

A blurred, high-speed photograph of a multi-lane highway with traffic, overlaid with a semi-transparent red color. The motion blur is horizontal, suggesting fast movement. The text is positioned in the upper right quadrant of the image.

# ***Fifth International Symposium on Naturalistic Driving Research***

August 30 - September 1, 2016

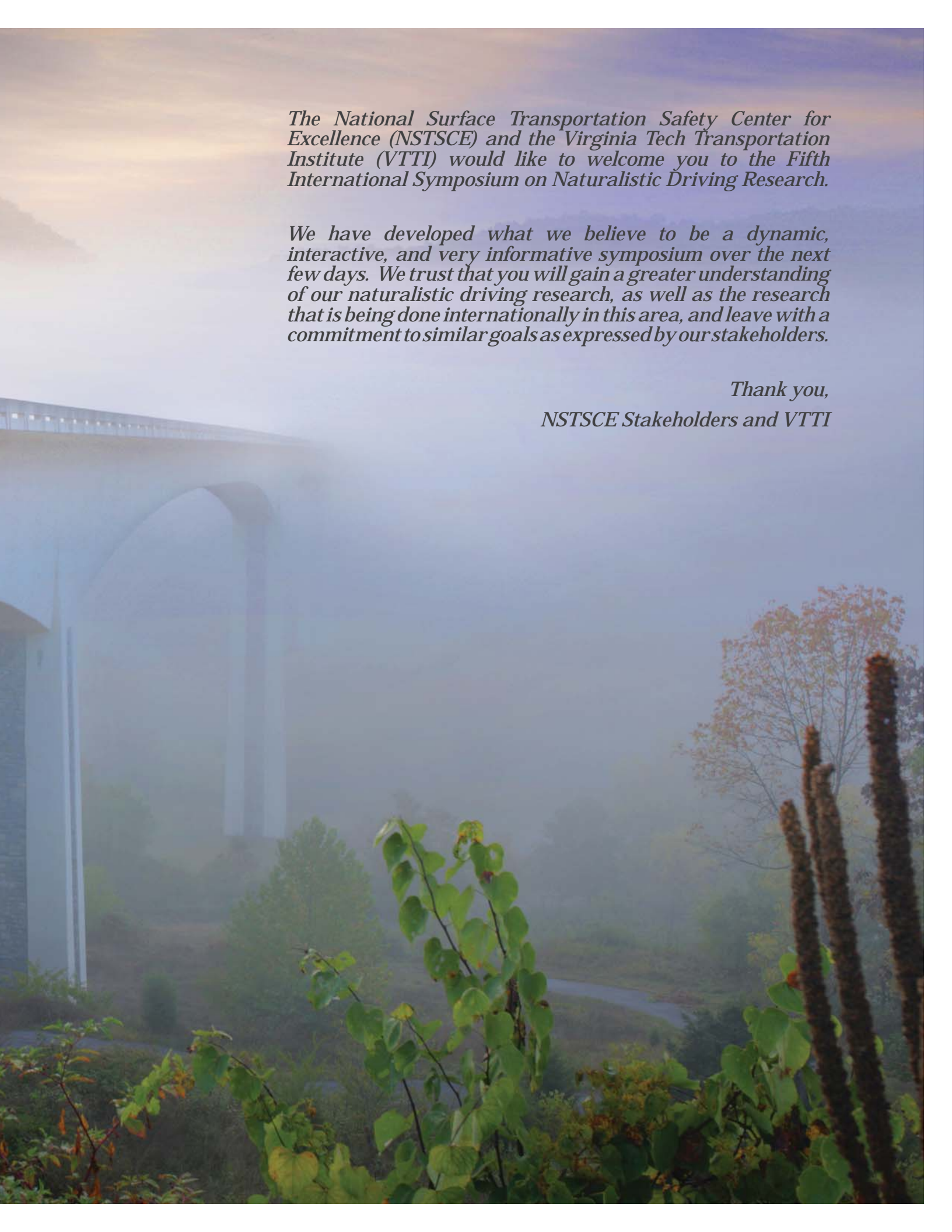
**NSTSCE**

National Surface Transportation  
Safety Center for Excellence

 **VirginiaTech**<sup>®</sup>  
Transportation Institute

welcome





*The National Surface Transportation Safety Center for Excellence (NSTSCE) and the Virginia Tech Transportation Institute (VTTI) would like to welcome you to the Fifth International Symposium on Naturalistic Driving Research.*

*We have developed what we believe to be a dynamic, interactive, and very informative symposium over the next few days. We trust that you will gain a greater understanding of our naturalistic driving research, as well as the research that is being done internationally in this area, and leave with a commitment to similar goals as expressed by our stakeholders.*

*Thank you,  
NSTSCE Stakeholders and VTTI*

## *Symposium Host*

The National Surface Transportation Safety Center for Excellence (NSTSCE) at the Virginia Tech Transportation Institute (VTTI).

## *Mission*

NSTSCE at VTTI was established by the Federal Public Transportation Act of 2005 to develop and disseminate advanced transportation safety techniques and innovations in both rural and urban communities.

NSTSCE research focuses on four major objectives:

- To develop and test transportation devices and techniques that enhance driver performance
- To evaluate the roadway environment and infrastructure-based safety systems
- To address mobility for vulnerable road users
- To examine driver impairment issues

NSTSCE is supported financially and is guided by a group of stakeholders that includes General Motors, the Federal Motor Carrier Safety Administration (FMCSA), Travelers Insurance Company, the Virginia Department of Transportation (VDOT) and Virginia Transportation Research Council (VTRC), and VTTI. Each stakeholder contributes financially to the center and guides the research portfolio to address key surface transportation issues. This group shares a vision of improving safety for all road users locally and nationally.

## *NSTSCE Stakeholders*



U.S. Department of Transportation  
Federal Motor Carrier Safety Administration



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# *Naturalistic Driving Research Symposium Keynote Speakers*

Tuesday, August 30, 12:15 pm - 1:15 pm

## **Ron Medford**

Ron Medford joined X (formerly Google [x]) in January 2013 as the Safety Director for the Self-Driving Car team. He leads the program's safety team and works with other program development teams to ensure the safety of the self-driving car.



Prior to joining Google, Mr. Medford served as the Senior Associate Administrator for Vehicle Safety at the National Highway Traffic Safety Administration (NHTSA), U.S.

Department of Transportation in 2003. He was later promoted to the Deputy Administrator position in 2010 where he was responsible for overseeing all aspects of the U.S. auto safety programs. Ron holds a B.S. and an M.S. from the University of Maryland. Mr. Medford currently lives in Santa Clara, California.

Wednesday, August 31, 11:45 am - 12:45 pm

## **Bruce Simons-Morton**

Dr. Bruce Simons-Morton is Associate Director for Prevention and senior investigator in the Division of Intramural Population Health Research, National Institute of Child Health and Human Development (NICHD). He joined the NICHD in 1992 and served as the Chief of the Prevention Research Branch from 1997–2015. In 2014, he served as a member of the Second Strategic Highway Research Program (SHRP 2) Safety Data Oversight Committee, the Transportation Research Board, and the National Academy of Sciences.



His primary research interests are the etiology and prevention of adolescent substance use and motor vehicle crashes among novice young drivers. He and his team have conducted several of the first naturalistic driving studies with teenage drivers using highly sophisticated data acquisition systems installed in teenagers' vehicles. Recently, his team conducted a unique series of experimental studies using driving simulation to evaluate the effects of teenage passengers on teenage driving performance, with assessments of functional magnetic resonance imaging and executive functioning integrated into this research.

Dr. Simons-Morton is the author of more than 200 peer-reviewed publications, and his books include Behavior Theory in Health Promotion Practice and Research (2012) and Conscientious Personality and Young Drivers Crash Risk (2015).

# *Women in Transportation Seminar*

## *Keynote Speakers*

Deborah Hersman is president and chief executive officer of the National Safety Council (NSC), a nonprofit organization dedicated to saving lives and preventing injuries. Ms. Hersman is a recognized leader in safety, with a frontline understanding of the value of protecting human life through thoughtful attention and management of risk.

Acknowledged as a visionary, Ms. Hersman is a passionate safety leader who advocates for safety across all industries. She helps further the Council's vision of "making our world safer" to improve every workplace, home, and community, as well as the way we travel every day.

Prior to joining NSC, Ms. Hersman served as chairman of the National Transportation Safety Board (NTSB) from 2004-2013. Among her many initiatives as chairman, Ms. Hersman focused on distracted driving, child passenger safety, and helping victims and their families. Ms. Hersman was an NTSB board member on-scene for more than 20 major transportation incidents, chaired scores of NTSB hearings, forums, and events, and regularly testified before Congress.

Ms. Hersman was a senior advisor to the U.S. Senate Committee on Commerce, Science and Transportation from 1999-2004. She holds B.A. degrees in political science and international studies from Virginia Tech and an M.S. in conflict analysis and resolution from George Mason University.



**Deborah A.P. Hersman**  
Thursday, September 1, 8:30 am - 9:30 am

Dr. Ann M. Brach is the Director of the Technical Activities Division at the Transportation Research Board (TRB). In this role, she has overall responsibility for the division's activities in support of an array of federal, state, local, and private sector sponsors. Before taking this position, Dr. Brach served as the Director of the Second Strategic Highway Research Program (SHRP 2) at TRB, where she was responsible for overall direction of interdisciplinary research in the following areas: the role of driver behavior in highway safety, renewal of aging infrastructure, congestion mitigation, and collaborative decision-making in highway planning. Prior to becoming the director, Dr. Brach was Deputy Director of SHRP 2 and was responsible for overseeing the development of the largest-ever naturalistic driving study.

Before coming to TRB, Dr. Brach was Research and Technology Program Manager at the Federal Highway Administration and Chief of the Research and Technology Division of the Maryland State Highway Administration. She received a B.S. in civil engineering from Northeastern University and an M.S. and Ph.D. from the Massachusetts Institute of Technology, where she focused on management of research and innovation in the construction industry. She also has a master's degree in philosophy from The Catholic University of America. She is a registered Professional Engineer in the Commonwealth of Virginia.



**Ann Brach**  
Thursday, September 1, 12:00 pm - 1:15 pm

# Agenda

**NOTE: All sessions will be held in the Alumni Assembly Hall, Holtzman Alumni Center, lower level, The Inn at Virginia Tech and Skelton Conference Center, unless otherwise noted on the agenda.**

## Monday, August 29, 2016

Location: The Inn at Virginia Tech and Skelton Conference Center

4:00 pm - 5:30 pm **Registration for Naturalistic Driving Research Symposium, Women in Transportation Seminar, and Motorcycle Research and Technology Workshop**  
*Location: Latham Foyer (Under the Grand Staircase)*

## Tuesday, August 30, 2016 - Symposium Day 1

Location: The Inn at Virginia Tech and Skelton Conference Center

- |                     |   |
|---------------------|---|
| 7:30 am - 9:30 am   | <b>Registration</b><br><i>Location: Latham Foyer (Under the Grand Staircase)</i>  |
| 7:30 am             | <b>Continental Breakfast</b>  |
| 8:00 am - 8:30 am   | <b>Welcoming Remarks: Jon Hankey (VTTI)</b>   |
| 8:30 am - 10:15 am  | <b>International Naturalistic Driving Research – Challenges and Solutions: A Panel</b><br><b>Moderator: Tom Dingus (VTTI)</b> <ul style="list-style-type: none"> <li>• <b>Canada Naturalistic Driving Study (CNDS): Description of Method and Database</b><br/>Charlie Klauer, Lorin Elias, Gayatri Ankem, John Pearson, Jon Hankey<br/><i>VTTI, University of Saskatchewan, Council of Deputy Ministers</i></li> <li>• <b>Issues and Barriers Faced when Designing and Running the European Naturalistic Driving Study UDRIVE</b><br/>Nicole van Nes, Jonas Bargman, Julie Castermans, Michiel Christoph, Helena Gellerman<br/><i>SWOV, Chalmers University, Ertico, SAFER</i></li> <li>• <b>Saudi Arabian Naturalistic Driving Study: Issues and Barriers</b><br/>Muhammad Farhan, Ahmad Aftab, Abdul H. AIMojil<br/><i>University of Dammam</i></li> <li>• <b>Feedback from SCOOP@F FOT on Driver Behavior</b><br/>Laurette Guyonvarch, Cyril Chauvel, Anne Guillaume<br/><i>LAB Renault – PSA</i></li> <li>• <b>The Australian Naturalistic Driving Study (ANSD)</b><br/>Raphael Grzebieta, Ann Williamson, Judith Charlton, Jan Eusebio, Kristie Young, Garrett Mattos, Sjaan Koppel, Mike Lenne, John Wall, Jon Antin<br/><i>TARS Research Centre, Monash University Accident Research Centre, Seeing Machines, VTTI</i></li> </ul> |
| 10: 15 am - 10:30am | <b>Continuous Break</b>   |



10:30 am - 12:00 pm

## **Innovative Naturalistic Data Collection and Coding Techniques**

**Moderator: David Plazak (TRB)**

- **Automated Recognition of Rear Seat Occupants' Head Position Using Kinect™ System**  
Helen Loeb, JinYong Kim, Kristy Arbogast, Jonny Kuo, Sjaan Koppel, Suzanne Cross, Judith Charlton  
*Children's Hospital of Philadelphia, Monash University Accident Research Centre*
- **Quality Control Considerations in Naturalistic Driving Data Reduction Efforts**  
Julie McClafferty, Jon Hankey, Miguel Perez  
*VTTI*
- **Teen Drivers' Awareness of the Vehicle Instrumentation: A Qualitative Study**  
Johnathon Ehsani, Denise Haynie, Jessamyn Perlus, Chantelle Guillaume, Charlie Klauer, Bruce Simons-Morton  
*NICHD, VTTI*
- **Developing a Portable and Reliable Data Collection System for Evaluating Driver Behavior around Law Enforcement**  
Travis Terry, Ron Gibbons  
*VTTI*

12:00 pm - 12:15 pm

**Continuous Break**

12:15 pm - 1:15 pm

**Lunch**

**Location: Latham AB**

**Keynote Address: Ron Medford (X)**

1:15 pm - 1:45 pm

**Networking Session**

1:45 pm - 3:15 pm

## **Looking into the Near Future: Crash Avoidance Technologies, Automated Vehicles, and Connected Vehicles**

**Moderator: Steven Smith (FMCSA)**

- **Long-Term Driver Adaptation to a Forward Collision Warning System with Automatic Braking**  
Emily Nodine, Donald Fisher, Wassim Najm, Christian Jerome, Chris Monk, Gary Golembiewski  
*Volpe, NHTSA, Leidos*
- **Automated Vehicle Crash Rate Comparison Using Naturalistic Data**  
Jon Atwood, Myra Blanco, Sheldon Russell, Tammy Trimble  
*VTTI*
- **Mixed-Function Automation in Naturalistic Settings**  
Sheldon Russell, Jon Atwood, Vikki Fitchett, Tammy Trimble, Myra Blanco, Paul Rau  
*VTTI, NHTSA*
- **Driving Aggressiveness Classification when Interacting with Advanced In-Vehicle Safety Systems**  
Xianan Huang, Shan Bao, Huei Peng, James Sayer  
*University of Michigan, UMTRI*

3:15 pm - 3:45 pm

**Continuous Break**

3:45 pm - 5:15 pm

## **New Ways of Looking at Things: Computer Vision and Data Modeling**

**Moderator: John Capp (GM)**

- **Skin Detection for SHRP2 Face Video**  
Abhijit Sarkar, A. Lynn Abbott, Zachary Doerzaph  
*VTTI, Virginia Tech*
- **DCode: A Comprehensive Automatic Coding System for Driver Behavior Analysis**  
Amir Tamrakar, Gregory Ho, Jihua Huang, David Salter  
*SRI International*
- **ANN-Based Secondary Task Identification Model of Distracted Driving**  
Osama Osman, Sherif Ishak, Mengqiu Ye  
*LSU*
- **Using Naturalistic Driving Data to Analyze Effects of Drivers' Age on Deceleration, Safety, and Travel Time**  
Angela Kitali, Kelvin Machumu, Thobias Sando  
*University of North Florida*

5:15 pm - 5:45 pm

**Break**

5:45 pm - 7:45 pm

**Reception, Poster Presentations, and Valeo demonstrations**

**Location: Latham CDEF**



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### **Poster Potpourri**

- **The Influence of Daily Sleep Patterns of Commercial Truck Drivers on Driving Performance**  
Guang Chen, Youjia Fang, Feng Guo, Rich Hanowski  
*CDC/NIOSH, VTTI*
- **The Alabama VIP Driver Study: Studying the Role of Vision Impairment in Older Driver Performance Using Naturalistic Driving Techniques**  
Cynthia Owsley, Gerald McGwin, Jr., Jon Antin, Jennifer Elgin, Joanne Wood  
*University of Alabama Birmingham, VTTI, Queensland University of Technology*
- **Field Study of Tractor Trailer Collision Avoidance Technology**  
Kevin Grove, Jon Atwood, Myra Blanco  
*VTTI*
- **Examining Drivers' Eye Glance Patterns During Distracted Driving: Insights from a Probability Vector and Transition Matrix Analysis**  
Yuan Wang, Shan Bao, Wenjun Du, Mary Lynn Buonarosa, James Sayer  
*UMTRI*
- **The Interrelationship between Speed Limits, Geometry, and Driver Behavior**  
Peter Savolainen, Raha Hamzeie, Timothy Gates  
*Iowa State University, Michigan State University*

5:45 pm - 7:45 pm

**Special Poster Topic: If You Can Read This... Car Following and Rear-end Crashes**

- **Car-following Headways in Different Driving Situations: A Naturalistic Driving Study in China**  
Xuesong Wang, Meixin Zhu  
*The Key Laboratory of Road and Traffic Engineering (Tongji University)*
- **Exploratory Analysis of the Headway Distance from a Subset of SHRP2 Radar Data**  
Andrej Ivanco  
*Clemson*
- **Rear-end Crash Analysis using SHRP2 Naturalistic Driving Database: Comparing Teen and Adult Crash Frequency and TTC**  
James Megariotis, Thomas Seacrist, Aditya Belwadi, Abhiti Prabakar, David McDonnell, Helen Loeb  
*Children's Hospital of Philadelphia, University of Pennsylvania, Drexel University*

**Special Poster Topic: Where Did It Happen? Geospatial Analyses of Naturalistic Data**

- **Driving Diversity: Mediation by Practice Timing and Location of Residence, Findings from the Supervised Practice Driving Study**  
Johnathon Ehsani, Chunming Zhu, Charlie Klauer, Bruce Simons-Morton  
*NICHD, VTTI*
- **The Development of New Insights into Driver Behavior to Improve High Visibility Enforcement Programs**  
Alan Blatt, John Pierowicz, Kevin Majka, Sarvani Sonduru Pantangi, Md Tawfiq Sarwar, Panagiotis Anastasopoulos, Craig Thor  
*CUBRC, SUNY Buffalo, FHWA*
- **Identification of Work-Zones from SHRP2 Naturalistic Driving Study (NDS) Database and the Roadway Information (RID) Database for Future Analysis of Work-Zone Safety**  
Amrita Goswamy, Shauna Hallmark, Omar Smadi  
*Iowa State University Institute for Transportation*

**Wednesday, August 31, 2016 - Symposium Day 2**

Location: The Inn at Virginia Tech and Skelton Conference Center

7:30 am

**Continental Breakfast**

8:00 am - 8:15 am

**Welcoming Remarks: Tom Dingus (VTTI)**

8:15 am - 9:45 am

**Beyond Police Reports: Crash Analyses Using Naturalistic Data**

**Moderator: Chris Hayes (Travelers Insurance)**

- **Using Naturalistic Driving Study Data to Investigate the Impact of Driver Distraction on Driver's Reaction Time in Freeway Rear-ending Events**  
Jingru Gao (TRB Student Paper Contest Winner)  
*University of Minnesota*
- **Effect and Influence of Different Factors on Driver Behavior when Vehicles Make Right Turn at Signalized Intersections**  
Jianqing Wu (TRB Student Paper Contest Winner)  
*University of Nevada, Reno*

8:15 am - 9:45 am

- **Examination of the Factors Determining Fault in Multi-Vehicle Conflicts**  
Raha Hamzeie, Peter Savolainen  
*Iowa State University*
- **Analysis of Run-Off-Road Crashes/Near-Crashes in a Designated Run-Off-Road Crash Hotspot: Southwest Virginia**  
Charlie Klauer, Gayatri Ankem  
*VTTI*

9:45 am - 10:00 am

**Continuous Break**

10:00 am - 11:30 am

**Using Naturalistic Driving Data to Unravel the Mystery that is the Teen Driver**

**Moderator: Cathy McGhee (VDOT)**

- **Understanding the Role of Secondary Tasks in Increasing Teens' Risk for Crash**  
Pnina Gershon, Charlie Klauer, Bruce Simons-Morton  
*NICHHD, VTTI*
- **Examining the Potential of Elevated G-Force Events as "Teachable Moments": The Supervised Practice Driving Study**  
Johnathon Ehsani, Chunming Zhu, Charlie Klauer, Bruce Simons-Morton  
*NICHHD, VTTI*
- **From Naturalistic Driving Data to a Conceptual Framework of Teens' Risky Driving Behavior**  
Pnina Gershon, Fearghal O'Brien, Chunming Zhu, Bruce Simons-Morton  
*NICHHD*
- **What are the Psychosocial and Personality Characteristics of Teen Drivers Whose Parents Used Post Hoc Feedback vs Those Who Did Not?**  
Gayatri Ankem, Tina Sayer, Charlie Klauer  
*VTTI, Toyota*

11:30 am - 11:45 am

**Continuous Break**

11:45 am - 12:45 pm

**Lunch**

**Location: Latham AB**

**Keynote Address: Bruce Simons-Morton (NICHHD)**

12:45 pm - 1:15 pm

**Networking Session**

1:15 pm - 2:45 pm

**Out in the Boondocks: Rural Safety Issues Addressed by Naturalistic Driving Data**

**Moderator: Monique Evans (FHWA)**

- **Leveraging the SHRP2 NDS: Examining Driver Behavior Entering Rural High Speed Intersections**  
Steve Jackson, Michelle Arnold  
*Leidos, FHWA*
- **Linear Mixed Effects Model of Rural Two Lane Curve Driving Using SHRP2 Naturalistic Driving Data**  
Nicole Oneyear, Shauna Hallmark  
*Institute for Transportation (Iowa State)*
- **Impact of Roadway Lighting on Nighttime Crashes and Driver Performance**  
Alejandra Medina, Ron Gibbons, Eric Li  
*VTTI*
- **Evaluating Rural Intersection Stopping Behavior using SHRP2 Data**  
Nicole Oneyear, Raju Thapa, Shauna Hallmark, Omar Smadi  
*Institute for Transportation (Iowa State)*

2:45 pm - 3:00 pm

**Continuous Break**

3:00 pm - 4:45 pm

### **Zooming Forward: Motorcycles and Mopeds**

**Moderator: Ray Ochs (Motorcycle Safety Foundation)**

- **Investigate Moped-Vehicle Conflicts in China using a Naturalistic Driving Study Approach**  
Yi Glaser, Feng Guo, Youjia Fang, Bing Deng, Jon Hankey  
*General Motors Company, VTTI*
- **Motorcyclists' Self-Reported Riding Mileage Versus Actual Riding Mileage in the Following Year**  
Vicki Williams, Shane McLaughlin, Robert McCall, Tim Buche  
*VTTI, Motorcycle Safety Foundation*
- **Curves as a Risk Factor for Motorcyclists**  
Robert McCall, Cameron Rainey, Vicki Williams, Shane McLaughlin  
*VTTI*
- **Selected Lane Position as Motorcyclists Approach and Traverse Intersections**  
Vicki Williams, Shane McLaughlin, Tim Buche  
*VTTI, Motorcycle Safety Foundation*

4:45 pm - 5:00 pm

### **Concluding Remarks**

## Women in Transportation Seminar

4:30 pm - 6:00 pm

### **Registration for Women in Transportation Seminar**

**Location: The Inn at Virginia Tech, Latham Foyer (Under the Grand Staircase)**

5:30 pm - 6:00 pm

### **Women in Transportation Seminar "Poster Dash" Reception**

**Location: Latham C**

6:00 pm - 7:30 pm

### **Dinner for Women in Transportation Seminar**

**Location: Latham C**

## Motorcycle Research and Technology Workshop

4:30 pm - 5:30 pm

### **Registration for Motorcycle Research and Technology Workshop**

**Location: The Inn at Virginia Tech, Latham Foyer (Under the Grand Staircase)**

5:30 pm

### **Depart for dinner for Motorcycle Research and Technology Workshop**

Meet in the lobby of The Inn at Virginia Tech to leave for dinner off-site

6:00 pm - 8:00 pm

### **Dinner for Motorcycle Research and Technology Workshop**

**Location: Bowman Room of Jamerson Center**

Address:

21 Beamer Way, 361 Jamerson Athletic Center

Blacksburg, VA 24061

## Thursday, September 1, 2016

Women in Transportation Seminar – The Future of Transportation  
Location: The Inn at Virginia Tech and Skelton Conference Center

7:30 am - 8:30 am

### Registration

**Location: Latham Foyer (Under the Grand Staircase)**

8:30 am - 9:30 am

### Welcoming Remarks: Myra Blanco (VTTI), Tara Reel (WTS@VT)

**Keynote #1: Five Leadership Lessons - How You Learn From Crashes, Collapses and Chaos**

Deborah A.P. Hersman (NSC)

9:30 am - 10:40 am

### Session #1: Where We Are Now – Technology Implementation

Transportation is core to our society and culture, a reality that is expected to be the case well into the future. Since its inception, the transportation industry has been pushing the envelope of technological advancement. From Henry Ford's Model T to autonomous vehicles, transportation experts are innovators. Experts in this session are on the leading edge of tech implementation and will discuss the current state of technology in transportation, how we achieved this level of implementation, and what the next steps are.

**Moderator: Jane Lappin, Director of Public Policy and Government Affairs, Toyota Research Institute**

- Reates Curry, Technical Expert and Human Factors Specialist, Ford Motor Company
- Carol Tan, Highway Research Engineer, Federal Highway Administration
- Cathy McGhee, Associate Director for Safety, Operations, and Traffic Engineering, VDOT
- Jane Macfarlane, Head of Research, HERE

10:40 am - 10:50 am

### Break – Stretch and Greet Exercise

10:50 am - 12:00 pm

### Session #2: How to Get There – Human Factors

Human factors is the scientific discipline concerned with the understanding of interactions among humans and other elements of a system. Driver behavior is at the root of the majority of crashes, so human factors play a crucial role in designing efforts that enhance transportation safety and reduce crashes. This session will explore the human factors applications within the field of transportation; panelists are among the top experts in the domain of human factors and come from diverse educational backgrounds including psychology, engineering, biomechanics, and physiology.

**Moderator: Lisandra Garay-Vega, Accident Investigator/Project Manager, National Transportation Safety Board**

- Linda Angell, Human Factors and Safety Specialist, Touchstone Evaluations, Inc.
- Yi Glaser, Human-Machine Interface Engineer, General Motors
- Julie Kang, Research Psychologist, National Highway Traffic Safety Administration
- Joanne Harbluk, Human Factors Specialist, Transport Canada

12:00 pm - 1:15 pm

### Lunch

**Location: Latham C**

**Introduction: Charlie Klauer (VTTI)**

**Keynote #2: Doing Great Things: Myths, Partial Truths, and What it Really Takes**  
Ann M. Brach (TRB)

1:15 pm - 1:30 pm

**Break**

1:30 pm - 2:20 pm

**Speed Mentoring Exercise and Professional Poster Session**

***Location: Drillfield Conference Room***

The Speed Mentoring Session will be a fun, fast-paced event, where attendees have the opportunity to participate in brief, directed, mentoring sessions with our keynote speakers, panelists, and industry professionals. Posters from VTTI researchers will be on display outside of the Drillfield Conference Room at this time.

2:20 pm - 2:30 pm

**Break**

2:30 pm - 3:40 pm

**Session #3: Where We Are Heading – Technology & Policy Implications**

This session will explore the research of future technologies and the implications to current policies. It addresses how industry leaders are making a strong impact in shaping transportation policy and influencing the future of the field. Discussions will include, but will not be limited to, human-digital interface design in automated and connected vehicles. Subject matter experts will discuss the nuances of governmental affairs for advanced technological systems and the pivotal roles effective policies and legislation play in making cutting-edge technology safe and accessible.

**Moderator: Nicole Barranco, Director of State Government Relations, Volkswagen Group of America**

- Ana Meuwissen, Director of Federal Government Affairs, Bosch
- Deborah Thompson, Technology Lead – Human Factors, Volvo Group North America
- Janet Brooking, Executive Director, Drive Smart Virginia
- Amy Klinkenberger, Testing & Regulatory Affairs, Mercedes-Benz Research & Development North America

3:40 pm - 4:00 pm

**Closing Remarks: Charlie Klauer (VTTI)**

# Thursday, September 1, 2016

Motorcycle Research and Technology Workshop  
Location: Virginia Tech Transportation Institute (VTTI)  
Interchange A & B

8:00 am	Workshop participants needing transportation to VTTI meet in the lobby of The Inn at Virginia Tech for shuttle
8:15 am - 8:40 am	<b>Registration for Workshop and Continental Breakfast</b>
8:40 am - 9:00 am	<b>Welcoming Remarks: Tom Dingus (VTTI)</b>
9:00 am - 10:30 am	<b>Session #1: Rider Performance and Capabilities</b> This session will focus on rider performance, and performance enhancing technologies. Researchers will present on differences in performance across riders, as well as new technologies designed to give riders an edge when it comes to safety on the road.
10:30 am - 12:00 pm	<b>Session #2: Rider Maneuvers and Technology On-Road Demonstrations (on the Smart Road)</b> This session will focus on three objectives: <ol style="list-style-type: none"><li>1) Demonstrating the levels of performance and rider capabilities found in naturalistic data.</li><li>2) Demonstrating technologies expected to be implemented on motorcycles and vehicles in the future.</li><li>3) Collecting video and data of riding that will then be examined in a later session (see Session 4).</li></ol>
12:00 pm - 1:00 pm	<b>Lunch, Instrumentation, and Technology Walk Around</b>
1:00 pm - 2:30 pm	<b>Session #3: Behaviors and Rider Categories</b> In this session researchers will discuss behavioral differences between motorcyclists, and show how data can be used to effectively categorize riders. Understanding how and when riders ride is key to understanding motorcyclists, and their relationship with riding.
2:30 pm - 4:00 pm	<b>Session #4: Exploring Riding Data</b> This session will focus on exploring data collected during Session 2. Participants will use provided computers to locate different measures of interest within the collected data. Researchers will facilitate and field questions, and the group will discuss questions that may be addressed with these types of data.
4:00 pm - 4:15 pm	<b>Closing Remarks</b>



## Connecting to the wireless network at the Inn at Virginia Tech

1. Open the settings menu
2. Click on “Hotel-Guest”
3. Open your web browser
4. Open “Wireless Network Connection”
5. Click “Verify Now”



All Virginia Tech faculty, staff, students, and visitors from participating institutions can connect to the eduroam (education roaming) wireless network at Virginia Tech. Additional information about and support for eduroam may be found at: [www.computing.vt.edu/content/eduroam](http://www.computing.vt.edu/content/eduroam)

### Visitors to Virginia Tech

The eduroam wireless network is provided to visitors from other participating institutions at your own risk and with no guarantee that the service will be available at any time or that it will suit any purpose. You are bound to your home institution's acceptable use policy. If your home institution participates with eduroam ([www.eduroam.us/institutions\\_list](http://www.eduroam.us/institutions_list)), contact your home institution for instructions, configuration settings, and support.

**The Inn at Virginia Tech and Skelton  
Conference Center  
901 Prices Fork Road  
Blacksburg, VA 24061**

## Directions to the Inn:

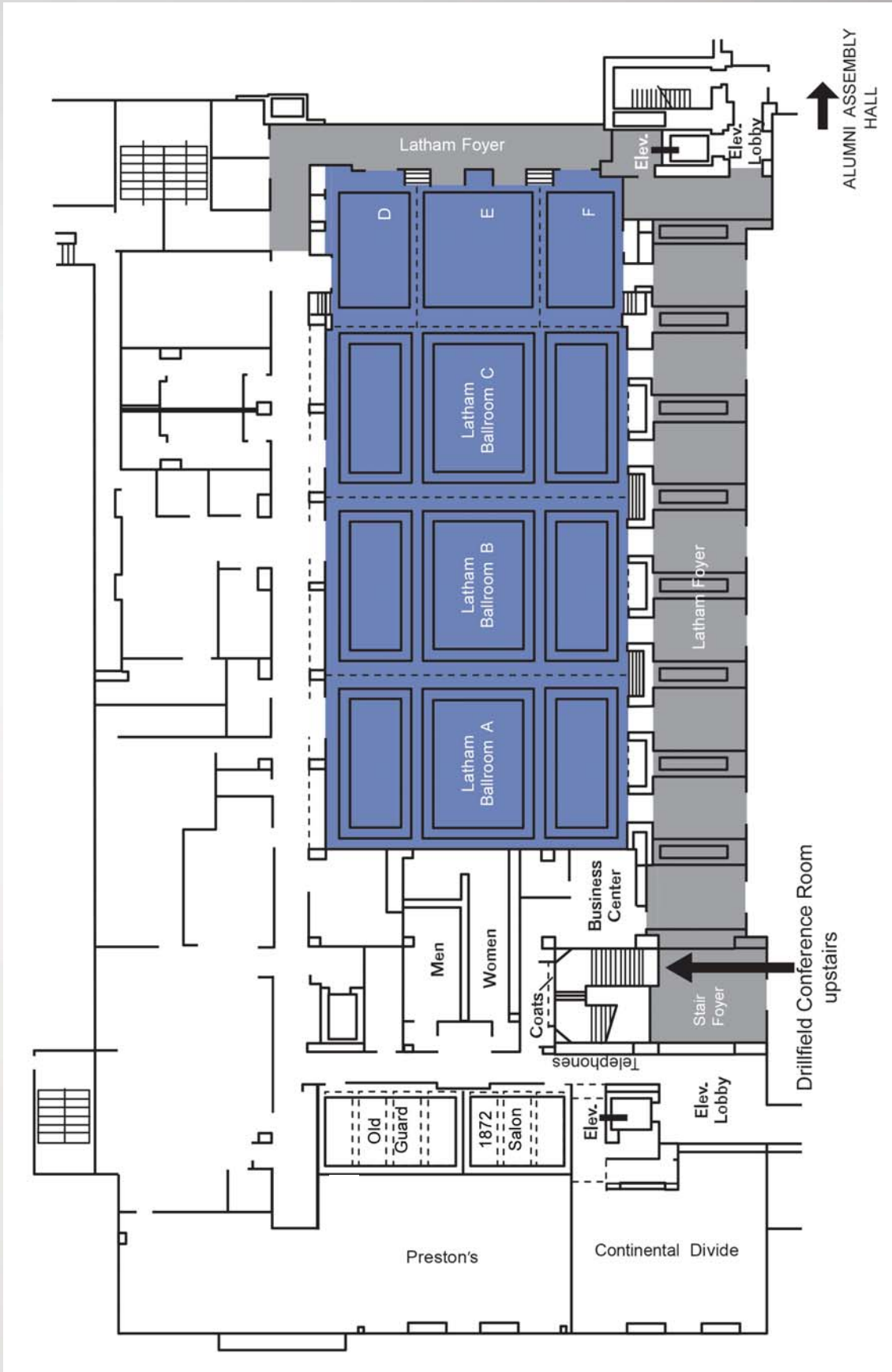
### **From I-81 North or South**

- Take exit 118B to Route 460 West
- Follow US-460 West for 9 miles to the first Prices Fork Road (Downtown) exit
- Merge onto Prices Fork Road and follow for 0.7 miles to the first stop light
- Turn right into hotel entrance
- Hotel will be straight ahead approximately 300 yards (past entrance to Visitor's Center)

### **From 460 East**

- Follow US-460 East to Prices Fork Road exit
- Turn left on to Prices Fork Road and follow for 0.7 miles to the first stop light
- Turn right into hotel entrance
- Hotel will be straight ahead approximately 300 yards (past entrance to Visitor's Center)

# The Inn at Virginia Tech and Skelton Conference Center



**Virginia Tech Transportation Institute  
3500 Transportation Research Plaza  
Blacksburg, VA 24061**

## Directions to VTTI:

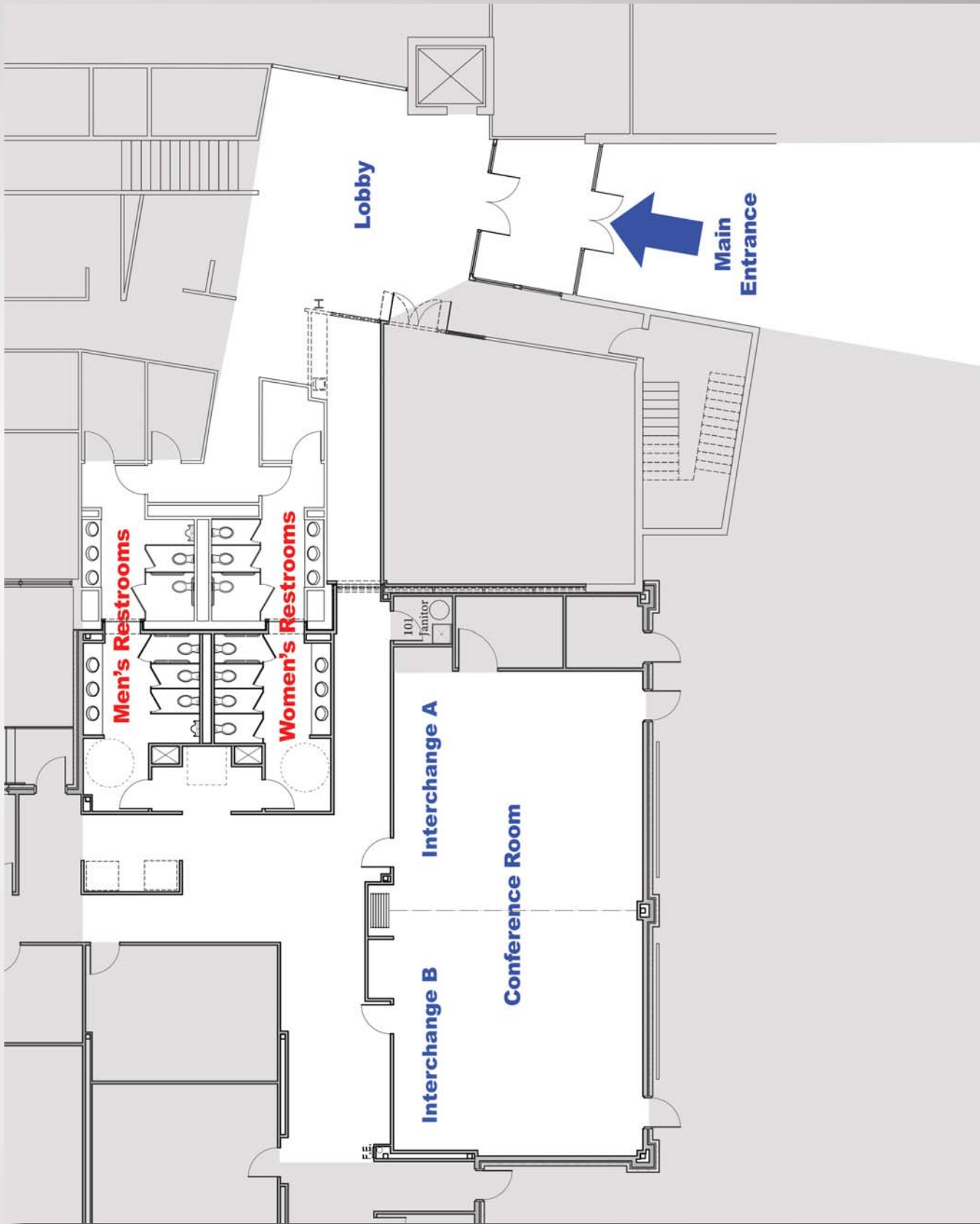
### **From I-81 North or South**

- Take Exit 118B to Route 460 West
- Follow signs to Virginia Tech/Blacksburg
- Take Exit 5AB (Smart Road/Industrial Park Drive)
- Follow Exit 5A to the right on exit ramp to Industrial Park Drive
- Turn right at end of ramp onto Industrial Park Drive
- Make an immediate right onto Transportation Research Drive
- Make first left onto Transportation Research Plaza, come up hill
- Go right through roundabout at top of hill; follow road straight
- Make a left into parking lots
- Check in at the main, multi-story building

### **From 460 East**


- Take Exit 5AB
- On ramp, bear left onto 5B towards Blacksburg
- Turn left at light at end of ramp onto Main Street
- Turn right at first light onto Industrial Park Drive
- Turn right onto Transportation Research Drive
- Make first left onto Transportation Research Plaza, come up hill
- Go right through roundabout at top of hill; follow road straight
- Make a left into parking lots
- Check in at the main, multi-story building

# Conference Facilities at VTTI







A close-up, low-angle shot of a person's hands on a steering wheel. The person is wearing a dark blue jacket with a red collar and a silver metal watch on their left wrist. The background is a blurred sunset or sunrise with warm orange and yellow light. The overall mood is focused and serene.

*Please look for information as it becomes available  
and plan to join us for the Sixth International  
Symposium on Naturalistic Driving Research!*

**NSTSCE**

National Surface Transportation  
Safety Center for Excellence

 **VirginiaTech**<sup>®</sup>  
Transportation Institute