



10th University Transportation Center Spotlight Conference Pedestrian and Bicycle Safety

December 1–2, 2016

Keck Center
Washington, D.C.

Organized by
Transportation Research Board

Sponsored by
The University Transportation Centers Program
Office of the Assistant Secretary for Research and Technology,
U.S. Department of Transportation

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www.TRB.org

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WELCOME

As transportation professionals, we often rely on data to guide our work. Those data reveal some encouraging trends in walking and bicycling: an increasing number of cities, counties, and states are adopting policies and plans to increase the number and share of people walking and bicycling for transportation; federal funding for pedestrian and bicycle transportation increased from \$113 million in 1994 to a peak of \$1.2 billion in 2009; and research on these topics has increased, from fewer than ten peer-reviewed articles per year in the 1970s and 1980s to more than 120 per year in 2012 and beyond.



Dill

One trend that is not positive, however, is in the area of safety. From 2005 to 2015, the number of pedestrian and bicycle fatal crashes remained largely flat nationally—and increased in 2015—while traffic crashes as a whole fell considerably over that same time period. If we do not address the safety threats for people walking and bicycling in our communities, we will not achieve our goals, including the goal the Federal Highway Administration recently adopted in *Strategic Agenda for Pedestrian and Bicycle Transportation*:

An 80% reduction in pedestrian and bicycle fatalities and serious injuries within 15 years and a 100% reduction in pedestrian and bicycle fatalities and serious injuries within 20 years.

To reach this goal, we will need to adopt new strategies, and research will be essential. This conference is one way to advance that practice-relevant research, through the following aims:

- To share research needs and findings between university researchers, U.S. Department of Transportation staff, and transportation practitioners;
- To articulate knowledge gaps to help define specific research needs; and
- To foster ongoing collaboration between universities and practitioners.

Our opening session helps us define the problem and its dimensions. The plenary sessions focus on the role of policy and guidance, emerging and future technologies, behavior change, and equity. We had a record number of submissions to present at this conference. Several of those will be presented as posters, while others will be presented in breakout sessions. We have designed the breakout sessions to facilitate active discussion that we hope leads to concrete outcomes, including identifying research needs that can change practice, stimulating collaboration among universities, improving research methods and approaches, encouraging more consistency in research to allow for pooling or synthesis of data to strengthen conclusions, and focusing university research to be most relevant to practice.

Two more notes about how we planned the conference. We are defining safety to encompass both objective measures (that is, crashes and injuries) and perceptions of safety, which influence people's decisions on whether, when, and where to walk and bicycle. We also paid particular attention to the differences and similarities between walking and bicycling as modes of transportation.

Thanks to the members of the planning committee, listed on the opposite page, for their hard work in planning and organizing this conference. We also are grateful for the organizational skills of Bernardo Kleiner and Freda Morgan from TRB and for the helpful guidance of Robin Kline and Tom Bolle, Office of the Assistant Secretary for Research and Technology, U.S. Department of Transportation.

On behalf of the committee, I welcome you to learn, engage, and help us move forward.

–Jennifer Dill, Portland State University
Conference Steering Committee Chair

December 1–2, 2016



CONFERENCE AT A GLANCE

Thursday, December 1

7:30 a.m.–8:30 a.m.	Continental Breakfast	1st Floor Atrium
7:30 a.m.– 5:00 p.m.	Registration	1st Floor Atrium
8:30 a.m.–10:00 a.m.	Opening Session	Keck 100
10:00 a.m.–10:30 a.m.	Morning Break	1st Floor Atrium
10:30 a.m.–Noon	Plenary Session 1: How Did We End Up Where We Are Today with Design?: The Role of Policy and Guidance	Keck 100
Noon–1:30 p.m.	Lunch	1st Floor Atrium
1:30 p.m.–3:00 p.m.	Plenary Session 2: Impact of Emerging and Future Technologies on Pedestrian and Bicycle Safety	Keck 100
3:00 p.m.–3:30 p.m.	Afternoon Break	1st Floor Atrium
3:30 p.m.–5:00 p.m.	Plenary Session 3: Behavior Change Mechanisms	Keck 100
5:00 p.m.–7:00 p.m.	Reception and Poster Session	3rd Floor Atrium

Friday, December 2

7:30 a.m.–8:30 a.m.	Continental Breakfast	1st Floor Atrium
7:30 a.m.– 4:00 p.m.	Registration	1st Floor Atrium
8:30 a.m.–10:00 a.m.	Plenary Session 4: Cycling and Pedestrian Equity	Keck 100
10:00 a.m.–10:30 a.m.	Morning Break	1st Floor Atrium
10:30 a.m.–Noon	Concurrent Breakout Sessions	
	Children	Keck 100
	Infrastructure and Pedestrians	Keck 101
	Infrastructure and Bicyclists	Keck 103
	Data	Keck 105
	Pedestrian Safety Analysis	Keck 106
	Bicycle Safety Analysis	Keck 208
Noon–1:15 p.m.	Lunch	1st Floor Atrium
1:15 p.m.–2:15 p.m.	Breakout Sessions (<i>continued</i>)	
2:15 p.m.–2:30 p.m.	Afternoon Break	1st Floor Atrium
2:30 p.m.–4:00 p.m.	Final Session: Breakout Reports and Closing Comments	Keck 100
4:00 p.m.	Adjourn	Keck 100

December 1–2, 2016



CONFERENCE AGENDA

Thursday, December 1

7:30 a.m.–8:30 a.m.

Continental Breakfast

7:30 a.m.–5:00 p.m.

Registration

8:30 a.m.–10:00 a.m.

Opening Session

Jennifer Dill, Portland State University, *moderator*

Pedestrian and Bicycle Safety Overview

T. Bella Dinh-Zarr, Vice Chairman, National Transportation Safety Board

Comparison of U.S. Metropolitan Region Fatal Pedestrian and Bicycle Crash Rates

Robert Schneider, University of Wisconsin, Milwaukee

Review of Bicycle and Pedestrian Treatment Safety Research

Kari Watkins, Georgia Tech

Federal Transit Administration Perspective

Ellen Partridge, U.S. Department of Transportation (DOT)

10:00 a.m.–10:30 a.m.

Morning Break

10:30 a.m.–Noon

Plenary Session 1: How Did We End Up Where We Are Today with Design? The Role of Policy and Guidance

Shaunna K. Burbidge, Active Planning, *moderator*

This session will present an engaging and thought-provoking history of transportation policy and how traditional conservative transportation policies have led to rigid, standardized, simplistic design approaches to an enormously complex transportation system. As traditional policies and designs have focused on the users of one mode—motor vehicles—the outcome has been a transportation system and land use development pattern that makes mobility and access to goods and services difficult, and in many cases dangerous, for people who travel by foot or bicycle. Key objectives of this session include understanding the nexus between transportation and land use, recognizing the importance of context-sensitive design and the need for flexibility in transportation system design, and summarizing the efforts to modernize transportation design approaches and policies for a more innovative and accessible transportation system.

Panelists

Bill Schulteiss, Toole Design

Ryan Russo, New York City DOT

Sam Zimbabwe, District of Columbia DOT

Noon–1:30 p.m.

Lunch

1:30 p.m.–3:00 p.m.

Plenary Session 2: Impact of Emerging and Future Technologies on Pedestrian and Bicycle Safety

Nancy Lefler, VHB, *moderator*

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Technology offers both benefits and drawbacks to pedestrian and bicycle safety. In research, technology offers ways to collect data on crashes and travel exposure—ways that so far have been limited. Similarly, technology offers the potential for assistive devices and warning systems in many parts of the transportation system that could reduce crashes and injuries, and could provide travel information that increases nonmotorized trip rates. Unfortunately, technology also yields distractions for drivers and for vulnerable road users, which may lead to increases in the number of incidents and may change the type and severity of incidents. Panelists will present recent research on how electronic devices are being used by pedestrians, how technology can be used for data collection, and ways in which autonomous vehicles will interact with pedestrians. Presentations will be followed by a broader panel discussion.

Pedestrian and Driver Distraction: Overview and National Highway Traffic Safety Administration (NHTSA) Prevalence and Risk Study

Heidi Coleman, NHTSA, and Bob Scopatz, VHB

Crowdsourcing Pedestrian and Cyclist Activity Data

Alex Rixey, Fehr & Peers, DC

Autonomous Vehicle Displays and Pedestrian Safety

Michael Clamann, Duke University

3:00 p.m.–3:30 p.m.

Afternoon Break

3:30 p.m.–5:00 p.m.

Plenary Session 3: Behavior Change Mechanisms

Susan Handy, National Center for Sustainable Transportation, *moderator*

What was the pedestrian thinking when she crossed the road midblock? What was the driver thinking when he passed the bicycle too closely? While improvements in bicycle and pedestrian infrastructure can improve the safety outcomes, the behavior of drivers, pedestrians, and bicyclists still plays a major role. Psychological theories provide important insights into the mechanisms that govern behavior of all road users and that may lead to desired changes in behavior. This panel discusses such psychological factors as temperament and personality, cognitive development, and implicit bias, and presents results of studies that use interventions aimed at changing behavior and improving pedestrian and bicycle safety.

Psychology of Roadway Interactions: Implications for Road Safety

Tara Goddard, Portland State University

Intervention to Reduce Distracted Walking

David Schwebel, University of Alabama at Birmingham

Developing and Evaluating Population-Level Interventions Aimed at Behavior Change to Reduce Pedestrian–Bike Crashes

Laura Sandt, University of North Carolina (UNC) Highway Safety Research Center

5:00 p.m.–7:00 p.m.

Reception and Poster Session

Developing a Safety Prioritization Tool to Address Sidewalk and Bike Lane Gaps in Central Florida, Hatem Abou-Senna and Essam Radwan, University of Central Florida; Ayman Mohamed, Florida DOT

The Conspicuity of Bicycle-Visibility Enhancement Systems: From Test Tracks to Public Roads, Rajaram Bhagavathula, Ronald Gibbons, Brian Williams, and Travis Terry, Virginia Tech Transportation Institute (VTTI)

Extent of Changes in Pedestrian and Bicyclist Attitudes and Behaviors Directly After a Complete Streets Project in Florida, Julie Bond and Amy Lester, Center for Urban Transportation Research, University of South Florida; Stephen Benson, Florida DOT

Pedestrian and Cyclist Safety in the United States and Germany, 2001–2002 and 2008–2009, Ralph Buehler, VTTI, and John Pucher, Rutgers, The State University of New Jersey



Nonmotorized Travel Behavior at High-Risk Intersections, Shaunna K. Burbidge, Active Planning

Exploration of Bicycle Safety Impacts from Seattle's Commercial Vehicle Activity, Polina Butrina, Edward McCormack, Anne Goodchild, and Jerome Drescher, University of Washington, Seattle

Seeing Hazards: Using Eye-Tracking Technology and Google Street View to Understand Cyclists' Perceptions, Brian Caulfield and William Brazil, Trinity College Dublin, Ireland

Evaluating Accessibility for Nighttime Walking and Bicycling Among Low-Income Shift Workers, Shailesh Chandra, Jose Jimenez, and Ajay Zalavadia, California State University, Long Beach; Ramalingam Radhakrishnan, Prairie View A&M University, Long Beach

Declining to Charge, Declining to Prosecute: What Prevents Many Pedestrian and Bicycling Deaths from Leading to Criminal Charges?, Jeremy Chapman, Rose Hulman Institute of Technology

Big Data Brings New Insights in Bicycle Safety Analysis: An Application of CyclePhilly Data to Assess Wrong-Way Riding, Christopher Cherry, Nirbesh Dhakal, and Ziwen Ling, University of Tennessee, Knoxville

E-Bikes and Safety: A Review of the Foundational Empirical Studies, Christopher Cherry and Ziwen Ling, University of Tennessee, Knoxville; John MacArthur, Portland State University

Development of Decision Support Tools to Assess Pedestrian and Bicycle Safety: Focus on Population, Demographic, and Socioeconomic Spectra, Deo Chimba, Tennessee State University

Positioning Methodology Using Bluetooth and Smartphone Technologies to Support Wayfinding for the Visually Impaired, Chen-Fu Liao and Max Donath, Roadway Safety Institute, University of Minnesota

Estimating Lives Saved and Injuries Reduced by Bicycle Helmet Use in Denver, Bruce Janson, Wesley Marshall, and Nicholas Ferenchak, University of Colorado, Denver

The Influence of Mobile Device Alerts on Road Crossing for Texting Pedestrians, Pooya Rahimian, Elizabeth E. O'Neal, Junghum Paul Yon, Luke Franzen, Yuanyuan Jiang, Jodie M. Plumert, and Joseph K. Kearney, University of Iowa

Does Knowledge Lead to Behavior Change?: A Case Study in Florida, Achilleas Kourtellis and Pei-Sung Lin, Center for Urban Transportation Research, University of South Florida

Virtual Guide Dog: Next-Generation Pedestrian Signal for the Visually Impaired, Joyoung Lee, Zijia Zhong, Branislav Dimitrijevic, and Kitae Kim, New Jersey Institute of Technology

Bikesharing and Bicycle Safety, Elliot Martin, Adam Cohen, and Susan Shaheen, University of California, Berkeley; Jan Botha, San Jose State University

Safety and Related Barriers to Bike Sharing Among Low-Income and Diverse Communities, Jennifer Dill, Nathan McNeil, John MacArthur, and Joseph Broach, Portland State University

Developing an Online Reference Tool for Pedestrian and Bicycle Safety Information, Nathan McNeil and Christopher Monsere, Portland State University

Design Guidelines for Safe Bicyclist and Pedestrian Accommodations in Work Zones, David Noyce, John Shaw, Madhav Chitturi, and William Bremer, University of Wisconsin, Madison

Policy for Accommodating and Prioritizing Pedestrians at Signalized Intersections, Alex Rixey, Fehr & Peers, DC

Case Study of the Effect of Crosswalk Enforcement Operations on Driver Yielding Behavior at Unsignalized Midblock Crosswalks in Raleigh, North Carolina, Sarah Searcy, Mathew Palmer, Kristy Jackson, Daniel Findley, and Tim Nye, Institute for Transportation Research and Education, North Carolina State University

Bicyclist and Pedestrian Safety in Work Zones: Recent Advances and Emerging Directions, John Shaw, Madhav Chitturi, Youngjun Han, William Bremer, and David Noyce, University of Wisconsin, Madison

Exploring Effects of Urban Design Qualities on Multimodal Safety, Scott Shea and Richard Porter, University of Utah

Strategy for Identifying High-Pedestrian Crash Locations in Kumasi, Ghana, Moses Tefe, Norwich University; Williams Ackaah, Council for Scientific and Industrial Research, Building and Road Research Institute, Ghana; Emmanuel Adanu, Samwel Zephaniah, and Steven Jones, University of Alabama

Improving Pedestrian and Bicyclist Safety with Bus-Based Collision Warning Systems, Shawn Turner and Katherine Turnbull, Texas A&M Transportation Institute (TTI)

Comparative Study of Rail-Pedestrian and Cyclist Trespassing Crash Injury Severity at Highway-Rail Grade Crossings and Noncrossings, Meng Zhang, Asad J. Khattak, and David Clarke, University of Tennessee, Knoxville; Jun Liu, Virginia DOT



Friday, December 2

7:30 a.m.–8:30 a.m.

Continental Breakfast

7:30 a.m.–4:00 p.m.

Registration

8:30 a.m.–10:00 a.m.

Plenary Session 4: Cycling and Pedestrian Equity

Jeff LaMondia, Auburn University, *moderator*

Equitable bicycle and pedestrian infrastructure supports users of all backgrounds and needs, including traditionally underserved and underrepresented youth, the elderly, women, people of color, and low-income populations. While ridership in walking and cycling has risen significantly in these groups, they often perceive this travel as less safe, are less likely to be involved in the planning process, and their preferred facilities are often not prioritized relative to locations that might be more high-profile or selected to support more vocal populations. Therefore, the core objectives of this plenary are to determine a) how to design and locate nonmotorized facilities that support these underrepresented groups and how to empower local underrepresented groups to direct this planning process.

Access Denied: Biking While Black and Hispanic or Latino in New York and New Jersey

Charles Brown, Alan M. Voorhees Transportation Center, Rutgers University

Incorporating the Needs of Underrepresented Groups in Bike and Pedestrian Planning

Carniesha Kwashie, The Mayor's Fund for Philadelphia

Sensory Exploration into Expanding Safe Streets for Pedestrians

Anthony Stephens, American Council of the Blind

10:00 a.m.–10:30 a.m.

Morning Break

10:30 a.m.–Noon

Concurrent Breakout Sessions

Brief presentations and discussion:

- How do we advance research in this area, including data and methods?
- How can we collaborate more?
- How do we make this research most relevant to practice?

10:30 a.m.–Noon

Children

Ruth Steiner, University of Florida, *moderator*

Redefining the Child Pedestrian Safety Paradigm: Identifying High-Fatality Concentrations Around Parks, Nick Ferenchak and Wes Marshall, University of Colorado, Denver

Identifying and Addressing Fear, Perception, and Risk Related to Walking and Bicycling to School, Leigh Ann Von Hagen, Alan M. Voorhees Transportation Center, Rutgers University, and Shannon Sweeney, Robert Wood Johnson Medical School, Rutgers University

Crossing One-Way vs. Two-Way Simulated Traffic: Differences in Crash Risk Among Adolescent Bicyclists, Elizabeth E. O'Neal, Jodie M. Plumert, and Joseph K. Kearney, University of Iowa; Timofey Grechkin, University of Southern California

Predictable Is Preventable: Engaging Police to Identify Pedestrian–Vehicle Near-Miss Incidents at School Crossings, Leigh Ann Von Hagen, Catherine Bull, and Andrea Lubin, Alan M. Voorhees Transportation Center, Rutgers University



Child Pedestrians' Perceived Risk of the Crossing Place, Hagai Tapiro, Tal Oron-Gilad, and Yisrael Parmet, Ben-Gurion University of the Negev, Israel
Low-Stress Routes to School, Kelcie Ralph and Whitney Miller, Rutgers University; Leigh Ann Von Hagen and Sean Meehan, Alan M. Voorhees Transportation Center, Rutgers University
Vision Zero with a Youth Lens: A Positive Deviance Study of Pedestrian and Bicyclist Safety Outcomes, Seth LaJeunesse and Stephen Heiny, UNC Highway Safety Research Center

10:30 a.m.–Noon

Infrastructure and Pedestrians

Michael Carroll, City of Philadelphia, *moderator*

Development of Crash Modification Factors for Uncontrolled Pedestrian Crossing Treatments, Carl Sundstrom, Charlie Zegeer, Raghavan Srinivasan, Bo Lan, Sarah Smith, Daniel Carter, and Nathan J. Thirsk, UNC Highway Safety Research Center; Craig Lyon, Persaud and Lyon, Inc., Canada; Bhagwant Persaud, Ryerson University, Canada; John Zegeer and Erin Ferguson, Kittelson and Associates, Inc.; Ron Van Houten, Center for Education and Research in Safety, Western Michigan University
Evaluating the Suitability of Leading Pedestrian Intervals at Signalized Intersections in Portland, Oregon, Oliver Smith, Portland Bureau of Transportation
Leading Pedestrian Interval: What Are You Doing with Your 5 Seconds?, Angelo Rao, City of Lakeland, Florida
Comparative Safety Analysis on Conflicting Pedestrians with Left-Turn Vehicles at Signalized Intersections, H. H. Joon Park, New York City DOT
Experimentation with Pedestrian Countdown Timer Synchronization, Rusty Lee, University of Delaware; Tucker Smith, McCormick Taylor; and Rudolph Bedeley, UNC Greensboro
Safety Effectiveness of Pedestrian Crossing Enhancements in Oregon, Christopher Monsere, Sirisha Kothuri, Miguel Figliozzi, and Ali Razmpa, Portland State University
Analyzing the Impact of Median Treatment Safety Countermeasures on Bicycle and Pedestrian Safety, Mark Franz, Chenfeng Xiong, and Lei Zhang, National Transportation Center, University of Maryland, College Park
Assessment of Pedestrian–Vehicle Conflicts with Different Potential Risk Factors at Midblock Crossing Based on Driving Simulator Data, Essam Radwan, Jiawei Wu, and Hatem Abou-Senna, University of Central Florida

10:30 a.m.–Noon

Infrastructure and Bicyclists

John MacArthur and Christopher Monsere, Portland State University, *moderators*

Insights into the Right-Hook Crash at Signalized Intersections: Research Results from a Driving Simulator, David S. Hurwitz, Mafruhatul Jannat, and Jennifer Warner, Oregon State University; Chris Monsere, Portland State University
Safe Overtaking of Bicyclists and the Presence of Shared-Lane Markings, Cara J. Hamann, University of Iowa College of Public Health; Omotoyosi Soniyi, University of Pennsylvania; and Chris Schwarz, University of Iowa
The Relative (In)effectiveness of Bicycle Sharrows on Ridership and Safety Outcomes, Nick Ferenchak and Wes Marshall, University of Colorado, Denver
The Effects of Innovative Pavement Markings to Facilitate Bicycle Travel, Peter B. Ohlms and Young-Jun Kweon, Virginia Transportation Research Council; Haohong Zhang, University of Virginia
Traffic Impacts of Bicycle Facilities: An Observational Study, John Hourdos, Derek Lehrke, and Melissa Duhn, Minnesota Traffic Observatory, University of Minnesota; Greg Lindsey, Humphrey School of Public Affairs, University of Minnesota
Evaluating Driver Behavior at Bicycle Infrastructure Using a Driving Simulator, Nicholas Fournier and Eleni Christofa, University of Massachusetts, Amherst
Understanding Cyclist Violations at Intersections Using Naturalistic Cycling Data, Arash Jahangiri, San Diego State University; Mohammed Elhenawy, Hesham Rakha, and Thomas Dingus, VTTI

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Efficient Signal Phasing Schemes for Serving Bicycle Movements, Zong Tian, Center for Advanced Transportation Education and Research, University of Nevada, Reno

10:30 a.m.–Noon

Data

Scott Brady, Delaware Valley Regional Planning Commission, *moderator*

Emerging Sources of Data and Methods for Safety Analysis of Pedestrian and Bicycle Facilities, Luis Miranda-Moreno and David Beitel, McGill University, Canada

Estimation of Networkwide Bicyclist Exposure Using Heterogeneous Demand Data, Frank R. Proulx, Alta Planning + Design, and Alexey Pozdnukhov, University of California, Berkeley

Collecting Meaningful Exposure Data: Nonmotorized Volume Monitoring Fundamentals, Sarah O'Brien and Sarah Searcy, Institute for Transportation Research and Education, North Carolina State University

Semiautomated Video Analysis for Bike–Ped Safety Studies, Zac Merritt, University of Delaware, and Paul Moser, Delaware DOT

Cycle Atlanta: Using Crowdsourced Data to Model Perceived Cyclist Safety, Kari Watkins and Aditi Misra, University of Michigan Transportation Research Institute; Pat Mokhtarian and Christopher LeDantec, Georgia Tech

Motorist–Cyclist Crash Data Needs in U.S. Communities, Krista Nordback, UNC Highway Safety Research Center; Geoff Gibson and Sirisha Kothuri, Portland State University; Nick Ferenchak and Wesley E. Marshall, University of Colorado, Denver

Pedestrian and Bicyclist Influence at Stop-Controlled Intersections, Karen Dixon and Raul Avelar, TTI; John Raker, Ohio Northern University; Madeleine Hirsch, Texas A&M University

10:30 a.m.–Noon

Pedestrian Safety Analysis

Gabe Rousseau, FHWA, *moderator*

Changing the Future? Systemic Pedestrian Safety Analyses in Seattle, Washington, Libby Thomas and Bo Lan, UNC Highway Safety Research Center; Rebecca L. Sanders, Alexandra Frackelton, Spencer Gardener, and Michael Hintze, Toole Design Group

Statistical Approach for Pedestrian Safety Context Identification Through Network Topology, Peak Hour Exposure, and Intersection Geometry, Venky Shankar and Narayan Venkataraman, Penn State University; Jungyeol Hong, University of Seoul; John Milton and Ida Van Schalkwyk, Washington State DOT

Spatial Analysis of Pedestrian Crashes in Low-Income Areas, Pei-Sung Lin, Rui Guo, Achilleas Kourtellis, and Elzbieta Bialkowska-Jelinska, Center for Urban Transportation Research, University of South Florida

On Identifying Engineering and Behavioral Countermeasures to Reduce the Occurrence and Severity of Pedestrian Injuries in Vehicle–Pedestrian Crashes, Chandra Bhat, Patricia Lavieri, and Sebastian Astroza, University of Texas, Austin

Development of Statewide Pedestrian Safety Performance Functions, Jun-Seok Oh, Valerian Kwigizile, and Keneth Morgan Kwayu, Western Michigan University

Using Structural Equation Modeling to Model Pedestrian's Injury Severity Level, Zhi Chen, Xiao Qin, and Robert Schneider, University of Wisconsin, Milwaukee

Decomposition Approach to Comparing Pedestrian Fatality Risks Across Geographies, Steve Polzin, Xuehao Chu, and Jodi Godfrey, Center for Urban Transportation Research, University of South Florida

10:30 a.m.–Noon

Bicycle Safety Analysis

Jeff LaMondia, Auburn University, *moderator*

Exposure to Risk and the Built Environment: An Empirical Study of Bicycle Crashes in Minneapolis, Jueyu Wang and Greg Lindsey, University of Minnesota; Steve Hankey, Virginia Tech

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Impact of Roadway Characteristics on Bicycle Safety, Md Asif Raihan, Priyanka Alluri, and Dibakar Saha, Florida International University

Virginia Bicycle Crash Safety Analysis, Erin Robartes and T. Donna Chen, University of Virginia
Comprehensive Study to Improve Bicycle Safety, Armana Sabiha Huq and Priyanka Alluri, Florida International University

Bayesian Network-Based Pedestrian–Bicyclist Behavioral Analysis Impacted by Age, Gender, Sobriety Heterogeneity in Non-Motorist-Involved Intersection-Related Crashes, Cong Chen, Qiong Wu, Guohui Zhang, and Panos D. Prevedouros, University of Hawaii at Manoa; Rafiqul A. Tarefder, University of New Mexico; Zong Tian, University of Nevada, Reno

Building an Accessible, Low-Stress, and Sustainable Bicycle Infrastructure Network for the City of Pittsburgh, Allan Khariton, Sean Qian, and Jacobo Bielak, Carnegie Mellon University

Noon–1:15 p.m.

Lunch

1:15 p.m.–2:15 p.m.

Breakout Sessions (*continued*)

2:15 p.m.–2:30 p.m.

Afternoon Break

2:30 p.m.–4:00 p.m.

Final Session: Breakout Reports and Closing Comments

Jennifer Dill, Portland State University, *moderator*

4:00 p.m.

Adjourn

December 1–2, 2016



Save the Date

96th TRB Annual Meeting

January 8–12, 2017
Washington, D.C.

5th International Conference on Roundabouts

May 8–10, 2017
Green Bay, Wisconsin

11th University Transportation Center Spotlight Conference: Rebuilding and Retrofitting the Transportation Infrastructure

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