2019
ITS Texas Annual Meeting
November 13–15 ★ Las Colinas

The Omni Mandalay Hotel at Las Colinas
221 East Las Colinas Boulevard
Irving, Texas 75039
<table>
<thead>
<tr>
<th>DAY</th>
<th>NOVEMBER 13</th>
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<th>NOVEMBER 14</th>
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<th>NOVEMBER 15</th>
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<tbody>
<tr>
<td><strong>WEDNESDAY, NOVEMBER 13</strong></td>
<td><strong>THURSDAY, NOVEMBER 14</strong></td>
<td><strong>FRIDAY, NOVEMBER 15</strong></td>
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<tr>
<td>8:30 a.m. – 5:00 p.m.</td>
<td><strong>Registration</strong></td>
<td>7:30 a.m. – 5:30 p.m.</td>
<td><strong>Registration</strong></td>
<td>7:30 a.m. – Noon</td>
<td><strong>Registration</strong></td>
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<td>8:30 a.m. – 4:00 p.m.</td>
<td><strong>2019 Pre-Conference Workshop: Improving Highway Safety with ITS</strong> Lakewood-Rhapsody Room, Lake Level</td>
<td>7:30 a.m. – 8:30 a.m.</td>
<td><strong>Breakfast with Exhibitors</strong> Las Colinas Ballroom</td>
<td>7:30 a.m. – 8:30 a.m.</td>
<td><strong>Exhibit Hall Open</strong> Las Colinas Ballroom</td>
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<td>7:30 a.m. – 8:00 p.m.</td>
<td><strong>Exhibit Hall Open</strong> Las Colinas Ballroom</td>
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<td><strong>Breakfast with Exhibitors</strong> Las Colinas Ballroom</td>
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<td>8:30 a.m. – 11:30 a.m.</td>
<td><strong>Session 1: Opening Session</strong> Mandalay Ballroom</td>
<td>8:30 a.m. – 10:00 a.m.</td>
<td><strong>Session 1: Opening Session</strong> Mandalay Ballroom</td>
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<td>11:30 a.m. – 1:00 p.m.</td>
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<td>10:00 a.m. – 10:30 a.m.</td>
<td><strong>Break with Exhibitors/ Student Poster Sessions</strong> Las Colinas Ballroom near the Exhibit Hall</td>
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<td>1:00 p.m. – 2:30 p.m.</td>
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<td>10:30 a.m. – Noon</td>
<td><strong>Technical Session 2A</strong> Lakewood-Rhapsody</td>
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<td>3:00 p.m. – 3:30 p.m.</td>
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<td><strong>Technical Session 2B</strong> Windsor Ridge-Rangoon</td>
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<td>3:30 p.m. – 4:00 p.m.</td>
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<td>Noon – 1:30 p.m.</td>
<td><strong>Kickoff Luncheon</strong> Mandalay Ballroom</td>
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<td><strong>Improving Highway Safety with ITS</strong> Lunch on your own</td>
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<td>1:30 p.m. – 3:00 p.m.</td>
<td><strong>Technical Session 3A</strong> Lakewood-Rhapsody</td>
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<td><strong>Improving Highway Safety with ITS (continued)</strong></td>
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<td><strong>Technical Session 3B</strong> Windsor Ridge-Rangoon</td>
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<td><strong>Update: TxDOT’s Transportation Systems Management and Operations</strong></td>
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<td>3:00 p.m. – 3:30 p.m.</td>
<td><strong>Break with Exhibitors</strong> Las Colinas Ballroom</td>
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<td></td>
<td><strong>Update: TxDOT’s Cooperative and Automated Transportation Strategic Plan</strong></td>
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<td><strong>Technical Session 4A</strong> Lakewood-Rhapsody</td>
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<td><strong>Vendor Setup</strong> Las Colinas Ballroom</td>
<td>5:00 p.m. – 8:00 p.m.</td>
<td><strong>Vendor Reception</strong> Las Colinas Ballroom</td>
<td>5:00 p.m. – 8:00 p.m.</td>
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<td>5:30 p.m. – 5:45 p.m.</td>
<td><strong>Carpool to Topgolf</strong> Meet in Lobby</td>
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WELCOME AND THANK YOU for participating in the 2019 ITS Texas Annual Meeting. The ITS Texas Board of Directors has developed a great slate of activities, informative training, presentations, student posters and the exhibit hall to showcase the many vendors with useful products and services for varying requirements. We sincerely appreciate your attendance and hope that you will enjoy your time here, as you gain contacts and friends, reconnect with others, and expand the transportation technology knowledge for your agencies and companies to improve the operations of our transportation system.

During the Business Meeting Luncheon on November 15 we’ll vote on amending the ITS Texas Bylaws. It will be preceded by a brief explanation on the proposed amendment and an opportunity to discuss, followed by a vote.

The ITS Texas Board of Directors wishes to express gratitude to all of our vendors and sponsors. They are what makes this annual meeting possible. We’d also like to thank all participants for your time and interest and for allowing ITS Texas to continue to be part of the solution as we each contribute to improving the lives of travelers.

As with past Annual Meetings, we will have an exhibit hall that will be open Thursday and Friday, featuring suppliers and solutions across a wide range of the ITS industry. I invite you to participate in the breaks in the Las Colinas Ballroom Exhibit Hall, visit with vendors, and mingle with other participants while you enjoy coffee, breakfast or snacks. We encourage you to visit with the exhibitors and to learn about their products and services. Please make sure to attend the extended Vendor Reception which will continue until 8:00 p.m. on Thursday. Please join us in the Las Colinas Ballroom Exhibit Hall for an evening of mingling, food, and beverages. You won’t want to miss the opportunity to receive one of the nice door prizes that will be given away during the evening — you must be present to win.

Posters created by our Student Chapters will be displayed near the Exhibit Hall and students will be available from 10:00 a.m. to 10:30 a.m. on Thursday and Friday to present more detail. There will also be an informal Job Board at the registration desk if you are interested in posting or reviewing information about available opportunities.

If at any time you have a need or a problem, stop any board member or visit the staff at the registration desk. If you have any suggestions to improve future Annual Meetings of ITS Texas, please don’t hesitate to let us know.

Thank you again and have a wonderful time at the conference!

Your 2019 ITS Texas President,
Marian Thompson
THURSDAY, NOVEMBER 14

8:30 a.m. – 10:00 a.m. WELCOME AND OPENING SESSION

SESSION 1

University Programs – Research and Education

Mandalay Ballroom

Session Moderators: Marian Thompson, North Central Texas Council of Governments Tony Voigt, Gradient Group, LLC

Welcome and Opening Session:

Honorable Rick Stopfer, Mayor of City of Irving

Opening Session Speakers:

Khaled Abdelghany, Southern Methodist University
Robert Brydia, Texas A&M Transportation Institute
Fengxiang Qiao, Texas Southern University
Shengli Fu, University of North Texas
Pengfei (Taylor) Li, University of Texas at Arlington
Christian Claudel, University of Texas at Austin
TECHNICAL SESSIONS 2A and 2B

10:30 a.m. – Noon

SESSION 2A

Arterial Traffic Management Systems (ATMS)

Lakewood-Rhapsody

Session Moderator:
Joseph Hunt, Texas Department of Transportation

Early deployments of ITS along the freeway systems are moving into the maintenance phase and the focus is now shifting to the deployment of ITS along arterial roadways. While some commutes do not involve freeways, nearly all commutes include travel on arterials. Due to multiple jurisdictions, the management of arterials is typically less seamless than freeway management. This session will cover examples of how ITS is being used on city streets.

The Modern Intersection
Nader Ayoub, Iteris

ITS Operations Maturity
Art LeClair, Skyline Technology Solutions
Paul Lennon, Skyline Technology Solutions

Use of On-Road Real-time Travel Time Information for Arterial Route Selection During Construction
Robert Brydia, Texas A&M Transportation Institute
Kent Collins, City of Coppell

The Use of Existing Fiber Optics for Traffic Monitoring
Bob McQueen, Bob McQueen & Associates

SESSION 2B

Performance Measurement

Windsor Ridge-Rangoon

Session Moderator:
Marques Allen, HDR

Continued investment in ITS operations will rely on the ability of transportation agencies to demonstrate measurable increases in performance and positive cost-benefit results from their ITS investments. This session will present several perspectives on performance measures and cost-benefit analysis. Topics include the most recent federal rules and guidance for performance measures and ITS cost-benefit analysis, discussion on tools that can be used for system-wide performance measurement, and the perspective of a city looking to measure their investment in enhanced arterial operations.

Performance Measures: From Data to Information
Juan Moreno, Kapsch

The Assessment of Waze Data for Traffic Incident Management Benefits
Ignacio Tous, University of Maryland

Mesa Street Mobility – Multimodal and Safety Analysis
Dhruva Lahon, Kimley-Horn

Achieving Accurate Vehicular Traffic Counts at the U.S./Mexico Border
Dan Middleton, Texas A&M Transportation Institute
### THURSDAY, NOVEMBER 14

#### Noon – 1:30 p.m.  KICKOFF LUNCHEON

<table>
<thead>
<tr>
<th>Mandalay Ballroom</th>
<th>Keynote Speaker:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Session Moderators:</strong></td>
<td><strong>John Barton,</strong> ITS America Board of Directors</td>
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<td>Marian Thompson, North Central Texas Council of Governments</td>
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<td>Tony Voigt, Gradient Group, LLC</td>
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[Image of a cityscape]
Deployment of ITS infrastructure is only half the story. This session will explore how various types and sources of ITS data are being used to operate our transportation systems smarter and more efficiently and are enabling assessment of their performance in quantitative terms.

**Sensors and Data for Roadway Operations During Extreme Weather**  
Ken Perrine, UT/CTR

**An Application of Artificial Intelligence to the Analysis of Pedestrian Flow Patterns Using Traffic Monitoring Cameras**  
Heidi Westerfield Ross, UT/CTR

**Using Bluetooth Data to Identify Full Impacts from Traffic Incidents**  
Jeff Kaufman, Texas A&M Transportation Institute

**Big Data and AI in Transportation: Keeping Pace in a Fast-Moving World**  
Michael Moore, UT/CTR

This is an added value session tailored for the end-user, the consultant, and the motoring public, where you’ll learn about the tools of the trade-in ITS. Our lineup of vendors will be sharing beneficial information on the technologies they provide and the positive impacts they bring to the ITS industry, for today and the future.

**Best Practices for ITS Networking — Best Practices for ITS**  
Steve Frank, EtherWAN

**How LTE and FirstNET Technology are Paving the Way for Safety in ITS Communications**  
Andrew Lund, Advantech (B+B SmartWorx)

**Smart Work Zone Web-based System**  
Tim Hershberger, Skyline Products

**Arlington TX Connected Vehicle Pilot**  
Jeff O’Brian, Applied Information

**TxDOT Project Updates**  
Paul Lennon, Skyline Technology Solutions
TECHNICAL SESSIONS 4A and 4B

THURSDAY, NOVEMBER 14
3:30 p.m. – 5:00 p.m.

SESSION 4A

Connected and Automated Vehicles (CAV), Part 1

Lakewood-Rhapsody

Session Moderator:
Brian Jahn, City of Denton

Connected and Automated Vehicles. How are public agencies preparing for these? How can they improve our transportation safety, reduce travel times and impacts to the environment? Where is this technology headed? This, and more will be discussed in our session. Experts in the CAV field will share their vision and experiences.

1. Anticipating the Potential Impacts of Connected and Automated Vehicles on Toll Facilities
   Yong Zhao, Jacobs

2. The Impact of Increasing CAV Adoption on Regional Traffic Patterns
   Sumeet Kishnani, Stantec

3. Texas Connected Freight Corridor (TxDOT ATCMTD Grant)
   Chris Poe, Texas A&M Transportation Institute
   Minh Lee, Texas A&M Transportation Institute

4. Dedicating Lanes for Automated Vehicles: Fact or Fiction?
   Virginia Lingham, WSP

SESSION 4B

ITS on the Road to Zero

Windsor Ridge-Rangoon

Session Moderator:
Thomas Fowler, Kimley-Horn

Texas has set a goal to reduce the number of deaths on Texas roadways by half by the year 2035 and to zero by the year 2050. Technology is one important tool that can be used to meet this challenging goal. In this session, we’ll look at how ITS can be used to improve safety and achieve the road to zero in Texas.

1. Vision Zero Basis and Federal Perspective
   Steven Ratke, Federal Highway Administration – Texas Division

2. Using ITS to Achieve the Road to Zero
   Joseph Hunt, TxDOT Traffic Safety Division

3. Improving Safety with ITS in San Antonio
   John Gianotti, TxDOT San Antonio District

4. Leveraging Crash Data for Improved Transportation Operations and Safety:
   City of San Jose
   Mark Masongsong, UrbanLogiq
FRIDAY, NOVEMBER 15

8:30 a.m. – 10:00 a.m. TECHNICAL SESSIONS 5A and 5B

SESSION 5A

Connected and Automated Vehicles are on the roads now! Deployments are confirming proofs-of-concept, but also gathering data and revealing benefits beyond safety alone. Experts in the field will share their experiences and visions for what the data is revealing and possibilities of where it can take us.

**Session 5A**

**Connected and Automated Vehicles (CAV), Part 2**

Lakewood-Rhapsody

**Session Moderator:**
**Alex Power,** Texas Department of Transportation

**Combining Connected Vehicle and Traditional ITS Data**
**Lynne Randolph,** Southwest Research Institute

**Robert Brydia,** Texas A&M Transportation Institute

**Dallas Midtown Autonomous Transportation System Study**
**Jeremy Wyndham,** Jacobs

**Why the Future of Traffic Management Depends on the IoT-ITS Integration**
**Barry Einsig,** Econolite

**Harnessing Connected Vehicle Data to Inform Smarter Land-Use**
**Mark Masongsong,** UrbanLogiq

**Texas Connected and Automated Task Force**
**Darran Anderson,** Texas Department of Transportation

SESSION 5B

A significant percentage of congestion on our highways can be attributed to events such as crashes, stalls, road debris, and construction. Incident management is increasingly seen as a cost-effective approach to alleviating this component of congestion and maintaining the operations of our roads. While billions of dollars can be spent to construct a multilane freeway, a single incident can potentially render that investment worthless for several hours, disrupting the commute and impeding the flow of goods. This session will focus on the implementation of incident management programs to help detect, clear, and even prevent these incidents and help maintain the flow of traffic on our roadways.

**Session 5B**

**Incident Management and Special Events**

Windsor Ridge-Rangoon

**Session Moderator:**
**Joseph Hunt,** Texas Department of Transportation

**Applying Deep Learning to Solve the Challenges of Video-Based Incident Detection**
**Eric McWhorter,** Citilog

**After Action Review of Two Major Bridge Crashes on the Capital Beltway (I-495)**
**Greg Jordan,** University of Maryland

**Skyline Technologies and Special Events**
**Art LeClair,** Skyline Technology Solutions

**Paul Lennon,** Skyline Technology Solutions

**Super Bowl LIII Event & Incident Management**
**Lance Ballard,** Kimley-Horn
<table>
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<tr>
<th>SESSION 6A</th>
<th>Transportation System Management and Operations (TSMO)</th>
<th>Transportation System Management and Operations (TSMO) is the use of a combination of strategies, technologies, and programs to optimize the safety, mobility, reliability, and resiliency of the existing transportation systems. This presents a key opportunity for transportation agencies today to better leverage TSMO to improve system performance in a cost-effective way. This session will present several speakers with a different perspective about TSMO and how it can benefit the traveling public.</th>
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<td>Lakewood-Rhapsody</td>
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<td>Session Moderator:</td>
<td>Victor de la Garza, AECOM</td>
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<td><strong>TSMO of the Future</strong></td>
<td>Bob Edelstein, AECOM</td>
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<td><strong>TSMO University</strong></td>
<td>Matthew Volz, HDR</td>
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<td><strong>TSMO: An Federal Highway Administration Perspective</strong></td>
<td>Amelia (Millie) Hayes, Federal Highway Administration</td>
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<td><strong>TSMO from a Texas Perspective</strong></td>
<td>Barbara Russell, Texas Department of Transportation</td>
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<tr>
<th>SESSION 6B</th>
<th>Professional Practice/Ethics</th>
<th>Texas Board of Professional Engineers updates on board rule changes within the last year, general updates on initiatives the board is working on, information on enforcement statistics, and the engineering code of conduct.</th>
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<td><strong>Texas Board of Professional Engineers Ethics</strong></td>
<td>Dr. Lance S. Kinney, P.E., Executive Director, Texas Board of Professional Engineers and Land Surveyors</td>
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**Attend to obtain the ethics training required for Texas P.E. licenses.**
FRIDAY, NOVEMBER 15

Noon – 1:30 p.m.  BUSINESS LUNCHEON

Mandalay Ballroom

Session Moderators:
Marian Thompson, North Central Texas Council of Governments
Thomas Fowler, Kimley-Horn

Keynote Speaker:
Noam Maital, Co-founder and CEO of Waycare Technologies

Business Meeting Items
• Treasurer’s Report
• Bylaws Vote
• Student Chapter Updates
• Scholarship Awards
• ITS Texas Awards
• Ballot Results and 2020 ITS Texas Officers and At Large Board Members Announced

Please make your plans now to join us for the
2020 ITS TEXAS ANNUAL MEETING
November 9–11, 2020
Embassy Suites by Hilton San Marcos Hotel Conference Center,
1001 E McCarty Lane, San Marcos, TX 78666
2019 Pre-Conference Workshop: Improving Highway Safety with ITS

**Date:** Wednesday, November 13

**Time:** 8:30 a.m. – 4:00 p.m., with an hour and a half break for lunch on your own

**Location:** Lakewood-Rhapsody Room, Lake Level

**Audience:** Transportation operations/traffic engineers or managers, public or private who want a better understanding of improving highway safety with ITS, and additional topics.

This course is an introduction to ITS-based strategies and tools available for improving highway safety and is divided into six lessons, each intended to introduce or illustrate concepts relating to the development and deployment of ITS strategies to address safety issues. It also focuses on how to incorporate ITS strategies as part of the safety planning process and provides real-world examples of solutions used to address safety challenges. The course is intended for ITS project managers, transportation operations, and safety professionals, including, but not limited to, planners, operators, designers, emergency management, and maintenance personnel.

Lunch will be on your own, but there are many options nearby. The hotel provides a shuttle within a three-mile radius.

**Speakers:** Duane H. Thomas, Federal Highway Administration and Brenda C. Boyce, Booz Allen Hamilton
2019 Updates on TxDOT-led Initiatives: Transportation Systems Management and Operations; and the Cooperative and Automated Transportation Strategic Plan

Date: Wednesday, November 13
Time: 3:00 p.m. – 4:00 p.m.
Location: Lakewood-Rhapsody Room, Lake Level

Audience: Public-sector transportation planners, engineers, operators who are involved in regional transportation management and operations.

At the conclusion of “Improving Highway Safety with ITS,” two Texas Department of Transportation (TxDOT) representatives will provide brief updates and lead Q&A discussions on two statewide initiatives that involve state and local public agencies and private companies: Transportation Systems Management and Operations (TSMO) by Joe Hunt; and the Texas Cooperative and Automated Transportation (CAT) Strategic Plan by Jianming Ma.

Speakers: Joseph Hunt, Texas Department of Transportation and Jianming Ma, Texas Department of Transportation

2019 ITS Texas Topgolf Sponsorship Event

Date: Wednesday, November 13
Time: Arrive at 6:30 p.m.
Dinner served at 7:00 p.m.

Need a ride? Meet in lobby at 5:30 p.m. to carpool to Topgolf–Dallas (approximately 45 minute drive). No shuttle is available; early coordination of carpooling is recommended.

Location: Topgolf–Dallas

ITS Texas is pleased to host its annual scholarship event at Topgolf for a scholarship fund raiser and social event.

Full fajita dinner at 7:00 p.m. is provided for players that register in advance online.

At 7:30 p.m. we’ll begin warm-up for a scramble-format tournament. Teams of three players will compete in the tournament for about an hour and a half, but three hours of continuous play is included for everyone participating. We’ll follow up with a 19th hole awards ceremony featuring team, closest to the pin, and longest drive awards.

Proceeds go to scholarships for graduate students in Texas universities preparing for dedicated careers in the ITS field.

Topgolf—Dallas
8787 Park Lane, Dallas, TX 75231

ITS Texas would like to gratefully acknowledge the commitment and support of the vendors who help make the annual meeting a success.
ITS Texas gratefully acknowledges the generous support of sponsors of the 2019 ITS Texas Annual Meeting.

ITS Texas also recognizes the generous support of the Topgolf event sponsors.