AGENDA AT-A-GLANCE

Thursday, September 13

7:00 – 8:45 a.m.
Registration and breakfast
Main Hall

8:45 – 9:00 a.m.
Welcome address
Junior Ballroom B/C

9:00 – 10:00 a.m.
Opening session and panel discussion
Junior Ballroom B/C

10:15 – 11:15 a.m.
Systems 101: Essentials of Safe Systems and systems thinking
Junior Ballroom B/C

11:30 a.m. – 1:15 p.m.
Keynote address and lunch
Junior Ballroom B/C

1:30 – 2:30 p.m.
Moving principles into practice
Junior Ballroom B/C

3:00 – 4:00 p.m.
Data integration to support safer systems
Junior Ballroom A
Navigating complex transportation systems
Junior Ballroom D

5:00 – 7:00 p.m.
Research Poster Showcase and Networking Reception
Main Hall

Friday, September 14

7:00 – 8:30 a.m.
Registration and breakfast
Main Hall

8:30 – 8:45 a.m.
Welcome address, recap of day one
Junior Ballroom B/C

8:45 – 9:45 a.m.
Interactive session: Roundtable discussions about the future of transportation
Junior Ballroom B/C

10:00 – 11:15 a.m.
Setting the scene for promoting shared safety goals
Junior Ballroom A
Inspiring and enabling authentic collaboration and engagement
Junior Ballroom D

11:30 a.m. – 1:15 p.m.
Keynote address, lunch and awards presentation
Junior Ballroom B/C

1:00 – 2:00 p.m.
Regulating evolving technology
Junior Ballroom A
Measuring system success
Junior Ballroom B/C

2:30 – 3:30 p.m.
Leadership that adapts to a changing world
Junior Ballroom B/C
Tackling wicked problems using systems mapping lessons
Junior Ballroom A
Enhancing NC Vision Zero through data integration
Junior Ballroom D

3:30 – 4:00 p.m.
The road ahead, closing session
Junior Ballroom B/C

Logistics, details and general information

- Free wifi is available in the Durham Convention Center.
  Username: DCCGuest
  Password: globalhyd (Note: all lowercase)

- Please bring a sweater or light jacket to layer over clothes, as meetings rooms may be set to cooler temperatures to accommodate large groups.

- Please silence all cell phones/devices during keynote addresses, sessions and workshops.

- CSCRS, event and/or Durham Convention Center staff cannot be responsible for storage of personal items. Please keep all luggage and personal items in hotel rooms, and/or coordinate with individual hotel front desks as needed.

- A Mother’s Room for nursing mothers (including a mini fridge) is available in the Durham Convention Center. Please come to the registration desk to learn more and/or if you have any other special needs.

- In case of emergency during the Summit, please call 911 or contact a CSCRS or Durham Convention Center staff member.

- For the media: Check in at the registration desk to obtain credentials. Interviews may be set up and coordinated at the summit by Kara Lusk Dudley (919-962-7769, dudley@hsrc.unc.edu).

- If you have general questions, please visit the registration desk anytime or ask someone wearing a “staff” designated nametag.

Map of Durham Convention Center

![Map of Durham Convention Center](image-url)
Welcome to the inaugural Safe Systems Summit

The transportation system, related technologies, and the world at-large are becoming increasingly complex and interconnected. This is demanding new skill sets as well as new thinking in how we approach transportation safety problems. Our goals in bringing together this varied group of transportation, planning and public health professionals and safety champions are to:

- recognize and explore the complexity of transportation systems and the changing nature of safety challenges;
- share principles and practices from Safe Systems approaches effectively applied in different contexts;
- introduce and describe systems tools and methods that can be applied to build upon common values, develop shared goals and languages, support coordinated action, and carry lessons and knowledge forward; and
- support an inclusive and open dialogue about road safety from new and different perspectives, building trust and stronger relationships along the way.

Everyone sees a different part of the transportation system and has a different role to play in creating safer transportation systems. You may be unfamiliar with Safe Systems principles and systems tools (see glossary), or you may have extensive experience in systems thinking and applications. Wherever you are along the continuum of understanding and practice, you are an important part of this learning environment and we’re so glad you’re here!

There are many opportunities to get to know your fellow Summit participants and to find shared interests and collaboration opportunities. The program offers several breaks between sessions to network and meet new people. Find inspiration from the student and researcher posters and network at the Research Poster Showcase on Thursday night. Identify potential partners and consider the open call for CSCRS Systems at Work Collaboration Grants (page 25). Visit the Research Exploration Room (located in Meeting Rooms 1-3) during regular Summit hours to explore and discuss new approaches to transportation safety practice and research.

The Safe Systems Summit could not be a success without your experience, perspective and commitment to helping shape the path to a safer future for all road users. We hope that you enjoy your time here in beautiful Downtown Durham, and make lasting connections toward our universal goal of reducing road fatalities – together.

Thank you,

The Safe Systems Summit Planning Committee

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Summit glossary of terms

Please see related handout in the Summit folder, and help continue the conversation – including adding your own terms and perspective – throughout the Summit.

Safe Systems

1. Adapt the structure and function of the system to the complexities of human behavior.
2. Manage the kinetic energy transferred among road users.
3. Treat road user safety as the foundation of all system interventions.
4. Foster the creation of a shared vision, coordinated action, and systems perspective.

Systems tools and methods

1. Offer formal tools to recognize and manage the complexity of transportation safety challenges and solutions.
2. Foster thinking about underlying structures of the transportation system, exploring assumptions and relationships or interactions between system elements.
3. Provide a framework for considering policy perspectives, leveraging tools (like system dynamics) to maximize impact and mitigate unintended consequences.

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Engage and Interact at the Safe Systems Summit

Download the Poll Everywhere app so you can participate in polls and surveys throughout the Safe Systems Summit.

Speakers will display relevant information on-screen during sessions and workshops.

Poll Everywhere
Welcome address
8:45 – 9:00 a.m.
Junior Ballroom B/C

Opening session
9:00 – 10:00 a.m.
Junior Ballroom B/C

Past successes and future challenges in traffic safety
CSCRS Director Laura Sandt will outline the “wicked” problems we face and why some traffic safety issues are more persistent than others, underlying the need for new systems-oriented paradigms and skill sets. Then, public health experts Alan Dellapenna and Ann Dellinger will speak to specific traffic safety challenges the field has faced in the past, how injury prevention approaches have been applied and have evolved, and what is needed to ensure success in addressing future transportation issues.

An interactive polling exercise will follow; please download the Poll Everywhere app to participate!

Systems 101: Essentials of Safe Systems and systems thinking
10:15 – 11:15 a.m.
Junior Ballroom B/C

International experience with Safe Systems principles has demonstrated the potential to substantially reduce the road toll, but applying Safe Systems to the United States presents numerous hurdles. In this session, we’ll explore how various nations have applied Safe Systems principles and how Vision Zero compares with Safe Systems abroad. We’ll also examine systems science as a potential tool for improving the performance of domestic Safe Systems and Vision Zero programs.

Keynote address and lunch
11:30 a.m. – 1:15 p.m.
Junior Ballroom B/C

From Safe Systems to system safety
In this keynote address, Dr. McClure will draw upon his extensive training and experience in injury prevention research and practice, his role as director of various research institutes, and his leadership experience at the Centers for Disease Control and Prevention to address the critical need for systems thinking within a roadway safety context. With his vast wealth of knowledge on the systemic prevention of injury, Dr. McClure will challenge our assumptions regarding Safe Systems and offer insights into how we can reduce the number of deaths on roadways across the globe.

Moderators
Wes Kumfer
Engineering Research Associate, UNC Highway Safety Research Center

Speakers
Terry Bellamy
Director, Transportation Department, City of Durham
Jill Cooper
Co-Director, University of California, Berkeley Safe Transportation Research and Education Center
Kimberly Kolody Silverman
Global Technology Leader for Highway and Traffic Safety, Jacobs Engineering

Conversation Starter
Find a researcher and ask them what their favorite mental model is.

#SafeSystemsSummit idea
Follow @CSCRSinfo on Facebook and Twitter!
Data integration to support safer systems

3:00 – 4:00 p.m.
Junior Ballroom A

A comprehensive safety data system is comprised of a number of data sets, including not only crash data, but also roadway and traffic data, vehicle, driver, citation and hospital/EMS data among others. Historically these datasets have been kept in siloed data repositories across a number of agencies. While transportation agencies are increasingly seeing the benefits of merging these data for more robust data driven safety analysis, integrating these disparate systems remains a challenge. This session will explore integration across datasets and jurisdictions through both federal and state efforts, discussing the challenges, successes and lessons learned.

**Speakers**

Larry Cook  
Associate Professor, University of Utah, Department of Pediatrics, Division of Critical Care

Bob Scopatz  
Senior Transportation Analyst, VHB

Stuart Thompson  
Project Manager, Roadway Safety Data Program, U.S. DOT Federal Highway Administration

**Moderator**

Chris Cherry  
Associate Professor, Department of Civil and Environmental Engineering, University of Tennessee, Knoxville

Navigating complex transportation systems

3:00 – 4:00 p.m.
Junior Ballroom D

Systems science offers an interdisciplinary set of tools that can help examine and determine how best to intervene on complex problems. Given that transportation problems often arise and persist due to dynamic interactions among a multitude of factors, systems science approaches have much to offer the transportation field. In this session, we will explore concrete applications of systems science tools to persistent transportation problems. Applications will highlight the utility of these tools for both researchers and practitioners working to advance the science and practice of transportation safety.

**Speakers**

Naveen Eluru  
Associate Professor, Department of Civil, Environmental and Construction Engineering, University of Central Florida

Becky Naumann  
Research Assistant Professor, Department of Epidemiology, UNC Gillings School of Global Public Health

**Moderator**

Asad Khattak  
Beaman Distinguished Professor in the Department of Civil & Environmental Engineering, University of Tennessee at Knoxville

Research Poster Showcase

5:00 – 7:00 p.m.
Main Hall

Connect with colleagues while you explore the work of students and researchers presenting their transportation and public health-related research, capstone, and community projects as posters. As professionals in your respective fields, we invite you to peruse the research, ask questions, and engage in an open discourse with the presenters.

**Please note:** Student posters will be judged during the showcase. Poster winners will be announced after lunch on Friday.

**Moderator**

Chris Cherry  
Associate Professor, Department of Civil and Environmental Engineering, University of Tennessee, Knoxville

Learn more about the Research Poster Showcase, including a list of presenters, on page 22.

Optional: Extracurricular networking activity

After the Safe Systems Summit, join the Young Professionals in Transportation – Triangle Chapter for a pay-your-own-way #networking reception at Pour Taproom Durham. The Taproom is located at 202 N. Corcoran St., #200.

**Conversation Starter**

Ask a Research Poster Showcase presenter what their motivation was for initiating their research.
Interactive session: roundtable discussions on future of transportation

8:45 – 9:45 a.m.
Junior Ballroom B/C

Participate in this interactive session centered around connected and autonomous vehicles and what they mean for road safety. Dr. Peter Norton will frame the discussion by identifying history’s neglected but important lessons for automated vehicles’ future. Attendees will also engage in roundtable discussions exploring various aspects of the automated vehicle universe. Hear from other diverse voices about what the concept of driverless cars means to them, and share your own.

Speaker
Peter Norton
Associate Professor, Engineering and Society, University of Virginia

Moderator
Wes Kumfer
Engineering Research Associate, UNC Highway Safety Research Center

Setting the scene for promoting shared safety goals

10:00 – 11:15 a.m.
Junior Ballroom A

Frames structure our ideas, they shape how we reason, and impact how we perceive and act. By focusing on certain aspects of a traffic safety issue, frames convey who is responsible and often propose solutions to problems. For example, a proposal to install a “road diet” can be framed as “reducing the number of car lanes” or “increasing road user safety.” Join us for an interactive session to learn how to identify frames used in everyday crash narratives, and then “re-frame” these narratives to motivate people to act to improve the safety of all road users.

Speakers
Lucinda Austin
Assistant Professor, UNC School of Media and Journalism
Nicholas Ward
Director, Center for Health and Safety Culture, Western Transportation Institute

Moderator
Seth LaJeunesse
Research Associate, UNC Highway Safety Research Center

Inspiring and enabling authentic collaboration and engagement

10:00 – 11:15 a.m.
Junior Ballroom D

This session will focus on the role of collaboration and community engagement in building and acting on shared understandings of mobility, accessibility and safety. Participants will learn about community-based participatory research and be exposed to techniques and methods to improve identification, communication and bidirectional learning from community partners. Participants will also hear about on-going community-based participatory research projects, locally and globally. Finally, the session will include discussion on how community-based research enriches and informs the systems science approach to road safety.

Speakers
Leah Freirichs
Assistant Professor, UNC Gillings School of Global Public Health
Shakiyla Smith
Program Officer, The Fetzer Institute
Danielle Spurlock
Assistant Professor, UNC Dept of City and Regional Planning
Allie Thomas
Assistant Professor, UNC Dept of City and Regional Planning

Moderator
Kelly Evenson
Research Professor, UNC Gillings School of Global Public Health

Keynote address and lunch
11:30 a.m. – 12:45 p.m.
Junior Ballroom B/C

Self-driving car safety – it’s complicated
Consider the future of self-driving cars from an interdisciplinary perspective with one of the nation’s leading experts in robotics and systems safety.

Speaker
Phil Koopman
Associate Professor, Carnegie Mellon University Department of Electrical and Computer Engineering

Student awards presentation
Three students will be recognized for top research in the Research Poster Showcase that was held on Thursday night.

Presenter
Kevin Womack
Director, Office of Research, Development and Technology, U.S. Department of Transportation
### Measuring system success

**1:00 – 2:00 p.m.**  
Junior Ballroom D

This interactive session will address six evaluation-related questions:

- How should the impact of a Safe Systems approach be evaluated?
- What is the degree of alignment and misalignment between Safe Systems measures and traditional measures of safety?
- How might safety performance measures be better aligned with desired improvements in safety?
- How might iterative and organizational learning approaches be used to identify and implement more useful safety measures?
- How can success measures be developed that are shared by all relevant stakeholders?
- How should evaluations of safety systems be constructed that recognize the complex characteristics of safety systems?

**Speakers**  
Jonathan A. Morell  
Editor, Evaluation and Program Planning

**Moderator**  
Krista Nordback  
Senior Research Associate, UNC Highway Safety Research Center

### Regulating evolving technology

**1:00 – 2:00 p.m.**  
Junior Ballroom A

New technology is often promoted as a means to improve safety. But new technology can also introduce new risks that are hard to predict during early development, creating new challenges for policymakers concerned with public safety. In this session we'll discuss how innovation often outpaces the speed of regulation and investigate ways regulatory regimes could adapt to keep up.

**Speakers**  
Lori Snyder Benear  
Juli Plant Grainger Associate Professor of Energy Economics and Policy, Duke University Nicholas School for the Environment

Jason Gainey  
Manager, Passive Safety and Accident Research at Volkswagen Group of America

**Moderator**  
Michael Clamann  
Senior Human Factors Engineer, UNC Highway Safety Research Center

### Leadership that adapts to a changing world

**2:30 – 3:30 p.m.**  
Junior Ballroom B/C

In this session, we will learn from the experiences of leaders who are at the forefront of advancing road safety in the local, national, and international arenas. The session will include an interactive panel discussion where speakers and the audience can discuss challenges and opportunities for advancing Safe Systems in practice.

**Speakers**  
Jeff Michael  
Associate Administrator, National Highway Traffic Safety Administration

Ben Welle  
Global Health & Road Safety Manager, World Resources Institute, Ross Center for Sustainable Cities

**Moderator**  
Eric Dumbaugh  
Associate Professor, Florida Atlantic University School of Urban & Regional Planning

### The road ahead, closing session

**3:30 – 4:00 p.m.**  
Junior Ballroom B/C

This session will reflect on key insights from the Summit and discuss the implications for educators, researchers and communities. We will consider the questions generated by the Summit to identify research needs as well as opportunities for collaboration among participants.

**Speaker**  
Noreen McDonald  
Department Chair, Thomas Willis Lambeth Distinguished Professor, Director of Carolina Transportation Program, UNC Department of City and Regional Planning

### Stay Connected & Engaged with CSCRS

- Engage with us on social media @CSCRSinfo.
- Learn more about CSCRS research projects, professional development opportunities and student activities at [www.roadsafety.unc.edu](http://www.roadsafety.unc.edu).
- Stay tuned! We are producing proceedings from the Summit so you can access meeting materials after the event.
Tackling wicked problems using systems mapping lessons

2:30 – 4:00 p.m.
Junior Ballroom A

In this session, we will build skills in using systems methods to unpack “wicked” transportation problems, such as impairment, distraction, speed and technology change. We will examine how system dynamics tools can foster new collaborations, partnerships and problem-solving approaches. We will provide strategies for integrating systems approaches into current transportation safety research and practice in ways that can complement and enhance current practices.

Presenters
Jill Kuhlberg
Health Systems Evaluator, North Carolina State University

Kristen Hassmiller Lich
Associate Professor, Department of Health Policy & Management, UNC Gillings School of Global Public Health

Facilitator
Becky Naumann
Research Assistant Professor, UNC Gillings School of Global Public Health

Enhancing NC Vision Zero through data integration

2:30 – 4:00 p.m.
Junior Ballroom D

This workshop provides an opportunity to learn about the work that is being done by the City of Durham, the Durham-Chapel Hill-Carrboro Metropolitan Planning Organization, Duke University Hospital and UNC Health Care to address data integration needs in North Carolina. The small group will discuss how to support high injury network mapping, injury validation, systemic analysis, and Vision Zero. We will also explore options for the most useful data linkages and resources needed to maximize integration.

Presenters
Bryan Poole
Transportation Planner II, Bicycle and Pedestrian, City of Durham

Anna Waller
Research Professor; Director, Carolina Center for Health Informatics; Adjunct Associate Professor, UNC Gillings School of Global Public Health

Facilitator
Katie Harmon
Graduate Research Assistant, UNC Gillings School of Global Public Health

Safe Systems Summit speakers

Lucinda Austin
Assistant Professor, UNC School of Media and Journalism

Lucinda Austin, Ph.D., teaches courses in public relations and strategic communication at the UNC School of Media and Journalism. Her research focuses on social media’s influence on strategic communication initiatives, namely health and crisis communication, and explores publics’ perspectives in corporate social responsibility and organization-public relationship building.


Terry Bellamy
Director of Transportation, City of Durham, North Carolina

Terry Bellamy, M.S., is an accomplished senior public administrator with more than 30 years of significant experience in developing transportation options that include multi-modal, implementation of sustainable infrastructure, and ensuring equitable access to transportation. Over this professional career Bellamy has been an advocate for green planning, pedestrian safety, Vision Zero, dock and dock less bike sharing, car sharing, implementing creative economic development solutions, and developing innovative practices in public policy.

Bellamy currently serves as the Director of Transportation for the City of Durham, North Carolina. Bellamy has previously served as the Assistant Director for Transportation Planning for the City of San Antonio, Texas, as the Director and Deputy Director of Operations for the District of Columbia Department of Transportation, and as the Director of Operations and Manager of Transportation Planning for the Greensboro, North Carolina, Department of Transportation.

Lori Snyder Bennear
Jill Plant Grainger Associate Professor of Energy Economics and Policy, Nicholas School for the Environment, Duke University

Lori Snyder Bennear, Ph.D., focuses her research on evaluating environmental policies and improving methods and techniques for conducting these evaluations. While the field of policy evaluation is a broad one, her specific niche is in bringing rigorous quantitative methods to evaluate environmental policy innovations along four dimensions: 1) evaluating the effectiveness of environmental policies and programs; 2) evaluating strategic behavioral responses to non-traditional regulatory regimes; 3) assessing the distributional impacts of these new regulatory regimes; and 4) evaluating the role of program evaluation in environmental policy.

PLEASE NOTE: Capacity is limited, please inquire about available seats at registration desk prior to the workshop.
Larry Cook
Associate Professor, Department of Pediatrics, Division of Critical Care, University of Utah
Larry Cook, Ph.D., has more than 20 years of experience integrating databases using probabilistic linkage to study motor vehicle crash outcomes. He has published more than 40 manuscripts and technical reports on probabilistic linkage theory and application. He has assisted numerous states and agencies in completing data linkage projects.

Jill Cooper
Co-Director, Safe Transportation Research and Education Center, University of California, Berkeley
Jill Cooper facilitates multi-disciplinary traffic safety and injury prevention planning at the UC Berkeley Safe Transportation Research and Education Center (SafeTREC). She is the principal investigator on projects involving pedestrian and bicycle safety, crowdsourced data collection, community-level safety planning and statewide highway safety planning. Cooper has also served as a mediator and has taught mediation and negotiation at several universities.

Alan Dellapenna
Branch Head, Injury and Violence Prevention, North Carolina Department of Health and Human Services
Alan Dellapenna, M.P.H., heads the Injury and Violence Prevention Branch at the North Carolina Division of Public Health. Prior to joining DPH, he completed a 27-year career as a U.S. Public Health Service officer assigned to the Indian Health Service. He provided environmental health and injury prevention services at the field, regional and national level.

Ann Dellinger
Branch Chief, Home, Recreation, and Transportation Branch, National Center for Injury Prevention and Control, Centers for Disease Control and Prevention
As Branch Chief, Ann M. Dellinger, Ph.D., oversees older adult falls, traumatic brain injury and road safety work at the CDC, as well as consults with the U.S. Transportation Research Board, the World Health Organization and the Pan American Health Organization. Dr. Dellinger is the recipient of the Department of Health and Human Services Secretary’s Awards for Distinguished Service for assistance during the Oklahoma City bombing (1997) and the World Trade Center/Anthrax Investigation Emergency Response Team (2002).

Naveen Eluru
Associate Professor, Department of Civil, Environmental and Construction Engineering, University of Central Florida
Naveen Eluru, Ph.D., is an Associate Professor in the Department of Civil, Environmental and Construction Engineering at the University of Central Florida. Prior to that, he served as an Assistant Professor in the Civil and Applied Mechanics Department at McGill University. Dr. Eluru’s research is primarily geared towards the formulation and development of advanced behavioral models that allow us to better understand human decision processes.

Mark Ezzell
Director, N.C. Governor’s Highway Safety Program
Mark Ezzell serves as Director of the N.C. Governor’s Highway Safety Program, which works to reduce traffic deaths and injuries through the planning and execution of innovative traffic safety initiatives. He has a 20-year history directing statewide public safety and health campaigns, has directed tobacco-free schools and college efforts for the N.C. Health & Wellness Trust Fund, has worked with the N.C. Governor’s Crime Commission, and served as chair of the N.C. Council on Developmental Disabilities.

Leah Freichs
Assistant Professor, UNC Gillings School of Global Public Health
Leah Freichs, Ph.D., is a public health researcher and practitioner with expertise in community-based participatory and systems science research. Her research investigates engaged and participatory research approaches with systems science methods in order to address health issues in underserved communities. Dr. Freichs uses visual diagramming and facilitated interactions with computer models to improve our understanding of complex dynamics influencing health problems of interest.

Peter Furth
Professor, Civil and Environmental Engineering, Northeastern University
Peter Furth, Ph.D., is a Professor of Civil Engineering at Northeastern University. His transit research covers routing and scheduling, data collection, ridership estimation and modeling, and transit signal priority. Dr. Furth has been a consultant to more than 25 transit agencies nationwide. He also researches traffic signal control and bikeway design. In the summers, he teaches a course in the Netherlands on Design for Sustainable Urban Transportation, exposing American students to Dutch best practices in transit- and bike-oriented urban planning. Bikeway design, transit priority and traffic safety.

Jason Gainey
Manager, Passive Safety and Accident Research at Volkswagen Group of America
Jason Gainey, M.B.A., Manager of Passive Safety and Accident Research at Volkswagen Group of America, has 20 years of experience in automotive engineering and safety. He is currently the Chairman of the Pedestrian Protection Working Group within the Alliance of Automobile Manufacturers and has recently been named to the Advisory Board for the Collaborative Science Center for Road Safety.

Jill Kuhlberg
Health Systems Evaluator, North Carolina State University
Jill Kuhlberg, Ph.D., has worked internationally to support communities and organizations as they work to understand and address complex problems using system dynamics. At the Brown University School of Social Work, Dr. Kuhlberg developed participatory methods for systems science approaches, taught courses on system dynamics simulation modeling and community-based system dynamics, and collaborated on several projects related to public health, social work and community development.

Kristen Hassmiller Lich
Associate Professor, Department of Health Policy and Management, UNC Gillings School of Global Public Health
Kristen Hassmiller Lich, Ph.D., is an Associate Professor in the Department of Health Policy and Management at the University of North Carolina at Chapel Hill. Her research and practice-based work seek to advance the way we use system maps, and local data to improve policy decision-making at multiple levels within systems, and to engage stakeholders in the process.

Noreen McDonald
Department Chair, Thomas Willis Lambeth Distinguished Professor, Director of Carolina Transportation Program, UNC Department of City and Regional Planning
Noreen McDonald, Ph.D., focuses her work on how infrastructure investments and technology changes influence travel and the downstream impacts on road safety, public health, energy demand and city form. Dr. McDonald is an internationally recognized expert on the travel behavior of youth and young adults, and her work on children’s travel has shown that improved pedestrian and bicycle facilities can increase travel by foot. Dr. McDonald’s most recent work explores disruptions associated with shared mobility, such as Uber and Lyft and autonomous vehicles.
Jeff Michael
Associate Administrator, National Highway Traffic Safety Administration
Jeffrey Michael, Ph.D., is the Associate Administrator for Research and Program Development at NHTSA, with responsibility for the development of programs to increase seat belt use, decrease impaired driving, improve emergency medical services, and enhance the safety of motorcyclists, bicyclists, pedestrians and older drivers. Previously, Dr. Michael served as Director of the Impaired Driving and Occupant Protection Office, with responsibility for developing and promoting programs to reduce alcohol and drug-impaired driving and increasing the use of seat belts and child safety seats. During his tenure, Dr. Michael also served as Chief of the agency’s Emergency Medical Services (EMS) Division, where he supported the national EMS system by developing and maintaining consensus guidelines for educating emergency medical technicians and improving EMS operations.

Jonathan A. Morell
Editor, Evaluation and Program Planning
Jonathan “Jonny” Morell, Ph.D., believes that evaluation requires a systems approach because interventions produce complex outcomes, but that evaluations should be as simple and straightforward as possible. Dr. Morell has done research, consulted, lectured and conducted workshops on the complexity in evaluation. He has been recognized by the American Evaluation Association, who awarded him their Paul F. Lazarsfeld Evaluation Theory Award.

Becky Naumann
Research Assistant Professor, Department of Epidemiology, UNC Gillings School of Global Public Health
Becky Naumann, Ph.D., is a research assistant professor in the Department of Epidemiology at the Gillings School of Global Public Health at UNC-Chapel Hill. Her main area of research is injury prevention and her work focuses on understanding risk factors and trends of unintentional injuries and evaluating injury prevention interventions, largely in the areas of road traffic injury and opioid overdose. Methodologically, Dr. Naumann has experience and interest in applying complex systems science methods to injury prevention.

Peter Norton
Associate Professor, Engineering and Society, University of Virginia
Peter Norton, Ph.D., is an Associate Professor of history in the Department of Engineering and Society at the University of Virginia, and a visiting faculty member at Technical University Eindhoven (Netherlands). Dr. Norton is the author of Fighting Traffic: The Dawn of the Motor Age in the American City (MIT Press). His article “Street Rivals: Jaywalking and the Invention of the Motor Age Street” (Technology and Culture) won the Usher Prize for the Society for the History of Technology.

Bryan Poole
Transportation Planner, City of Durham, North Carolina
Bryan Poole, M.C.R.P., American Institute of Certified Planners (AICP), is a Bicycle and Pedestrian Transportation Planner for the City of Durham, where he is responsible for short- and long-range planning, project management and bike share operations. Previously he worked throughout North Carolina as a planner with NCDOT’s Division of Bicycle and Pedestrian Transportation and as a research assistant at the Pedestrian and Bicycle Information Center.

Laura Sandt
Director, Collaborative Sciences Center for Road Safety
Laura Sandt, Ph.D., serves as director for Collaborative Sciences Center for Road Safety and the Pedestrian and Bicycle Information Center at the UNC Highway Safety Research Center. Her primary focus area lies in conducting research and developing guidance related to pedestrian and bicycle safety and mobility. Dr. Sandt has led projects working directly with states and local communities to develop, implement and evaluate programs aimed at improving safety.

Bob Scopatz
Senior Transportation Analyst, VHB
Bob Scopatz, Ph.D., has worked in traffic safety and data quality improvement for more than 30 years. His recent work includes several projects for the Federal Highway Administration, National Highway Traffic Safety Administration, and the Federal Motor Carrier Safety Administration on improving data for decision making, data integration and data governance.

Leah Shahum
Founder and Executive Director, Vision Zero Network
Leah Shahum is the founder and director of the Vision Zero Network, a national campaign supporting cities working toward Vision Zero — zero traffic fatalities and severe injuries. As a German Marshall Fund Fellow, Shahum researched Vision Zero strategies in Sweden, Germany and the Netherlands. Prior to that work, she was the Executive Director of the San Francisco Bicycle Coalition, which promotes bicycling for everyday transportation. Shahum formerly served on the Boards of Directors of the Golden Gate Bridge, Highway and Transportation District, and the San Francisco Municipal Transportation Agency.

Kimberly Kolody Silverman
Global Technology Leader for Highway and Traffic Safety, Jacobs Engineering
Kimberly Kolody Silverman, M.S., is a professional engineer and has more than 20 years of experience focused on crash analysis, safety data, countermeasures, safety performance management and policy. She has worked on the Highway Safety Manual, strategic highway safety planning for departments of transportation, and various other projects for the National Cooperative Highway Research Program and the U.S. Department of Transportation Federal Highway Administration. Silverman is a member of the Transportation Research Board’s Committee on Transportation Safety Management, ANB 10.

Shakiyla Smith
Program Officer, The Fetzer Institute
Shakiyla Smith, EdD, MPH, is a longtime public health practitioner who has worked in the field of violence and injury prevention for nearly 15 years. She has a master’s of Public Health degree from Emory University and a Doctorate of Adult Education from the University of Georgia. Her scholarly and practice focus areas include action research, collaborative and adaptive learning approaches, adult development and transformative learning, and collaborative developmental action inquiry. Dr. Smith is working at the Fetzer Institute with national and international partners around the intersections between personal and societal transformation, and between science and spirituality.

Danielle Spurlock
Assistant Professor, Department of City and Regional Planning, University of North Carolina at Chapel Hill
Danielle Spurlock, Ph.D., focuses her work on plan and policy implementation and addresses policy questions in the areas of planning, public health, environmental and social justice, and dispute resolution. Her research explores the relationships among land use, the environment, human behavior and structural inequality on a variety of research projects including: social stratification and its impact of the siting of hazardous land uses; social vulnerability and emergency preparedness; and the impact of land use decisions on ecosystems services. Dr. Spurlock’s most recent research investigates plan and policy implementation and the land use decision-making process at the parcel level.

Allie Thomas
Assistant Professor, Department of City and Regional Planning, University of North Carolina at Chapel Hill
Allie Thomas, Ph.D., studies how best practices travel the globe and where they land, focusing on China. Her U.S.-based work focuses on electric bicycles, along with family and millennials’ travel behavior in the southeastern U.S. Dr. Thomas is semi-fluent in Mandarin Chinese and has extensive experience living in China.

Stuart Thompson
Project Manager, Roadway Safety Data Program, U.S. Department of Transportation Federal Highway Administration
Stuart Thompson, P.E., is a Transportation Specialist at the Federal Highway Administration, who works with state and local agencies in increasing their capability to manage, collect and analyze their safety data. Thompson believes a good state safety data system is a critical component in the effort to eliminate roadway fatalities. Stuart has developed informational guides to target safety data management, governance, and data integration. He is a professional engineer licensed in the state of New Hampshire.
**SPEAKER BIOS**

**Anna Waller**
Research Professor; Director, Carolina Center for Health Informatics; Adjunct Associate Professor; UNC Gillings School of Global Public Health

Anna Waller, ScD, is research professor in the Department of Emergency Medicine at the University of North Carolina at Chapel Hill, and Principle Investigator/Science Director for the North Carolina Disease Event Tracking and Epidemiologic Collection Tool (NC DETECT). Dr. Waller has worked in public health surveillance for more than 25 years.

**Nicholas Ward**
Director, Center for Health and Safety Culture, Western Transportation Institute

Nicholas Ward, Ph.D., is the Director of the Center for Health and Safety Culture at Montana State University. This center focuses on transforming culture across the social ecology that influences health and safety including safe driving. This includes the role of traffic safety culture in achieving the effective application of the Safe Systems approach.

**Ben Welle**
Global Health & Road Safety Manager, World Resources Institute, Ross Center for Sustainable Cities

Ben Welle, M.U.R.P., is a senior associate urban and transportation planner with EMBARQ, a signature initiative of the World Resources Institute, where he works to reduce traffic fatalities, improve the environment and increase quality of life through sustainable transport and urban development. Welle’s work includes leading global research and projects, particularly in the areas of traffic safety and health; development of tools that cities can use to create cities safer, cleaner and more active by design; collaborating on sustainable transport projects and coordinating with partners from around the world. Prior to working at EMBARQ, he was assistant director of the Center for City Park Excellence at the Trust for Public Land in Washington, D.C., researching and consulting on city parks, public space, green infrastructure, active transport and related economic impact.

**Kevin Womack**
Director, Office of Research, Development and Technology, U.S. Department of Transportation

Kevin Womack, Ph.D., began his tenure at the U.S. Department of Transportation in August, 2011. In his current position, Dr. Womack is the senior administrator over the University Transportation Centers program and is also responsible for coordinating research across the U.S. DOT.

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**Upcoming Safe Systems and transportation learning opportunities**

Continue the conversation and learning about Safe Systems at the following upcoming events:

**LEARN** Webinar on Oct. 30, 2018, 2 – 3 pm Eastern
Tune in to a second Vision Zero Network webinar on Safe Systems scheduled for Tuesday, October 30, 2018, 2 – 3 pm Eastern.

**CONNECT** Safety Sunday @ TRB networking reception on January 13, 2019
Mark your calendar and plan to attend CSCRS’s Safety Sunday @ TRB networking reception on Sunday, January 13, 2019, at the 2019 Transportation Research Board Annual Meeting.

**WORKSHOP** Putting the “System” in a Safe Transportation System TRB Workshop, Thursday, January 17, 2019.
Hosted by the Standing Committee on Pedestrians, workshop organizers will share highlights from a recent CSCRS project related to mapping pedestrian systems and will walk attendees through a series of exercises progressing from developing a shared sense of the underlying complexity driving a problem to obtaining insight on how best to effect change on a complex and persistent problem, like pedestrian injury. Workshop attendees will:

1) learn more about Safe Systems and systems science with an emphasis on how these two concepts can affect pedestrian safety; and

2) leave with a better understanding of the complicated systems that influence pedestrian safety, as well as a set of best practices that they can use to leverage positive change for pedestrians in their jurisdictions.

To learn more about this opportunity, contact Wes Kumfer, kumfer@hsrc.unc.edu.

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**Tell Us More**

Are you aware of something else that should be included in this list? Want to explore setting up something Safe Systems-themed at/for your organization? Have other ideas? Please keep in touch with CSCRS at info@roadsafety.unc.edu so we can help coordinate and cross promote future Safe Systems and systems science-related events and opportunities.
Students and researchers selected to present at the Safe Systems Summit include:

**Numan Ahmad (S)**
University of Tennessee – Knoxville
A taxonomy of driving errors and violations and their association with the built environment: A path analysis approach

**Farah Jazi Al-Mahameed**
University of Wisconsin - Milwaukee
Developing street corridor-specific safety index for pedestrian and bicyclist activities

**Ramin Arvin (S)**
University of Tennessee – Knoxville
Evaluating safety with automated vehicles at signalized intersections: Application of adaptive cruise control in mixed traffic

**Mojdeh Azad (S)**
University of Tennessee – Knoxville
Effects of smartphone augmented reality games on travel behavior and safety

**Alexis Basantis (S)**
Virginia Tech Transportation Institute
Assessing alternative approaches for conveying highly automated vehicle ‘intentions’

**Alexandra Boggs (S)**
University of Tennessee – Knoxville
Safety in the connected and automated vehicle era: A U.S. perspective on research needs

**Abie Bonevac (S)**
Appalachian State University
Student travel behavior

**Stephen Cauffman (S)**
NC State University
Displaying non-safety critical information through in-vehicle displays

**Katherine Harmon**
University of North Carolina – Chapel Hill
North Carolina data linkage & integration: The long road ahead

**Mahdie Hasani (S)**
San Diego State University
Identifying high crash risk intersections for walking and biking

**Amin Mohamadi Hezaveh (S)**
University of Tennessee – Knoxville
Home-based approach: A complementary definition of road safety

**Nima Hoseinzadeh (S)**
University of Tennessee – Knoxville
Incorporating route safety in the pathfinding problem using big data

**Wen Hu**
Insurance Institute for Highway Safety
An examination of the increases in pedestrian motor vehicle crash fatalities during 2009–16

**Armana Huq (S)**
Florida International University
Modeling the impact of freeway incident characteristics on secondary crashes

**Zachary Jerome (S)**
University of Tennessee – Knoxville
Untangling systematic and random heterogeneity in safety performance functions for multilane rural highways

**Sarah Johnson (S)**
University of North Carolina – Chapel Hill
Midblock in focus: Examining bike/walk safety in Raleigh through a systemic safety lens

**Mohsen Kamrani (S)**
University of Tennessee – Knoxville
Harnessing instrumented vehicles data for real-time crash risk prediction: A comparison of machine learning classifiers

**Kyuhyun Lee**
Texas A&M Transportation Institute
Emerging data for improving pedestrian and bicyclist safety

**Taehun Lee (S)**
NC State University
Conflict point safety performance functions for the planning-level safety evaluation of alternative intersection designs

**Li Li (S)**
Department of Industrial & System Engineering, NC State University
Image-based driver’s hand tracking using fast normalized cross coefficient

**Sevin Mohammadi (S)**
University of Tennessee – Knoxville
Social influence on driver decisions using modeling and gossip algorithms

**Abdul Rashid Mussah (S)**
University of Tennessee – Knoxville
Using driving volatility as a leading predictor of unsafe events involving vulnerable road users – A naturalistic driving environment study

**Pooya Najaf**
SEPI
County-level transportation safety planning in North Carolina

**Abhishek Nayak (S)**
Texas A&M University
Response of autonomous vehicles to emergency vehicles (RAVEV)

**Tim Nye (S)**
Institute for Transportation Research & Education, NC State University
Estimating the effect of standard enforcement of a rear seat belt law for rear seat fatality prevention

**Joy Pasquet (S)**
University of California - Berkeley
From reaction to proaction: Developing a systemic approach to road safety in San Diego

**Katherine Petiolas**
Carolina Center for Health Informatics, Department of Emergency Medicine, University of North Carolina – Chapel Hill
Motor vehicle injury research in North Carolina: An overview of data sources

**James Poslusny (S)**
Institute for Transportation Research & Education, NC State University
Analysis of data retrieved from a staged train collision with a motor vehicle

**Roozbeh Rahmani**
University of Florida
Local roads safety program in Florida

**Behram Walli (S)**
University of Tennessee – Knoxville
A heterogeneity based case-control analysis of motorcyclist injury crashes: Evidence from motorcycle crash causation study

**Yaoyu Wang (S)**
Humans and Autonomy Laboratory, Duke University
Machine learning tools for informing transportation system design

**Yi Wen (S)**
University of Tennessee – Knoxville
Gender and perception of safety of biking: A lesson from E-bike users in China to encourage women biking

**Lin Yang (S)**
University of California – Berkeley
Pre-crash energy dissipation maximization

**Mengjiao Yu (S)**
University of California – Berkeley
Intelligent intersection system

(S) = Student
The Collaborative Sciences Center for Road Safety (CSCRS) is a National University Transportation Center (UTC) supporting the FAST Act research priority of promoting safety. It is one of the U.S. Department of Transportation’s (USDOT) five National UTCs announced December 2016.

Led by the UNC Highway Safety Research Center in collaboration with the UNC Department of City and Regional Planning and the UNC Injury Prevention Research Center, CSCRS unites leading transportation research, planning, public health, data science and engineering programs at:

Learn more: www.roadsafety.unc.edu

CSCRS Advisory Board

The CSCRS Advisory Board offers executive-level guidance and big picture input on our mission, vision and priorities. It is comprised of well-positioned decision makers in national, state, regional and local departments of transportation, health departments, planning organizations and safety advocacy organizations.

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Linda Bailey, Executive Director, National Association of City Transportation Officials
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Leah Shahum, Director, Vision Zero Network
Jane Terry, Senior Director, Government Affairs, National Safety Council
Bryant Walker Smith, Assistant Professor, School of Law, University of South Carolina
David Yang, Executive Director, AAA Foundation for Traffic Safety

The Governor’s Highway Safety Program works to reduce the number of traffic crashes and fatalities in the state of North Carolina through the planning and execution of safety programs. The Governor’s Highway Safety Program accomplishes this mission in two ways: by conducting highway safety initiatives each year, and through grant funding opportunities. These efforts address impaired driving, seat belt use, speeding, distracted driving, motorcycle safety, bicycle safety, pedestrian safety and other aspects of highway safety.

GHSP’s best known projects include Click It or Ticket, Booze It & Lose It, BikeSafe NC, Watch For Me NC and Speed a Little. Lose a Lot. GHSP also funds North Carolina’s Vision Zero initiative, which is working to meet the goal of zero deaths on North Carolina roadways through community involvement and data-driven safety interventions. GHSP is also a major funder of this conference.

Learn more: www.ncdot.gov/initiatives-policies/safety/ghsp

Research funding opportunity: CSCRS Systems at Work Collaboration Grants

Don’t let the conversations and connections made at the Summit end when the sessions come to a close! Apply for a CSCRS Systems at Work Collaboration Grant to turn your collaborative research idea into something concrete and actionable.

An extension of CSCRS’s existing funding mechanism, this funding opportunity would be an official partnership between a CSCRS researcher(s) and a community/community practitioner(s) to create more livable cities, as well as to help communities implement Safe Systems and/or systems science approaches. This could also potentially involve industry/corporate partners or non-profits, but must include a community entity (i.e., state or local agency).

Please visit www.roadsafety.unc.edu/research for more information about CSCRS Systems at Work Collaboration Grants.
Acknowledgements

Thank you! The inaugural Safe Systems Summit could not be a success without your experience, perspective, and commitment to helping pave the way to a safer future for all users on our roadways.

And a very big and sincere thank you to everyone who helped make the Safe Systems Summit possible! From high level strategic planning to inviting guests and spreading the word about registration, to the thinking through the tiniest level of detail to encourage student involvement. We couldn’t have done it without the endless support and energy of quite a few people, including:

- All 18+ Summit moderators, speakers and session organizers
- The North Carolina Central University students and City of Durham staff who helped lead a walking tour of downtown Durham on Wednesday afternoon
- On-site event staff from the UNC Highway Safety Research Center
- Members of the CSCRS Advisory Board (listed on page 24) and Executive Committee:
  
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**Acknowledgements**

Acknowledgements

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A very special thank you to the following additional Safe Systems Summit sponsors:

- **CHAMPION**
  - The University of North Carolina Highway Safety Research Center

- **PATRON**
  - Uber

- **ADVOCATE**
  - VHB

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  - AT&T Fleet Complete
Mission
To create and exchange knowledge to advance transportation safety through a multidisciplinary, Safe Systems approach.

Vision
To unite perspectives from planning, engineering, public health, data science, and robotics in ways that advance road safety research and equip professionals and the public at large with cutting-edge tools, data, and resources to address the systems that impact transportation safety.

Consortium Members

info@roadssafety.unc.edu
www.roadssafety.unc.edu
@CSCRSInfo

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