POSTER SESSIONS

8

MONDAY OCTOBER 24:

Bijan Vafaei et al., *Iowa State University* – Safety and Operation Impact of Rumble Strip Installation in Iowa

Emira Rista et al., *Iowa State University Institute for Transportation* – Development of Michigan-specific Safety Performance Functions (SPFs) for Urban and Suburban Arterials

Amrita Goswamy et al., *Iowa State University* – Identification of Risk Factors for Horizontal Curves in Iowa

Jeremy Chapman, *Rose-Hulman Institute of Technology* – An economic and environmental analysis of three common intersection control methods for a wide boulevard intersection configuration

Trevor Kirsch et al., *Iowa State University Institute for Transportation - Development of a Highway Safety Improvement Program Framework*

Vaishnavi Krishnakumar et al., *TOPS Laboratory, Department of Civil and Environmental Engineering, UW-Madison* – Meeting Emerging Transportation Safety Challenges with the New Wisconsin Crash Data Management

Paige Martz et al., *UW-Madison, WisDOT SPF Creation*

Raha Hamzeie et al., *Iowa State University* – Assessing the effect of state-specific laws on impaired driving and crash severities

Raju Thapa, *Iowa State University* – Spatial Distribution of Distracted Driving Crashes in Des Moines MPO

Ellen Nightingale, *Iowa State University* – An Investigation on the Relationship between Intersection Skewness and Crash Frequency on Rural, Two-Lane Intersections in Iowa

TUESDAY OCTOBER 25:

Kristina Fields, *UW-Platteville* – Sustainable Safety Examples of Cycling Infrastructure in the Netherlands

Yang Cheng, *UW-Madison* – GIS Enhanced Traffic Operations Data Management System

Tim Barrette et al., *Iowa State University* – Safety Impacts of Access Point Proximity to Freeway Ramps

Iftin Thompson et al., *Iowa State University* – Driveway Access Safety

Adam Francour, *UW-Madison TOPS Lab* – Great Lakes Megaregion Work Zone and Operations Collaboration

Mike Scarmon, *KL Engineering* – As-Built Mapping for Electrical Facilities and Underground Locating Practices – Wisconsin DOT

Maximilien Sauban, *TOPS Lab UW-Madison* – Putting the NextGen into WisDOT's Next Generation Advanced Traffic Management System

Glenn Vorhes, *UW-Madison TOPS Lab* – Safety Screening Analysis

Stephen Rau et al., *TOPS Lab UW-Madison* – Next Generation WisTransPortal Architecture

2016 Mid-Continent Transportation Research Symposium

Where the Rubber Hits the Road: Moving from Research to Implementation

October 24 – 25, 2016, Madison, Wisconsin
Madison Concourse Hotel & Governor's Club

College of Engineering
UNIVERSITY OF WISCONSIN–MADISON

WISCONSIN DEPARTMENT OF TRANSPORTATION

MAPSS Performance Improvement

Featured Speakers

MARK GOTTLIEB, P.E.

Secretary, Wisconsin Department of Transportation

Mark Gottlieb was appointed by Governor Scott Walker to serve as Secretary of the Wisconsin Department of Transportation (WisDOT) beginning in January 2011. He represented the 60th Assembly District in the Wisconsin State Legislature from 2003–2011. Prior to that, he served as an alderman and mayor in the city of Port Washington. He was born and raised in Milwaukee. He holds bachelor's and master's degrees in Civil Engineering from the University of Wisconsin-Milwaukee and is a registered professional engineer in the state of Wisconsin. He served in the US Navy from 1974–1978. His honors and recognitions include the Wisconsin Counties Association "Friend of County Government" award, League of Wisconsin Municipalities "Outstanding Legislator," Wisconsin Farm Bureau "Friend of Agriculture," and Wisconsin Builders Association "Friend of Housing." He is past-president of the Mid-America Association of State Transportation Officials (MAASTO).

STEPHEN F. MAHER, P.E.

Associate Division Director-Design Engineer Transportation Research Board

Stephen Maher joined the Transportation Research Board staff in June of 1993 as a Senior Program Officer for the National Cooperative Highway Research Program Synthesis Studies, becoming the unit manager in 1998. In 2001 he was appointed to the Engineer of Design position in the Technical Activities Division. In this position he supports the activity of five highway design committees, eight pavement design committees, and eight bridge and structures design committees. He also provides support services for TRB sponsors. In addition, he provides leadership for a team of seven staff and other managerial and administrative duties for the Technical Activities Division. Prior to joining TRB, He worked in the private sector as a geotechnical engineer for 10 years. He has been an active member of the American Society of Civil Engineers throughout his career. He graduated with a Bachelor of Science in Geology from James Madison University (Virginia) and a Master of Science in Engineering from Purdue University (Indiana). He is a registered professional engineer in the Commonwealth of Virginia and has earned Senior Executive Leadership (2006) and Business Administration (2014) Certificates from Georgetown University.

DAVID A. NOYCE, PH.D., P.E., F.ASCE

Professor and Department Chair Civil and Environmental Engineering University of Wisconsin-Madison

David Noyce is Professor of Transportation Engineering and Chair of the Department of Civil and Environmental Engineering at the University of Wisconsin–Madison (UW–Madison). Dr. Noyce received his B.S. and M.S. degrees in Civil and Environmental Engineering from UW–Madison, and received his Ph.D. in Civil (Transportation) Engineering at Texas A&M University.

Dr. Noyce has over 32 years of experience in transportation engineering including state government, private consulting, and academia. He currently serves as Director of the Traffic Operations and Safety (TOPS) Laboratory at UW–Madison. The TOPS Laboratory has over 40 research professionals conducting research in the areas of traffic safety, traffic operations, information technology, ITS, CV/AV and product development. Dr. Noyce also leads the Wisconsin Driving Simulator Laboratory with colleague Dr. John Lee and directs the UW–Madison partnership in the SAFER-SIM University Transportation Center (UTC).

He is a member of the American Society of Civil Engineers (ASCE) and the Institute of Transportation Engineers (ITE), where he previously served as chair of the Pedestrian and Bicycle Council. Dr. Noyce is involved in the Transportation Research Board (TRB) where he chaired several NCHRP project panels and conducted NCHRP research.

STEVEN J. COOK, P.E.

Engineer of Operations and Maintenance Michigan Department of Transportation

Steven Cook is a licensed professional engineer in the state of Michigan with 34 years of infrastructure engineering related experience including Operations, Design, Construction, and ITS/Connected Vehicle research, development, and deployment. He currently manages the Systems Operations and Maintenance Field Services Section, which has statewide responsibilities for maintenance operations, Transportation Operations Centers, incident management and work zone safety, congestion and mobility modeling, traffic signal program, and ITS Connected Vehicle programs. He is a member of several AASHTO subcommittees. He has a Master of Business Administration from Northwood University and a Bachelor of Science in Civil Engineering from Michigan State University.

TUESDAY, OCTOBER 25 Schedule

7:45 **Breakfast**
WISCONSIN BALLROOM

8:30 **Concurrent Sessions 4**

4-A **Accountability –** Improving Investment Decisions
Moderator: Lori Richter, WisDOT
MADISON BALLROOM

- **Mara Campbell, CH2M Consulting Engineers** – *The Right Blend of Key Ingredients for Optimizing Investment Decisions: Risk, Asset Management and Performance Management*
- **Tricia Etzler, WisDOT** – *Finance Mechanisms for Optimizing Funding Decisions*
- **Kelvin Santiago, UW-Madison TOPS Lab** – *Adding Value to Existing Data Sets*

4-B **Posters**
UNIVERSITY A

4-C **Safety –** Innovations in the Use of Data to Enhance Law Enforcement Activities
Moderator: Colonel JD Lind, WisDOT
UNIVERSITY B-C-D

- **Randy Romanski, WisDOT and Steven Parker, UW-Madison** – *Wisconsin Crash Data Management*
- **Major Charles Teasdale, WisDOT** – *Predictive Policing*
- **Dr. Anuj Sharma, Iowa State University** – *Traffic Incident Detection Enabled by Large Data Innovation*

4-D **Service –** Transportation System Management & Operations
Moderator: Dr. David Noyce, UW-Madison
SENATE

- **Natalie Smusz-Mengelkoch, Kimley-Horn and Associates** – *Estimating Benefits as a Method for Determining and Documenting Projects for Transportation Systems Management and Operation Deployments*
- **Dr. Jonathan Riehl, UW-Madison, TOPS Lab** – *A Method to Determine Roadways with Greatest Need for Intelligent Transportation Deployments*
- **Max Sauban, UW-Madison**– *Putting the NextGen into WisDOT's Next Generation Advanced Traffic Management System*

10:15 **Break**
UNIVERSITY A

10:30 **Concurrent Sessions 5**

5-A **Safety –** Active Transportation Research and Implementation
Moderator: Laura Vande Hey, WisDOT
UNIVERSITY B-C-D

- **Kristina Fields, UW-Platteville** – *Sustainable Safety Examples of Cycling Infrastructure in the Netherlands*
- **Cara Hamann, University of Iowa** – *Driver Performance Around Bicyclists and Bicycle-Specific Infrastructure*
- **Robert Schneider, UW-Milwaukee** – *Lessons Learned from the Wisconsin Pedestrian and Bicycle Crash Analysis*
- **Peter Savolainen, Iowa State University** – *Driver Yielding Behavior to Pedestrians at Midblock Crossings: Consideration of Roadway, Traffic, and Crosswalk Characteristics*

5-B **Posters**
UNIVERSITY A

5-C **Preservation –** Materials, Testing, and Installation Techniques to Extend the Useful Life of Transportation Infrastructure
Moderator: Stephen Pudloski, UW-Madison
MADISON BALLROOM

- **Dr. Hussain Bahia, UW-Madison** – *Single Edge Notched Beam Test: New Tool to Predict Thermal Cracking Resistance of Asphalt Binders*
- **Dr. Marcus Knight, Middle Tennessee State University** – *Use of Thin Overlays on Tennessee Bridges*
- **Dr. James Tinjum, UW-Madison** – *Field Validation of Injected Polyurethane Technology to Remediate Rail Substructure and Increase Rail Freight Capacity*

5-D **Mobility –** Breaking Down Barriers to Optimizing Freight Investments
Moderator: Aileen Switzer, WisDOT
SENATE

- **Ben Zietlow, UW-Madison CFIRE/MAFC** – *A Briefing of the Wisconsin Commercial Ports Development Initiative*
- **Ernie Perry, UW-Madison MAFC/CFIRE**– *Understanding FAST and MAP-21 Freight Planning Initiatives in the MAASTO states*
- **Donna Brown-Martin, WisDOT** – *Implementing Freight Plans to Maximize Investments*

12:00 **Luncheon**
WISCONSIN BALLROOM
Closing Panel Discussion

Schedule

1:30 Concurrent Sessions 2
CAPITOL A

2-A Safety – Using Data to Improve Roadside Design and Safety Features
Moderator: Andrea Bill, UW-Madison

Erik Emerson, WisDOT – *Development Process for Improving Roadside Safety Features*

William Bremer, UW-Madison – *Data Analysis to Improve Roadside Safety*

Ashirwad Barnwal, Iowa State University – *Factors Affecting the Severity of Injuries Sustained in Collisions with Roadside Objects*

2-B Posters
UNIVERSITY A

2-C Accountability – Legal Barriers to Research Implementation
Moderator: Rebecca Roeker, Chief General Counsel, WisDOT
UNIVERSITY B-C-D

Carrie Cox, Office of General Counsel, WisDOT – *Understanding Research Implementation from the Legal Perspective*

Dr. Jeremy Chapman, Professor, Rose-Hulman Institute of Technology – *Institutional Obstacles to Research and Implementation Activities*

Rob Combs, DMV, WisDOT – *From Ideas to Statutes*

2-D Service – Improving Transportation Outcomes through Implementation of Innovation and Technology Initiatives
Moderator: Daniel Yeh, Federal Relations Officer, WisDOT
CAPITOL B

Debra Elston, Director, Corporate Research, Technology & Innovation Management, FHWA – *From Lab to Market*

Mike Davies, Division Administrator, FHWA Wisconsin Division – *Promoting a Culture of Innovation – Every Day Counts*

David Esse, DTSD Innovation Officer and Tom Ries, WisDOT – *Supporting Implementation of Innovation and Technology Initiatives within Transportation Agencies*

3:00 Break
UNIVERSITY A

3:30 Concurrent Sessions 3
UNIVERSITY B-C-D

3-A Accountability – Communicating the Value of Research in an Era of Increased Accountability for Results – Expert Panel Discussion
Moderator: Mara Campbell, CH2M Consulting Engineers

Tom Rhatican, *Assistant Deputy Secretary, WisDOT*

Patty Mayers, *Communications Director, WisDOT*

Steve Walters, *Wisconsin Eye*

3-B Posters
UNIVERSITY A

3-C Preservation – Actionable Results from Recently Completed WHRP Research –
Moderator: Dave Bohnsack, WisDOT
CAPITOL A

Dr. Habib Tabatabai, UW-Milwaukee – *Evaluation of Thin Polymer Deck Overlays and Deck Sealers*

Bill Oliva, Bureau of Structures, WisDOT – *Quantifying the Results of Structures Research: A View from the Field*

Dr. Ramon Bonaquist, Advanced Asphalt Technologies, LLC – *Critical Factors Affecting Asphalt Concrete Durability*

Barry Paye, Bureau of Technical Services, WisDOT – *Quantifying the Results of Pavement Research: A View from the Field*

3-D Mobility – The Interplay among Speed Limits, Infrastructure and Driver Behavior
Moderator: Bill McNary, WisDOT
CAPITOL B

Raha Hamzeie, Iowa State University – *The Interrelationship between Speed Limits, Geometry and Driver Behavior: A Proof-of-Concept Study Utilizing the Naturalistic Driving Study*

Erin Schoon, WisDOT and Peter Rafferty, UW-Madison TOPS Lab – *Speed Effects of Changes in Posted Speed Limit on Interstates*

Lt. Chris Jushka, WisDOT – *Aerial Speed Enforcement*

5:00 Reception
WISCONSIN BALLROOM

Schedule at a Glance

7:30 Registration and Breakfast
Wisconsin Ballroom

8:30 Opening General Session
Madison Ballroom

Welcome Remarks

Keynote Panel

10:00 Break
University A

10:15 Concurrent Sessions 1

1-A Mobility – Moving People and Goods – Advances in Measuring Travel Delay and Reliability
Capitol A

1-B Posters
University A

1-C Preservation – Everything Old is New Again: Future Applications for Recycled Materials
University B-C-D

1-D Service – Moving Research to Implementation from a National Perspective
Capitol B

12:00 Luncheon
Featured Speaker: Connected and Autonomous Vehicles – Research to Implementation
Wisconsin Ballroom

1:30 Concurrent Sessions 2

2-A Safety – Using Data to Improve Roadside Design and Safety Features
Capitol A

2-B Posters
University A

2-C Accountability – Legal Barriers to Research Implementation
University B-C-D

2-D Service – Improving Transportation Outcomes through Implementation of Innovation and Technology Initiatives
Capitol B

3:00 Break
University A

3:30 Concurrent Sessions 3

3-A Accountability – Communicating the Value of Research in an Era of Increased Accountability for Results – Expert Panel Discussion
University B-C-D

3-B Posters
University A

3-C Preservation – Actionable Results from Recently Completed WHRP Research
Capitol A

3-D Mobility – The Interplay among Speed Limits, Infrastructure and Driver Behavior
Capitol B

5:00 Reception
Wisconsin Ballroom

Schedule at a Glance

7:45 Breakfast
Wisconsin Ballroom

8:30 Concurrent Sessions 4

- **4-A Accountability –** Improving Investment Decisions
  Madison Ballroom
- **4-B Posters**
  University A
- **4-C Safety –** Innovations in the Use of Data to Enhance Law Enforcement Activities
  University B-C-D
- **4-D Service –** Transportation System Management & Operations
  Senate

10:15 Break
University A

10:30 Concurrent Sessions 5

- **5-A Safety –** Active Transportation Research and Implementation
  University B-C-D
- **5-B Posters**
  University A
- **5-C Preservation –** Materials, Testing, and Installation Techniques to Extend the Useful Life of Transportation Infrastructure
  Madison Ballroom
- **5-D Mobility –** Breaking Down Barriers to Optimizing Freight Investments
  Senate

12:00 Luncheon
Wisconsin Ballroom

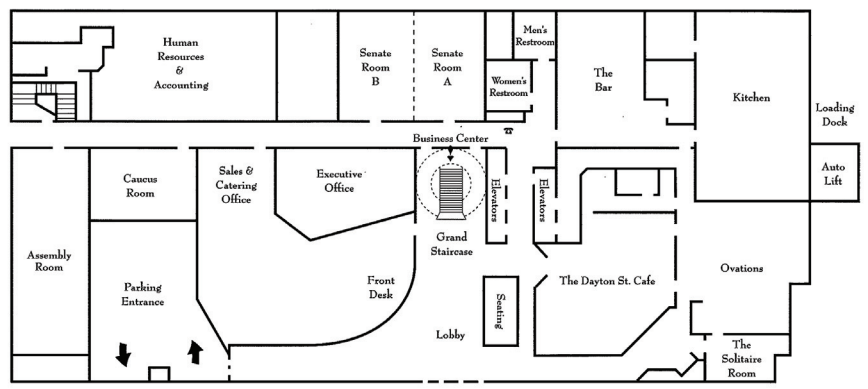
Closing Panel Discussion

Final Adjournment

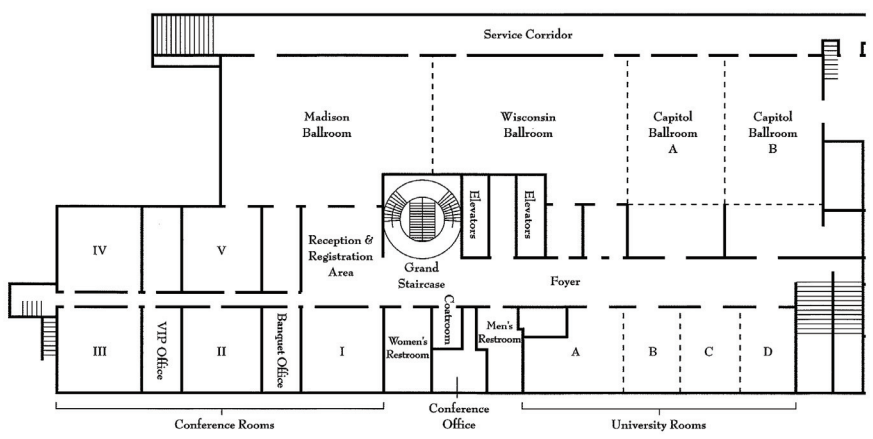
MADISON CONCOURSE HOTEL & GOVERNOR'S CLUB

The 2016 Mid-Continent Transportation Research Symposium holds sessions in the following rooms: Conference registration: Top of the Grand Staircase on the second floor. Second floor: Madison Ballroom, Wisconsin Ballroom, Capitol A and B, and University A and B-C-D rooms. First floor: Senate room

1st Floor



2nd Floor



Schedule

7:30 Registration and Breakfast
WISCONSIN BALLROOM
Facilitators generate panel questions within topical tables

8:30 Opening general session
MADISON BALLROOM
Includes welcome and keynote panel

Presentation of the Colors: Kelly Lynch, Officer in Charge, Wisconsin Department of Transportation Honor Guard

Pledge of Allegiance: Lori Richter, Chief, Performance, Policy and Research, WisDOT

Conference Overview: Lori Richter, Chief, Performance, Policy and Research, WisDOT

Keynote Panel Opening Comments:

Mark Gottlieb, P.E., *Secretary, Wisconsin Department of Transportation*

Dr. David Noyce, Ph.D., P.E., *UW-Madison College of Civil and Environmental Engineering*

Stephen Maher, P.E., *Transportation Research Board*

Keynote Panel: Facilitated by Lori Richter, Chief, Performance, Policy and Research, WisDOT

Mark Gottlieb, P.E., *Secretary, Wisconsin Department of Transportation*

Dr. David Noyce, Ph.D., P.E., *UW-Madison College of Civil and Environmental Engineering*

Stephen Maher, P.E., *Transportation Research Board*

10:00 Break
UNIVERSITY A

10:15 Concurrent Sessions 1

- **1-A Mobility –** Moving People and Goods – Advances in Measuring Travel Delay and Reliability
  Moderator: Dewayne Johnson, WisDOT
  CAPITOL A
  Elizabeth Schneider, WisDOT – *Advances in Measuring Travel Delay and Reliability*
  Peter Rafferty, UW-Madison TOPS Lab – *Examining Multistate Mobility in the Mid-America Region*
  Jangik Jin, UW-Madison – *Negative Externality of Traffic Congestion and Housing Values: Evidence from the US Great Lakes Megaregion*
- **1-B Posters**
  UNIVERSITY A
- **1-C Preservation –** Everything Old is New Again: Future Applications for Recycled Materials
  Moderator: Jennifer Walejko, WisDOT
  UNIVERSITY B-C-D
  Angela Pakes Ahlman, UW-Madison – *Life Cycle Benefits of Using Recycled Materials*
  Barry Paye, Bureau of Technical Services, WisDOT – *Paving the Way for Support in the Use of Recycled Materials*
  Girum Merine, WisDOT – *Cold-in-Place Recycling Alternative Rehabilitation Technique Initiative*
- **1-D Service –** Moving Research to Implementation from a National Perspective
  Moderator: Lynn Hanus, WisDOT
  CAPITOL B
  Stephen Maher, P.E., Associate Division Director, TRB – *TRB Overview and Assisting State DOTs Moving from Research to Implementation*
  Jason Bittner, Applied Research Associates Inc. – *Implementation Perspectives and Sponsored Research*
  Patrick Casey, CTC and Associates – *National Initiatives for Moving Research into the Real World*

12:00 Luncheon
WISCONSIN BALLROOM

Featured Speaker: Connected and Autonomous Vehicles – Research to Implementation

Steven Cook, P.E., *MIDOT – Michigan Connected and Automated Vehicle Support Initiatives*