



TRB Partners in Research Symposium: Transformational Technologies

October 31 and November 1, 2016

Westin Detroit Metropolitan Airport
Detroit, Michigan

Sponsored by

Michigan Department of Transportation
National Cooperative Highway Research Program

 TRANSPORTATION RESEARCH BOARD

The National Academies of
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TRB Partners in Research Symposium: Transformational Technologies

New technologies have the potential to transform transportation as we know it. Public agencies are being challenged to facilitate the deployment of these technologies in a manner and timeframe that will lead to improved safety, reduced congestion, enhanced sustainability, and economic development. This TRB symposium will bring leaders from the public and private sectors and academia together to help generate research and innovations to enable agencies to meet this challenge. The symposium will lay the foundation for developing research roadmaps and forming partnerships. Technologies that are expected to be addressed include connected and automated vehicles, shared-use mobility services, smart cities and the internet-of-things, unmanned aircraft systems, NextGen, big data and cybersecurity, and alternative fueled vehicles.

Each of these technologies is the subject of a good deal of research, but collectively they may change the nature and role of transportation agencies at all levels of government. Transformational technologies are expected to significantly impact the way these agencies plan, design, construct, operate, and maintain our transportation systems. The adoption and use of these technologies may also drive shifts in demographics, vehicle ownership, land use, and travel patterns - with as yet undetermined consequences on congestion, energy use, communities, and the environment. At this point, public agencies have more questions than answers - necessitating a program of research to address those gaps and needs.

More details on TRB programs and activities addressing Transformational Technologies in Transportation can be found at www.TRB.org/main/TransTech.aspx.

The **Transportation Research Board** is one of seven major programs of the National Academies of Sciences, Engineering, and Medicine. The mission of the Transportation Research Board is to increase the benefits that transportation contributes to society by providing leadership in transportation innovation and progress through research and information exchange, conducted within a setting that is objective, interdisciplinary, and multimodal. The Board's varied committees, task forces, and panels annually engage about 7,000 engineers, scientists, and other transportation researchers and practitioners from the public and private sectors and academia, all of whom contribute their expertise in the public interest. The program is supported by state transportation departments, federal agencies including the component administrations of the U.S. Department of Transportation, and other organizations and individuals interested in the development of transportation.

ACKNOWLEDGEMENTS

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TRB sincerely appreciates the following organizations for their generous support of the Partners in Research Symposium on Transformational Technologies.

PLATINUM



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SYMPOSIUM AGENDA

Monday, October 31 **Jane Lappin, Master of Ceremonies:** Director of Public Policy and Government Affairs, Toyota Research Institute

7:30 – 8:30 a.m. **Continental Breakfast** (Pre-Function Lindbergh AB)

8:30 – 8:50 a.m. **Welcome and Symposium Objectives** (Lindbergh AB)

- **Neil Pedersen:** Executive Director, Transportation Research Board of the National Academies of Sciences, Engineering and Medicine (TRB)
- **Kirk Steudle:** Director, Michigan Department of Transportation (MDOT), and Member and Past Chair of TRB Executive Committee

8:50 – 10:00 a.m. **Keynotes: Speed and Grace in Transformational Technologies** (Lindbergh AB)

How do we equate the speed of technology and the scale of the transformation with desirable societal outcomes as well as commercial outcomes?

Kirk Steudle, Moderator: Executive Director, MDOT

- **Emily Castor:** Director of Transportation Policy, Lyft
- **Geoffrey Kasselmann:** Executive Managing Director, National Industrial Practice, Newmark Grubb Knight Frank
- **Ken Leonard:** Director, ITS Joint Program Office, USDOT
- **Chan Lieu:** Senior Legislative Advisor, Venable LLC
- **Dean Wise:** Vice President, Network Strategy, Burlington Northern Santa Fe Railway

10:00 – 10:30 a.m. **Coffee break** (Pre-Function Lindbergh AB)

10:30 – 11:45 a.m. **Panel: Technology and Policy Driving Mobility** (Lindbergh AB)

This session introduces the technologies under consideration, as well as the broad role of policy development in underlining their benefits. Research and deployment as means of combining technological potential with public policy goals will also be presented.

Susan Shaheen, Moderator: Co-Director, Transportation & Sustainability Research Center, University of California, Berkeley

- **Pascal Van Hentenryck:** Seth Bonder Collegiate Professor, University of Michigan
- **Jane Lappin:** Toyota Research Institute
- **King Gee:** Director of Engineering and Technical Services, American Association of State Highway Transportation Officials
- **Abbas Mohaddes and Peter Sweatman:** Principals, CAVita

11:45 a.m. – 12:30 p.m. **Panel: The Art of the Possible in Public-Private Collaboration** (Lindbergh AB)

This panel is focused on quick reactions on how to facilitate the public-private activities needed for deployment in a fast, disruptive environment.

Jane Lappin, Moderator: Toyota Research Institute

- **Justin Holmes:** Director of Corporate Communications and Public Policy, Zipcar
- **Eric Johnson:** Lockheed Martin Associate Professor of Avionics Integration, Georgia Institute of Technology
- **Trish Plonski:** Senior Vice President Business Development, Strategy and M&A, Xerox Services

12:30 – 1:45 p.m. **Lunch** (Lindbergh C)

- **Reuben Sarkar:** Deputy Assistant Secretary for Transportation, U.S. Department of Energy

1:45 – 4:30 p.m.

POLICY BREAKOUT SESSIONS

What do policy makers need to know from technology companies and what do technology companies need from policy makers? Each breakout will step through discussion stages to address challenges of critical importance, policy issues and models, beneficial roles for technology, potential positive and negative impacts on policy objectives, and business models.

P1: Personal and Shared Mobility (Wright A)

Moderators **Susan Shaheen**: Co-Director, Transportation & Sustainability Research Center, University of California, Berkeley

Larry Yermack: Strategic Advisor, Cubic

Commentators **Art Guzzetti**: Vice President of Policy, American Public Transportation Association

Paige Tsai, Policy and Insights, Uber

Richard Wallace, Director of Transportation Systems Analysis, Center for Automotive Research

P2: Freight Mobility and Evolving Supply Chains (Wright B)

Moderator **Anne Strauss-Wieder**: Director, Freight Planning, North Jersey Transportation Planning Authority (NJTPA)

Commentator **Dean Wise**: Vice President of Network Strategy, BNSF Railway

P3: Smart Cities I: Mobility & Access (Earhart A)

Moderator **Joanna Pinkerton**: Co-Director, Honda/OSU Partnership, Ohio State University

Commentator **Rob Bertini**: Director, Center for Urban Transportation Research, USF

P4: Smart Cities II: Entrepreneurship & Economic Development (Earhart B)

Moderators **Regina Hopper**: President & CEO, Intelligent Transportation Society of America

Wes Guckert: National Product Council, Urban Land Institute

P5: Air and Space Innovation (Columbus)

Moderator **Yu Zhang**: Associate Professor, Department of Civil and Environmental Engineering, University of South Florida

Commentators **Chris Brinton**: President, Mosaic ATM

Eric Johnson: Professor, Georgia Tech

Parimal Kopardekar: Principal Investigator NASA NextGen

Joseph Post: Deputy Director, NAS Systems Engineering and Integration, FAA

3:00 – 3:30 p.m.

Break

4:45 – 5:45 p.m.

Plenary reporting by moderators (Lindbergh AB)

5:45 – 7:15 p.m.

Reception (Lindbergh C)

Tuesday, November 1 **Jeffrey Paniati, Master of Ceremonies:** Executive Director, Institute of Transportation Engineers

7:00 – 8:00 a.m. **Continental Breakfast** (Pre-Function Lindbergh AB)

8:00 – 8:30 a.m. **The Story So Far** (Lindbergh AB)
Touching base after day one: perspectives from two rapporteurs. How can we facilitate the technology/policy dialog? What important policy challenges could technology address? How could new policy models advance the use of technology and innovative services? Where are technology and market forces leading us now? Can this be channeled along our critical paths? What problems do we want technology and supportive policy to solve?

- **Chris Hendrickson:** Hamerschlag University Professor of Engineering Emeritus, Carnegie Mellon University
- **Shelley Row:** President and CEO, Shelley Row Associates

8:30 – 11:15 a.m. **TECHNOLOGY BREAKOUT SESSIONS**
Technology Deployment through Research Partnerships: How will technology companies work with government and academia to accelerate deployment? How will research unlock the transformational potential of the technologies under discussion? Who should be at the table in order to maximize impact and accelerate progress? What forms should these partnerships take, and what steps are needed to get started?

T1: Automation & Connectivity I: Light Duty Vehicles (Wright A)
Moderator **Frank Sgambati:** Director of Marketing & Product Innovation, Robert Bosch LLC
Commentators **Emily Frascaroli:** Ford Motor Company
 Timothy Johnson: National Highway Traffic Safety Administration

T2: Automation & Connectivity II: Heavy Duty Vehicles (Wright B)
Moderator **Steve Shladover:** Program Manager, Mobility, California Partners for Advanced Transportation Technology
Commentators **Anne Strauss-Wieder:** NJTPA
 Sabrina Sussman: Senior Policy Advisor, Federal Affairs Office, Bill de Blasio, New York Mayor
 Allan Rutter: Division Head, Freight Mobility Division, Texas A&M Transportation Institute

T3: Automation & Connectivity III: Infrastructure (Earhart A)
Moderators **Ananth Prasad:** Vice President, HNTB
 Katherine Turnbull: Executive Associate Director, Texas A&M Transportation Institute
Commentator **Bob Arnold:** Acting Associate Administrator, Office of Operations, FHWA

T4: Big Data and Networks (Earhart B)
Moderator **Al Hero:** R. Jamison and Betty Williams Professor of Electrical Engineering and Computer Science, University of Michigan
Commentator **James Pol:** Technical Director, Safety Research and Development, FHWA

T5: Alternative Fuel Vehicles and Infrastructure (Columbus)
Moderator **Scott Belcher:** CEO, Telecommunications Industry Association
Commentator **Reuben Sarkar:** U.S. Department of Energy

10:00 a.m. – 10:15 a.m. **Break**

11:30 a.m. – 12:15 p.m. **Plenary reporting by moderators** (Lindbergh AB)

12:15 – 12:30 p.m.

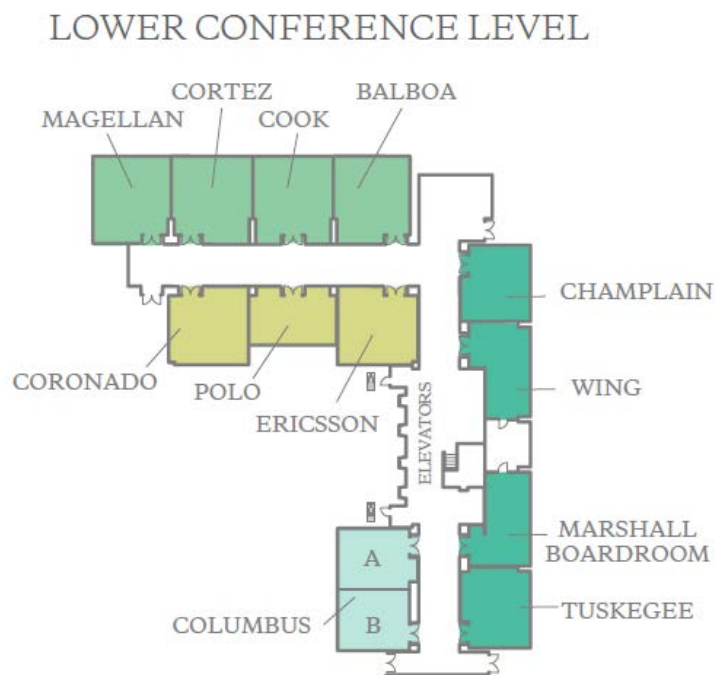
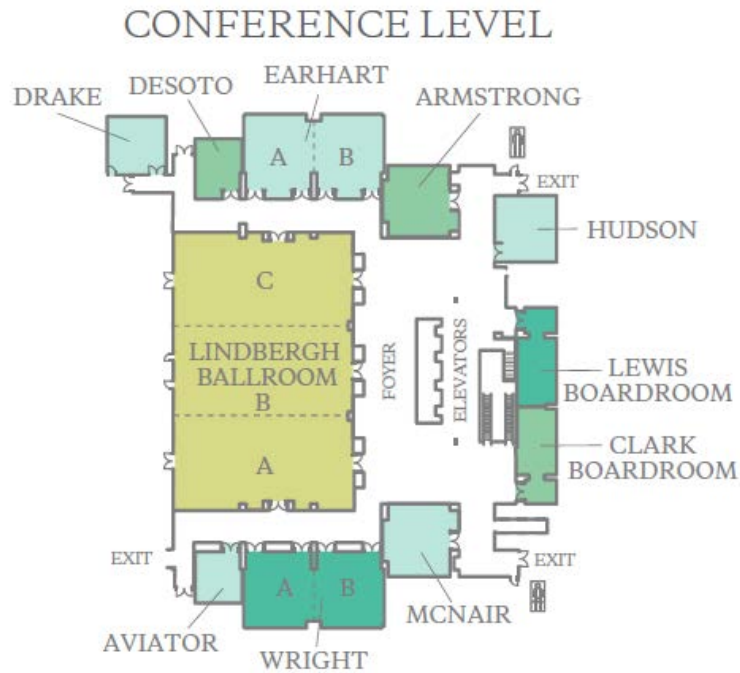
What's Next? (Lindbergh AB)

- **Kirk Steudle:** Executive Director, MDOT
- **Mark Norman:** Director of Program Development & Strategic Initiatives, TRB

12:30 p.m.

Adjourn

HOTEL FLOORPLAN



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