Meeting at Pavements 2019**

**APSE Committee Meeting**  
Sunday, July 21 | 8:00 a.m.-12:00 p.m. | Western Stage

**TRB AV070 Committee Meeting**  
Sunday, July 21 | 3:00 -4:30 p.m. | Bulls Head

**CI Pavements Committee Meeting**  
Tuesday, July 23 | 7:00 -8:30 p.m. | Steamboat Hotel

**PAVEMENTS MOBILE APP**

A QUICK, EASY WAY TO TAP INTO THE PAVEMENTS 2019 EXPERIENCE

Download the free conference mobile app and see the full conference schedule, poster list, speaker bios, exhibit hall information, and more! The free app is available in the Apple Store and Google Play store. Just search for the “ASCE Conferences and Events” app, install and open app, then select “Pavements 2019” as your event. This will allow you to create an account to access the app.
Transportation & Development Institute (T&DI) Committees serve as a key opportunity for members to connect and engage in knowledge exchange and act as advocates for innovative transportation and development.

**Airfield Pavement Committee**
Sunday, July 21 | 5:00-6:00 p.m. | Western Stage
Purpose: The ASCE Airfield Pavement Committee (APC) is dedicated to the dissemination and sharing of engineering knowledge and best practices related to airfield pavement technology.
Chair: Bernadette San Agustin Caparas, P.E., M.ASCE, Metropolitan Washington Airports Authority

**Automated People Movers Committee**
Not meeting at Pavements 2019.
Purpose: To study and evaluate development in automated people movers, including planning, design, construction, operations, and financial feasibility, and to encourage exchange of experience through publications, workshops, and conferences.
Chair: Craig W. Elliott, A.M.ASCE, Lea+Elliott

**Aviation Planning & Operations Committee**
Not meeting at Pavements 2019.
Purpose: To address issues dealing with (1) the planning and design of airport runways, taxiways, aprons, terminals, ground transportation facilities, and support facilities (excepting airfield pavement design) and (2) the safe, secure and efficient operation of these facilities. The Committee’s purpose is to advance the art and science of civil engineering by: (1) promoting the civil engineer’s leading role in the planning and design of airports and associated ground transportation facilities, (2) fostering education and research in airport design and operations to improve the civil engineer’s analytical and design capabilities, (3) promoting state of the art methods of analysis - including fast-time and real-time simulation - to address planning, security, environmental, and operational issues facing airport operators, national and state aviation agencies, airport users, and the traveling public, (4) promoting advances in the field of airport planning and design by civil engineering, (5) working with other technical divisions of the Society demonstrated in the relationship between their concerns and airport planning and development.
Chair: Amiy Varma, Ph.D., P.E., M.ASCE, North Dakota State University

**Connected & Autonomous Vehicles Impacts Committee**
Not meeting at Pavements 2019.
Purpose: To a) Track advancements of the CAV technologies and evaluate potential impacts of the advancements on transportation and development policy, research, and practice; b) Inform relevant entities for preparation in adapting to the potential changes; and c) Foster collaborations between CAV technology providers and transportation agencies and companies.
Co-Chair: Jianming Ma, P.E., M.ASCE, Texas Department of Transportation
Co-Chair: Yinhai Wang, Ph.D., M.ASCE, University of Washington
Economics & Finance Committee
Not meeting at Pavements 2019.
Purpose: to study and disseminate information on technical and policy aspects of transportation planning, economics, and finance, including topics such as travel demand modeling, data collection and analysis, system management, project evaluation, roadway pricing and cost effectiveness. To advance effective planning, evaluation, and assessment of transportation systems by exchange of information on experience and outcomes through professional conferences/meetings, webinars, publications, and other communication mechanisms.
Chair: Samuel Labi, Ph.D., M.ASCE, Purdue University

Freight & Logistics Committee
Not meeting at Pavements 2019.
Purpose: to address all types of intermodal freight transportation, including rail-water, rail-highway, highway-water, and highway-air modal combinations. All aspects that impact freight movement, such as rates, routes, services, transfer facilities, and containers are considered. The purpose of the committee is to advance the art and science of civil engineering by: (1) promoting the civil engineer’s leading role in intermodal transportation, (2) disseminating information regarding state of the art technology as applicable to intermodal transportation, (3) fostering education and research in intermodal matters, and (4) collaborating with other technical committees of the Society and with multimodal committees of other organizations.
Chair: Alison Conway, Ph.D., A.M.ASCE, The City College of New York

Highway Construction Committee
(in conjunction with the HPC)
Sunday, July 21 | 7:30-9:00 p.m. | Western Stage
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: James Gallagher, P.E., F.ASCE, Resolution Management Consultants, Inc.
**Highway Pavement Committee**  
(in conjunction with the HPC)  
Sunday, July 21 | 7:30-9:00 p.m. | Western Stage  
Purpose: To gather, review, develop, evaluate, and present newly developed technologies and other information in the areas of Pavement Design, Construction, Maintenance and Rehabilitation. This information will be shared with the international pavement community, in a timely manner, in the form of technical presentations at conferences, ASCE sponsored publications, and other means of telecommunications. The committee will also partner with other entities from the industry and other Federal, State and local agencies to foster the delivery of the above services to the International Pavement Community.  
Chair: Hasan Ozer, A.M.ASCE, University of Illinois at Urbana-Champaign

**Infrastructure Systems Committee**  
Not meeting at Pavements 2019.  
Purpose: To study, evaluate and report on current practices and promote new developments in the science of infrastructure management. The committee’s focus is on broad infrastructure related practices such as, Planning & Development, Operations & Maintenance, and improving Infrastructure Management Strategies as they relate to transportation, public works, and parks and recreation infrastructure systems. Scientific and civil engineering disciplines include inventory management, condition assessment, deterioration modeling, evaluation of impacts of deteriorating infrastructure, decision making and financing strategies. The committee activities include the promotion of new and cross-cutting technologies such as, computer-aided decision support, the development of analytical models, automated data collection techniques and other products via specialty conferences, web pages, white papers and other special projects.  
Chair: Diniece Mendes, EIT, A.M.ASCE, New York City Department of Transportation

**Journal of Transportation Engineering, Part A: System**  
Not meeting at Pavements 2019.  
The Journal of Transportation Engineering, Part A: Systems contains technical and professional engineering articles on the planning, design, construction, operation, and maintenance of air, highway, rail, and urban transportation systems and infrastructure. Specific topics include management of roads, bridges, and transit systems; traffic management technology and intelligent transportation systems; connected and automated vehicle impacts; highway engineering; railway engineering; and economics, safety, and environmental aspects of transportation.  
Editorial Board  
Editor in Chief: Chris T. Hendrickson, Ph.D., Hon.M.ASCE, Carnegie Mellon University  
Managing Editor: Laurence R. Rilett, Ph.D., P.E., University of Nebraska, Lincoln  
Editor in Chief Emeritus: Kumares C. Sinha, Ph.D., P.E., Hon. M.ASCE, Purdue University
Journal of Transportation Engineering, Part B: Pavements
Not meeting at Pavements 2019.
The Journal of Transportation Engineering, Part B: Pavements contains technical and professional articles on the planning, design, construction, maintenance, and operation of airport, roadway and other pavement systems. Specific topics include pavement design; modeling; analysis approaches, maintenance and performance; pavement evaluation, pavement materials; interaction of pavements and vehicles; and economics and environmental aspects of pavements.
Editorial Board
Chief Editor: Karim Chatti, Ph.D., M.ASCE, Michigan State University
Founding Editor: Dallas Little, Jr., Ph.D., P.E., Dist. M.ASCE

Public Transport Committee
Not meeting at Pavements 2019.
Purpose: to examine and evaluate the developments in public transport modes, with emphasis on the planning, design, construction and rehabilitation of capital facilities; and further to address such developments from both technical and management considerations; and to sponsor publications and meetings to disseminate state-of-the-art information.
Chair: Nicholas Earl Lownes, P.E.,M.ASCE, University of Connecticut

Rail Transport Committee
Not meeting at Pavements 2019.
Purpose: to advance the science and civil engineering applications of the rail transportation mode, that is currently transporting seventy percent of the total multi-modal freight by tonnage, and that is subjected to new passenger transportation challenges in the USA. The central purpose of the Rail Transportation Committee (RTC) is to reflect the growing interest in rail transport to further enhance the benefits inherent to the rail mode, such as high efficiency of energy use, effectiveness of land utilization, direct access to city centers, and major environmental advantages. Also theoretical and practical aspects of high-speed rail passenger transportation, in the high-speed rail field, major reductions of travel times and unequaled travel safety. Theoretical and practical aspects of high-speed rail passenger transportation are, therefore, an indispensable component of the RTC’s activities, that involve also technological and economical issues of multipurpose utilization of existing active and inactive railway lines and right of ways.
Chair: Dimitris Rizos, Ph.D.,C.Eng, M.ASCE, University of South Carolina
Street & Highway Operations Committee
Not meeting at Pavements 2019.
Purpose: To review, develop, promote, advance, and put into practice concepts, standards and technology to achieve the safe, efficient, and reliable movement of people and goods on streets and highways.
Chair: Majed Al-Ghandour, Ph.D., P.E., M.ASCE, North Carolina Department of Transportation

Sustainable Transportation Committee
Not meeting at Pavements 2019.
Purpose: The mission of the ASCE T&DI Committee on Sustainability and Environment (CSE) is to engage transportation and development engineers, environmental scientists, social scientists and other professionals in the development and dissemination of information and knowledge pertaining to improving the sustainability of transportation and urban development. The CSE considers the full life cycle of transportation and urban development, including planning, design, construction, operation and renewal of urban places, transportation facilities and related systems. The CSE focuses on systems issues related to the interactions of transportation systems and urban development with the natural, social and institutional environments, and their impacts on economic development and human quality of life.
Chair: Mouna Krami Senhaji, Jacobs

Transportation Safety Committee
Not meeting at Pavements 2019.
Purpose: To disseminate safety information and to provide education and training pertaining to safety issues related to the planning, design, construction, and operation of transportation facilities. The committee’s emphasis will be on increasing safety awareness of all aspects of transportation infrastructure operations and improvement.
Co-Chair: Sunanda Dissanayake, Ph.D., P.E., F.ASCE, Kansas State University
Co-Chair: Mohamed Abdel-Aty, Ph.D., P.E., F.ASCE, University of Central Florida
Transportation and Development Continuing Education Opportunities

**LIVE WEBINARS**

Connected Vehicles, Smarter Cities, & Modern Signal Timing: How Traffic Engineering Strategies Will Change in the Years Ahead

August 21, 2019  7256IW2019
Instructor: Peter Koonce, P.E.

Complete Streets and Pavement Preservation-Linking Planning and Public Works for Better Communities and Better Infrastructure

October 18, 2019  8016IW2020
Instructor: Scott Douglas Gibson, P.E., M.ASCE

**CERTIFICATE PROGRAM**

ASCE Guided Online Course Certificate Programs are designed for a working professional to enhance and add to their skillset for the in-demand industries of engineering.

*Geographic Information Systems for Asset Management Certificate Program*

ASCE's new Geographic Information Systems for Asset Management Certificate Program is designed for practicing engineers to develop in-demand skills used to manage GIS applications for infrastructure assets. You will be able to apply the fundamental concepts of GIS, including development of GIS applications, implementation of GIS data within existing networks, process improvement using geospatial analysis, and proper maintenance and operation of spatial databases.

**FACE-TO-FACE SEMINARS**

Techniques for Pavement Rehabilitation
Denver, CO
July 31–August 2, 2019  71272019
Instructors: Newton C. Jackson, P.E. and James M. Signore, Ph.D., P.E.

Public Private Partnerships for Transportation Infrastructure
Seattle, WA
August 15–16, 2019  71572019
Instructor: Steven D. Dewitt, P.E.

**ASCE WEEK:**

A CONTINUING EDUCATION EVENT
Las Vegas, Nevada
Green Valley Ranch Resort Spa & Casino
September 22-27, 2019
[go.asce.org/VegasTDI](http://go.asce.org/VegasTDI)

- Come to one location to earn up to 44 PDHs.
- Save up to $1,100 off regular seminar prices.
- Network with colleagues and instructors.
- Private tour of the Hoover Dam awarding 4 PDHs.
- Breakfast, lunch, and breaks are included in your seminar price.

[go.asce.org/CETDI](http://go.asce.org/CETDI)
ADA Compliance
The Holiday Inn Chicago Mart Plaza River North 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 Pavements Conference is business casual (i.e. slacks, casual dresses) to business attire (i.e. neckties, business suits). Meeting room temperatures will vary, so wear layered clothing to ensure your personal comfort. We also recommend attendees wear comfortable shoes.

Badge Policy and Ribbons
Your Pavements registration name badge is your admission to all conference sessions. Please wear your badge at all times while at the Holiday Inn Chicago Mart Plaza River North. Tickets are required for the pre- and post-convention events, and special events. Where tickets are required, please be sure to bring your tickets with you to each event as you will not be admitted without a ticket. Ribbons will be available at the Registration Desk.

Proceedings
Conference Proceedings will be available online to all full registrants.

Program Changes
ASCE reserves the right to cancel programs and/or sessions. In the unlikely event of a cancellation, all registrants will be notified and will receive a full refund, if applicable. Programs and sessions are subject to change and ASCE reserves the right to substitute a program, session, and/or speaker of equal caliber to fulfill educational requirements.

Recording of Sessions
Video or audio recording of any educational session is strictly prohibited without prior written permission from both ASCE and the session presenter(s).

Release/Waiver
Photograph and Video Release: By registering for Pavements 2019, I understand that any photographs or videos that may be incidentally taken of me during these events may be used by ASCE for any purpose.

Liability Waiver: In submitting my Pavements 2019 registration, I acknowledge and agree that I am participating in the conference activities as my own voluntary and intentional act. I agree that I alone am responsible for determining whether I am physically capable of participating in any conference activity, and I understand that there is risk associated with my participation, which may include without limitation, injury or loss caused by my own negligence or the negligence of others. With knowledge and acceptance of the risks involved, I accept full responsibility for my own safety and well-being.

In consideration of my participation in conference activities, I hereby waive, release, hold harmless, and discharge ASCE and its officers, directors, and employees from any and all loss or injury that may be suffered by me in connection with Conference activities to the fullest extent permitted by law.

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

Because continuing education requirements for P.E. license renewal vary from state to state, ASCE strongly recommends that individuals regularly check with their state requirements that affect P.E. licensure and the ability to renew licensure. For details on your state’s requirements, please go to: www.ncees.org/Licensing_boards.php.

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.
THANK YOU TO OUR SPONSORS!

GOLD

U.S. Department of Transportation
Federal Highway Administration

CORPORATE

GEICO
#MemberDiscount

PEARL INSURANCE

UPS®

SILVER

ARA

CMT

Michael Baker International

Crawford, Murphy & Tilly

INTERNATIONAL
SAVE THE DATE

INTERNATIONAL CONFERENCE ON TRANSPORTATION & DEVELOPMENT 2020
Seattle, Washington | May 26–29, 2020

In Partnership with WSDOT’s Innovations & Partnerships in Transportation Conference

Showcasing Collaborative, Smart, and Integrated Mobility Solutions

#ICTD20 | www.asce-ictd.org