Partnerships in
Transportation
Research,
Innovation,
and Training
About the Symposium

The Mid-Continent Transportation Research Symposium provides an opportunity for transportation professionals from the Midwest and beyond to network with their peers, learn about advancements and applications in their fields, and future directions for research. Researchers and practitioners from around the country will present papers at this seventh biennial event at Iowa State University. The day-and-a-half symposium will cover a broad spectrum of transportation issues with sessions on both basic and applied research.

Special Speakers

**Opening Session Speakers**

- Sandra Larson, Director, Research and Technology Bureau, Iowa DOT
- John Adam, Director, Highway Division, Iowa DOT
- Sharron Quisenberry, Vice President, Research and Economic Development, Iowa State University
- Peter Appel, Administrator, Research and Innovative Technology Administration (RITA), US DOT

**Luncheon Speakers**

- Jonathan Wickert, Dean, College of Engineering, Iowa State University
- John Horsley, Executive Director, AASHTO

**Banquet Dinner Speaker**

- Paul Trombino III, Director, Iowa DOT

**Symposium Sponsors**

- Iowa Department of Transportation
- Iowa State University’s Institute for Transportation; Department of Civil, Construction, and Environmental Engineering; and Midwest Transportation Consortium
- The University of Iowa
- University of Wisconsin’s National Center for Freight & Infrastructure Research & Education
- Wisconsin Department of Transportation
## Schedule of Events // August 18–19, 2011

### Thursday, August 18th

**Continental Breakfast**
- 7:30 a.m.

**Registration**
- 8:00
- 8:30

**Opening Session Speakers:**
- Sandra Larson, Director, Research and Technology Bureau, Iowa DOT
- John Adam, Director, Highway Division, Iowa DOT
- Sharron Quisenberry, Vice President, Research and Economic Development, ISU
- Peter Appel, Administrator, Research and Innovative Technology Administration (RITA), US DOT

**Break**
- 9:30

**Concurrent Session 1**
- Traffic and safety
- Education and knowledge transfer
- Planning, modeling, and logistics
- Environment
- Maintenance
- 10:00

**Luncheon and Speakers:**
- Jonathan Wickert, Dean, College of Engineering, ISU
- John Horsley, Executive Director, AASHTO

**Concurrent Session 2**
- Traffic and safety
- Education and knowledge transfer
- Technology considerations
- Planning, modeling, and logistics
- Asphalt pavements
- Asset management
- 1:00

**Concurrent Session 3**
- Traffic and safety
- Structures and bridges
- PCC materials and pavements
- Planning, modeling, and logistics
- Asphalt pavements
- Highways, Engineering, Construction
- 3:00

**Concurrent Session 4**
- Traffic and safety
- Structures and bridges
- PCC materials and pavements
- Driver services
- Geotechnical engineering
- Asset management
- 3:00

**Social: Meet and greet + poster session**
- 5:00 p.m.

**Banquet and Speaker:**
- Paul Trombino, Director, Iowa DOT

**Concurrent Session 5**
- Traffic and safety
- Structures and bridges
- PCC materials and pavements
- Driver services
- Geotechnical engineering
- Asset management
- 10:30

**LiDAR Presentation (optional):**
- Thomas Samson, Staff, Iowa DOT GIS

### Friday, August 19th

**Opening Session Speakers:**
- Sandra Larson, Director, Research and Technology Bureau, Iowa DOT
- John Adam, Director, Highway Division, Iowa DOT
- Sharron Quisenberry, Vice President, Research and Economic Development, ISU
- Peter Appel, Administrator, Research and Innovative Technology Administration (RITA), US DOT

**Continental Breakfast**
- 7:30 a.m.

**Registration**
- 8:00
- 8:30

**Concurrent Session 4**
- Traffic and safety
- Structures and bridges
- PCC materials and pavements
- Driver services
- Geotechnical engineering
- Asset management
- 10:00

**Break**
- 10:30

**Concurrent Session 5**
- Traffic and safety
- Structures and bridges
- PCC materials and pavements
- Driver services
- Geotechnical engineering
- Asset management
- 11:00

**LiDAR Presentation (optional):**
- Thomas Samson, Staff, Iowa DOT GIS

**Social: Meet and greet + poster session**
- 8:00
- 8:30 p.m.
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<td><strong>Traffic and Safety</strong></td>
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<tr>
<td>1. Dynamic Horizontal Curve Warning Sign Impacts</td>
<td>Keith Knapp, Iowa LTAP</td>
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<tr>
<td>2. Designing and Operating Intersections With Signals on Rural High Speed Highways</td>
<td>Dennis Eyler, SRF Consulting Group</td>
<td>Leif Garnass, SRF Consulting Group</td>
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<td>3. Estimation of Safety Effectiveness of Composite Shoulder on Rural Two-Lane Roads</td>
<td>Huanghui Zeng, University of Kansas</td>
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<td>4. Minnesota County Road Safety Plans</td>
<td>Michael Marti, SRF Consulting Group</td>
<td>Brad Estochen, Mn/DOT</td>
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<td><strong>Session 1B</strong></td>
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<td><strong>Education and Knowledge Transfer</strong></td>
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<tr>
<td>1. Communication is Key: A randomized trial of an intervention to increase parent involvement in teen driving</td>
<td>Corinne Peek-Asa, Injury Prevention Research Center, University of Iowa</td>
<td>Ginger Yang, Injury Prevention Research Center, University of Iowa</td>
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<td>2. Communication Strategies Employed in Transportation Projects</td>
<td>Ghada Gad, Iowa State University</td>
<td>Nurhidayah Azmy, Iowa State University</td>
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<td>3. Go! Magazine</td>
<td>Shauna Hallmark, Institute for Transportation</td>
<td>Rema Nilakanta, Institute for Transportation</td>
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<td>4. Evaluation of a video-based feedback intervention for newly-licensed young drivers</td>
<td>Cher Carney, Public Policy Center, University of Iowa</td>
<td>Daniel McGehee, Public Policy Center, University of Iowa</td>
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<td><strong>Planning, Modeling and Logistics</strong></td>
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<tr>
<td>1. Boundary v. Boundary Who decides on a planning boundary and what does it mean?</td>
<td>Phil Mescher, Iowa DOT</td>
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<td>2. State Highways as Main Streets: A Study of Community Design and Visioning</td>
<td>Leni Oman, Washington DOT</td>
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<td>3. ADA compliant sidewalks and facilities</td>
<td>Deanna Maifield, Iowa DOT</td>
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<td><strong>Environment</strong></td>
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<td>1. Assessment and Recommendations for the Operation of Standard Sump Manholes as a Best Management Practice for Stormwater Treatment</td>
<td>Bruce Holdhusen, Mn/DOT</td>
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<tr>
<td>2. Application of PaleoFlood Survey Techniques in the Black Hills of South Dakota</td>
<td>Dave Huft, South Dakota DOT</td>
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## Concurrent Sessions

**Thursday, August 18th 10:00 a.m. — 12:00 p.m.**

### Session 1F

**Maintenance**

1. **Risk Mitigation Strategies for Operations and Maintenance Activities**  
   - Kelly Strong, Iowa State University  
   - Sayanti Mukhopadhyay, Iowa State University  
   - Jay Mathes, Iowa State University  
   - Jennifer Shane, Iowa State University

2. **Network-level Winter Weather Safety Assessment: Database Development**  
   - Zach Hans, Institute for Transportation

3. **NCHRP initiated Project 14-12, “Highway Maintenance Quality Assurance”**  
   - Crawford Jenks, NCHRP

4. **TowPlow Winter Operations**  
   - Annette Dunn, Iowa DOT

## Concurrent Sessions

**Thursday, August 18th 1:30 p.m. — 3:00 p.m.**

### Session 2A

**Traffic and Safety**

1. **Evaluating the Effectiveness of Red Light Running Camera Enforcement in Cedar Rapids, Iowa**  
   - Shauna Hallmark, Institute for Transportation  
   - Nicole Oneyear, Institute for Transportation

2. **Playground Warning Sign Vehicle Speed Impacts**  
   - Keith Knapp, Iowa LTAP

3. **Evaluation of Pedestrian and Driver’s Actions at HAWK Signal**  
   - Debbie Self, Charlotte DOT  
   - Srinivas Pulugurtha, University of North Carolina at Charlotte

4. **Effect of Cedar Rapids, IA Automated Speed Enforcement Cameras on Speeds along I-380**  
   - Shauna Hallmark, Institute for Transportation  
   - Nicole Oneyear, Institute for Transportation

### Session 2B

**Education and Knowledge Transfer**

1. **SHRP 2 - Delivering New Transportation Technologies**  
   - James McMinimee, Iowa DOT

2. **Arizona Transportation History**  
   - Anne Ellis, Arizona DOT

3. **Best Practices: Managing Interaction between Local Authorities and Major Traffic Generators**  
   - Michael Marti, SRF Consulting Group  
   - Tim Stahl, Jackson County

### Session 2C

**Technology Considerations**

1. **Geospatial Infrastructure at Iowa DOT**  
   - Eric Abrams, Iowa DOT

2. **New LiDAR Technology Offers Faster, Less Expensive Field Data**  
   - Bill Stone, Missouri DOT

3. **LiDAR information for 2-D hydraulic modeling**  
   - Dave Claman, Iowa DOT

4. **DARWIN-ME Pavement Design System**  
   - Doc Zhang, Louisiana DOT

### Session 2D

**Planning, Modeling and Logistics**

1. **Innovative Funding and Design for re-designing Rail Road Crossings**  
   - Mary Jo Key, Iowa DOT

2. **Travel Demand Model**  
   - Adam Shell, Iowa DOT

3. **Flood Detour Traffic Analysis using the Iowa Travel Analysis Model**  
   - John Parker, Iowa DOT

4. **Modeling vehicle class lagging headways for estimating passenger car equivalent: A comparative analysis between 3SLS and sure modeling approaches**  
   - Anwaar Ahmed, Purdue University  
   - Matthew Volovski, Purdue University  
   - Bismark Agbelie, Purdue University
## Concurrent Sessions

### Thursday, August 18th

1:30 p.m. — 3:00 p.m.

### Session 2E

**Asphalt Pavements**

1. **Use of Reclaimed Asphalt Pavement from Ultra-Thin Bituminous Bonded Layer in Superpave Mixtures/Evaluation of the Use of Reclaimed Asphalt Pavement in HMA Mixtures**
   Haritha Musty, Kansas State University
   Mustaque Hossain, Kansas State University
   Nassim Sabahfar, Kansas State University

2. **Enhanced Pavement Reflection Crack Growth Modeling Through Soft Computing**
   Halil Ceylan, Iowa State University
   Kasthurirangan Gopalakrishnan, Iowa State University
   Sunghwan Kim, Iowa State University
   Robert Lytton, Iowa State University

3. **Performance Evaluation of Superpave Mix Using Hamburg Wheel Tracking Device**
   Farhana Rahman, Kansas State University
   Mustaque Hossain, Kansas State University
   Kiran Uppu, Kansas State University
   Cliff Hobson, Kansas DOT

### Session 2F

**Asset Management**

1. **NCHRP Projects 20-24(11) and 08-69, AASHTO Asset Management Guide: Volumes I and II**
   Crawford Jencks, NCHRP

2. **Asset Management at the Iowa DOT’s Highway Division**
   Brad Cutler, Iowa DOT

3. **Ohio DOT Pavement Management Information System**
   Cynthia Gerst, Ohio DOT

## Concurrent Sessions

### Thursday, August 18th

3:30 p.m. — 5:00 p.m.

### Session 3A

**Traffic and Safety**

1. **The Next 50 Years: Moving Toward a New Era in Roadway Safety**
   Peter Appel, US DOT RITA

2. **An Evaluation of Retro-reflectivity of Pavement Markings on Traffic Safety**
   Omar Smadi, Institute for Transportation
   Neal Hawkins, Institute for Transportation

3. **Adaptive traffic signal control**
   Cameron Kergaye, Utah DOT

### Session 3B

**Structures and Bridges**

1. **ABC Decision Tool and Economic Modeling Study**
   Toni Doolen, Oregon State University
   Benjamin Tang, Oregon DOT

2. **Accelerated Bridge Construction**
   Cameron Kergaye, Utah DOT

3. **ABC Demonstration Bridge - Design and Construction**
   Mike LaViolette, Jon Frerichs, HNTB Corporation
   Terry Wipf, Brent Phares, Matt Rouse, Doug Hartwell, Iowa State University
   Ahmad Abu-Hawash, Jim Nelson, David Evans, Iowa DOT

4. **ABC Demonstration Bridge - Laboratory Testing**
   Mike LaViolette, Jon Frerichs HNTB Corporation
   Terry Wipf, Brent Phares, Matt Rouse, Doug Hartwell, Iowa State University
   Ahmad Abu-Hawash, Jim Nelson, David Evans, Iowa DOT
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<td><strong>PCC Materials and Pavements</strong></td>
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</table>
| 1. A method to rapidly predict service life and susceptibility to deicing salt deterioration of aggregates used in Portland cement concrete  
Bob Dawson, Iowa DOT | |
| 2. A Study of Aggregate Settlement in a Simulated Cement System  
Will Hunnicutt, Iowa State University  
Kejin Wang, Iowa State University | |
| 3. Identifying Fine Aggregates Prone to Polishing in PCC Pavements  
Marc Rached, University of Texas at Austin  
David W. Fowler, University of Texas at Austin | |
| 4. Drying Shrinkage Behavior of Mortars Made with Ternary Blends  
Xuhao Wang, Iowa State University  
Kejin Wang, Iowa State University  
Faith Bektas, National Concrete Pavement Technology Center, Institute of Transportation  
Peter Taylor, National Concrete Pavement Technology Center, Institute of Transportation | |
| **Session 3D**      | **Planning, Modeling and Logistics** | |
| 1. Planning Tools to Evaluate Transportation Network Resiliency  
Konstantina Gkritza, Institute of Transportation  
Steve Lavrenz, Iowa State University | |
| 2. An Enhanced Freight Activity Micro-simulation Estimator (FAME) Model using FAF3.0 dataset  
Zahra Pourabdollahi, University of Illinois at Chicago  
Kourosh Mohammadian, University of Illinois at Chicago | |
| 3. Travel time variability for freight flows along a major Interstate corridor  
Kaushik Bekkem, CFIRE, University of Wisconsin, Madison  
Teresa Adams, CFIRE, University of Wisconsin, Madison  
Bruce Wang, CFIRE, University of Wisconsin, Madison | |
| 4. Comparative Contact Methods in Freight Establishment Surveys  
Karl Sturm, University of Illinois at Chicago  
Kourosh Mohammadian, University of Illinois at Chicago | |
| **Session 3E**      | **Asphalt Pavements** | |
| 1. Effectiveness of Flexible Pavement Rehabilitation Treatments - Evidence from a National Experiment  
Zongzhi Li, Illinois Institute of Technology  
Anwaar Ahmed, Purdue University | |
| 2. Investigation of Warm Mix Asphalt in Iowa: Translating laboratory performance test results to field performance using the Mechanistic-Empirical Design Guide (M-EPDG)  
Ashley Buss, Iowa State University | |
| 3. Aggregate Retention in Chip Seal  
Shahidul Islam, University of Illinois at Urbana Champaign  
Elaine Lamm, Kansas State University  
Haritha Musty, Kansas State University  
Mustaque Hossain, Kansas State University | |
| **Session 3F**      | **Highway Engineering and Construction** | |
| 1. Developing Rational Contingencies for Transportation Project Cost Estimates  
Douglas Gransberg, Iowa State University | |
| 2. Analysis of the Required Project Management Skill Set for Complex Design-Bid-Build Projects  
Douglas Gransberg, Iowa State University  
Jennifer Shane, Iowa State University | |
| 3. Web-based project management action research for highway projects under $10 million  
Jose Perez Reboredo, Iowa State University  
Charles T. Jahren, Iowa State University | |
| 4. Implementation of Safety Measures in Nighttime Construction Work Zone  
Nurhidayah Azmy, Iowa State University  
Jennifer Shane, Iowa State University | |
Quantifying traveler diversion and its impact during a weekend full freeway closure: Case study with I-894
  Justin Effinger, University of Wisconsin, Milwaukee
  Yue Liu, University of Wisconsin, Milwaukee
  Alan Horowitz, University of Wisconsin, Milwaukee
  John Shaw, Wisconsin DOT
  John Corbin, Wisconsin DOT

Rural Safety Policy Improvement Index
  Keith Knapp, Iowa LTAP

A new decision support tool for warranting detour operations during freeway corridor incident management
  Yue Liu, University of Wisconsin, Milwaukee
  Zhenke Luo, University of Wisconsin, Milwaukee

A Motorcycle Safety Survey in Kansas to Identify Issues and Causes Related to Crashes
  Mohammad Saad Shaheed, Iowa State University

Pavement Management Tools For Minnesota
  Michael Marti, SRF Consulting Group
  Gary Danielson, Kandiyohi County, MN

Minimum Cement Content for Performance and Sustainability in Rigid Pavements
  Ezgi Yurdakul, Iowa State University
  Peter Taylor, National Concrete Pavement Technology Center, Institute for Transportation
  Halil Ceylan, Iowa State University
  Fatih Bektas, National Concrete Pavement Technology Center, Institute for Transportation

Effect of Limestone Powder on PCC Strength
  Fatih Bektas, National Concrete Pavement Technology Center, Institute for Transportation
  Wenhun He, Iowa State University
  Gongbo Zhang, Iowa State University
  Kejin Wang, Iowa State University

Cost-Per-Mile Estimation Methodology for Railroads
  Jeffrey von Brown, Institute for Transportation
  Konstantina Gkritza, Institute for Transportation

Multimodal Transportation Operations and Planning Software Review and Evaluation
  Eirini Kastrouni, Institute for Transportation
  Steve Lavrenz, Iowa State University
  Jeffrey von Brown, Institute for Transportation, Iowa State University
  Konstantina Gkritza, Institute for Transportation

A Conceptual Framework for Freight Transport Modeling With Logistic Choices
  Zahra Pourabdollahi, University of Illinois at Chicago
  Kourosh Mohammadian, University of Illinois at Chicago

Spatial Transferability of CO2 Emission Models Incorporating Land Use and Household Characteristics
  Doreen Kobelo, Florida State University
  Judith Mwakalonge, Prairie View A&M University
  Saidi Siuhi, University of Nevada, Las Vegas

Establishing Efficient Project-Level Strategies for Pavement Maintenance and Rehabilitation Considering Multiple Objectives using Data Envelopment Analysis
  Anwaar Ahmed, Purdue University
  Bilal Khurshid, Purdue University
  Samuel Labi, Purdue University
  Qiang Bai, Purdue University
  Muhammad Irfan, Purdue University

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Session 4A
Traffic and Safety

1. Does Cell Phone Use have an Effect on Queue Discharge Patterns?
   Srinivas Pulugurtha, University of North Carolina at Charlotte
   Ryan Brumfield, FHWA

2. 3D Spatial Visualization Analysis of Safety Related Driving Events of Newly Licensed Teens in Proximity of Home and School
   Tika Ram Adhikari, Public Policy Center, University of Iowa
   Daniel McGehee, Public Policy Center, University of Iowa
   Michelle Reyes, Public Policy Center, University of Iowa
   Cher Carney, Public Policy Center, University of Iowa

3. Matched Case-Control Study of On-Road Bicycle Facilities and Bicycle Crashes in Iowa, 2007-2010
   Cara Hamann, College of Public Health, University of Iowa
   Corinne Peek-Asa, Injury Prevention Research Center, University of Iowa
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<td>Structures and Bridges</td>
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<tr>
<td>1. Imaging Tools for Evaluation of Gusset Plate Connections in Steel Truss Bridges</td>
<td>Barnie Jones, Oregon DOT</td>
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| 2. Improving Bridge Interface Rideability in Ohio | Brent Phares, Institute for Transportation  
Cynthia Gerst, Ohio DOT |
| 3. Study of the Impacts of Implements of Husbandry on Bridges | Justin Dahlberg, Institute for Transportation  
Travis Hosteng, Institute for Transportation  
Doug Wood, Iowa State University  
Scott Neubauer, Iowa DOT |
| 4. Preemptive Retrofits to Prevent Constraint Induce Fracture at Vertical Stiffeners | Robert Connor, Purdue University  
Michael Koob, WJE  
Brian Santosuosso, WJE  
Bruce Brakke, Iowa DOT |
| **Session 4C**      | PCC Materials and Pavement |                           |
| 1. FHWA's Sustainable Pavement Program | Kurt Smith, Applied Pavement Technology, Inc. |
| 2. Sustainable Highway Rating System | Kathleen Penney, CH2M Hill |
| 3. Life-cycle Assessment of Concrete Pavements: Impacts and Opportunities for Carbon Reductions | John Ochsendorf, MIT |
| 4. LCA characterization of life cycle environmental impacts from pavement smoothness | Eul-Bum Lee, UC Berkeley  
Alissa Kendall, University of California, Davis  
Chang-Mo Kim, University of California, Davis  
In-Sung Lee, University of California, Davis  
Ting Wang, University of California, Davis  
John Harvey, University of California, Davis |
| **Session 4D**      | Driver Services |                           |
| 1. Engineering Design Converter for Operational Review and Outreach | Shawn Allen, University of Iowa  
Yefei He, University of Iowa |
| 2. Ignition Interlock Device | Kim Snook, Iowa DOT |
| 3. Driver Impairment Detection | Dave Lorenzen, Iowa DOT |
| 4. Affordable simulator-based truck driver training: challenges and opportunities | Dawn Marshall, University of Iowa  
Andrew Veit, University of Iowa |
### Concurrent Sessions  
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<th>Geotechnical Engineering</th>
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| 1. Field and Laboratory Evaluation of a Mechanically Stabilized Salvaged Base Course Used in the Construction of US 12 Marmarth, North Dakota  
Mark Wayne, Tensar International  
David White, Institute for Transportation  
Jay Kwon, Tensar International |
| 2. Investigation of Pavement Moduli Using Non-Destructive and Laboratory Tests  
Jeremiah Thomas, Kansas State University  
Mustaque Hossain, Kansas State University  
Quinn Stenzel, Kansas State University |
| 3. Case histories of ground improvement methods for road or airport construction  
Jian Chu, Iowa State University |
| 4. Evaluation of Reinforced Crushed Stone Base for Low-Volume Road Bases  
Brandon Bortz, Kansas State University  
Mustaque Hossain, Kansas State University  
Izhar Halami, PRS Mediterranean Ltd  
Andy Gisi, Kansas DOT |

### Session 4F  
Asset Management  
Friday, August 19th  
8:30 a.m. — 10:00 a.m.

| 1. Transportation Agency Tool to Analyze Benefits of Living Snow Fences  
David Smith, University of Minnesota  
Gary Wyatt, University of Minnesota  
Diomedes Zamora, University of Minnesota  
Daniel Gullickson, University of Minnesota  
Dean Current, University of Minnesota |
| 2. Average Annual Maintenance Expenditure (AAMEX) Modeling for Indiana Highway Assets: A Statistical and Econometric Analysis of the Effect of an Asset’s Age on Expected Maintenance Costs  
Matthew Volovski, Purdue University  
Samuel Labi, Purdue University |
| 3. A Study on the Relationship between Operational Asset Performance and Safety Performance  
Jian Gao, Iowa State University  
Inya Nlenanya, Institute for Transportation  
Basak Aldemir-Bektas, Institute for Transportation  
Konstantina Gkritza, Institute for Transportation  
Omar Smadi, Institute for Transportation |

### Concurrent Sessions  
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<th>Traffic and Safety</th>
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| 1. Development and Evaluation of Selected Mobility Applications for VII  
Deb Elston, FHWA |
| 2. Improving Traffic Operations and ITS Technology Deployment in Wisconsin Corridors  
William Melendez, University of Wisconsin, Madison |
| 3. Risk Analysis of Nighttime Construction Work Zones  
Sayanti Mukhopadhyay, Iowa State University |
| 4. Effects of Adverse Weather on Surface Transportation Mobility  
Joe Olson, Public Policy Center, University of Iowa |
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<tr>
<th>Session 5B</th>
<th>Structures and Bridges</th>
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| 1. Precast UHPC Waffle Bridge Deck Panels and Connections for Accelerated Bridge Construction | Sriram Aaleti, Iowa State University  
Sri Sritharan, Iowa State University  
Dean Bierwagen, Iowa DOT  
Brian Moore, Wapello County Engineer |
Paul Krauss, Wiss, Janney, Elstner Associates, Inc.  
John Lawler, Wiss, Janney, Elstner Associates, Inc.  
Gordon Port, Iowa DOT |
| 3. Remote Sensing for Bridge Monitoring: USDOT-RITA CRST Phase 1 and 2 | Edd Hauser, University of North Carolina at Charlotte  
Shenen Chen, University of North Carolina at Charlotte |
| 4. Effects of Thermal Loading on Pier Deformations in the Wakota Bridge | Krista Morris, University of Minnesota  
Arturo Schultz, University of Minnesota |

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<th>Session 5C</th>
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<td>1. Concrete Pavement Surface Characteristics Program Results</td>
<td>Paul Wiegand, Institute for Transportation</td>
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<td>2. PCC Overlays Program Results</td>
<td>Dale Harrington, Snyder and Associates</td>
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| 3. Geothermal Application for PCC Pavement System | Cheng Li, Iowa State University  
David White, Institute for Transportation |
Kejin Wang, Iowa State University  
Peter Taylor, National Concrete Pavement Technology Center, Institute for Transportation  
Surendra Shah, Center for Advanced Cement-Based Materials, Northwestern University |

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<th>Session 5D</th>
<th>Driver Services</th>
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Kari Harland  
Charles Jennissen  
Christopher Buresh |
| 2. Driver’s License Central Issuance & Image Verification | Dave Stutz, Iowa DOT |
| 3. Iowa High School Administrator Opinions About Graduated Driver Licensing | Michelle Reyes, Public Policy Center, University of Iowa |
| 4. CARFIT Program | Kim Snook, Iowa DOT |

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<th>Session 5E</th>
<th>Geotechnical Engineering</th>
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| 1. Load and Resistance Factor Design Advancements For Bridge Pile Foundations In Iowa | Kam Weng Ng, Iowa State University  
Sherif Abdel-Salam, British University in Egypt  
Matthew Roling, Flad Architects  
Sri Sritharan, Iowa State University  
Muhammad Suleiman, Lehigh University |
| 2. MTI Geotechnical Research Program | Bill Stone, Missouri DOT |
| 3. Development of a Database for Drilled Shaft Foundation Testing (DSHAFT) | Jessica Heine, Iowa State University  
Matthew Roling, Flad Architects  
Sri Sritharan, Iowa State University  
Muhammad Suleiman, Lehigh University |