SAFER-SIM

TRB 2018 Program

Tier 1 University Transportation Center

Promoting Safety

SAFETY RESEARCH USING SIMULATION
UNIVERSITY TRANSPORTATION CENTER

Transportation Research Board

97th Annual Meeting

January 7—11, 2018

Washington D.C.

This program organizes the sessions that include SAFER-SIM posters or presentations at the Transportation Research Board 97th Annual Meeting

SAFER SIM

SAFETY RESEARCH USING SIMULATION

UNIVERSITY TRANSPORTATION CENTER

Consortium Members:

University of Iowa

University of Central Florida

University of Massachusetts—Amherst

University of Puerto Rico—Mayagüez

University of Wisconsin—Madison

Workshop 144G	Sunday, January 7th | 9:00 AM—5:00 PM

Consumer Acceptance of Advanced Driver Assistance Systems and Highly Automated Vehicles (HF-G Ticket Required)

Daniel McGehee, University of Iowa, presiding
Ashley McDonald, University of Iowa, presiding

Sponsored by:

Standing Committee on Vehicle User Characteristics (AND10)

Lectern Session 228	Monday, January 8th | 8:00 AM—9:45 AM Convention Center, Salon B

Innovative Methods Applied to Young Driver Research—Hybrid Session

SAFER-SIM Presentation:

Latent Hazard Anticipation in Young Drivers: A Review and Meta -Analysis of Training Studies

(18-02056)

Siby Samuel, University of Massachusetts—Amherst

James Unverricht, Old Dominion University

Yusuke Yamani, Old Dominion University

Lectern Session 400 (continued)	Monday, January 8th | 8:00 AM—9:45 AM Convention Center, Salon B

Innovative Methods Applied to Young Driver Research—Hybrid Session

SAFER-SIM Presentation:

Virtual Reality Headset Training: Can It Be Used to Improve Young Drivers' Latent Hazard Anticipation and Mitigation Skills *(18-01500)*

Ravi Agrawal, University of Massachusetts—Amherst

Donald Fisher, OST-R/Volpe Center

Michael Knodler, University of Massachusetts—Amherst

Siby Samuel, University of Massachusetts—Amherst

Lectern Session 289	Monday, January 8th | 10:15 AM—12:00 PM Convention Center, 103A

Factors That Determine Safe and Unsafe Driver Behaviors

SAFER-SIM Presentation:

Evaluation of Downstream Merge Behaviors Resulting from Driver Lane Choice: A Driving Simulator Study *(18-03610)*

Francis Tainter, University of Massachusetts—Amherst

Alyssa Ryan, University of Massachusetts—Amherst

Cole Fitzpatrick, University of Massachusetts—Amherst

Michael Knodler, University of Massachusetts—Amherst

Poster Session 379	Monday, January 8th | 1:30 PM—3:15 PM Convention Center, Hall E Poster—B474

Analyzing the Effectiveness of Congestion Pricing and Managed Lanes

SAFER-SIM Poster:

Access Design Safety Analysis for Managed Lanes Including Accessibility Level and Weaving Length *(18-00860)*

Moatz Saad, University of Central Florida
Mohamed Abdel-Aty, University of Central Florida
Jaeyoung Lee, University of Central Florida
Ling Wang, University of Central Florida

Poster Session 394	Monday, January 8th | 1:30 PM—3:15 PM Convention Center, Hall E Poster—A224

Advanced Analysis to Improve Nonmotorized Transportation Safety

SAFER-SIM Poster:

Enhancing Nonmotorized Safety by Simulating Nonmotorized Exposure Using a Transportation Planning Approach *(18-06103)*

Shamsunnahar Yasmin, University of Central Florida
Tanmoy Bhowmik, University of Central Florida
Moshiur Rahman, University of Central Florida
Naveen Eluru, University of Central Florida

Lectern Session 428	Monday, January 8th | 3:45 PM—5:30 PM Convention Center, 103B

User Information Needs for Connected Vehicle Environments and Automation

SAFER-SIM Presentation:

Effects of Connected-Vehicle Warning Systems on Rear-End Crash Avoidance Behavior Under Fog Conditions *(18-01064)*

Yina Wu, University of Central Florida

Mohamed Abdel-Aty, University of Central Florida

Juneyoung Park, Hanyang University

Jia Zheng Zhu, University of Central Florida

Lectern Session 478	Tuesday, January 9th | 8:00 AM—9:45 AM Convention Center, 207B

Freeway and Interchange Design Decision-Making Approaches

SAFER-SIM Presentation:

Safety Impact of Weaving Distance on Freeway Facilities with Managed Lanes Using Both Microscopic Traffic and Driving Simulation *(18-03175)*

Qing Cai, University of Central Florida

Moatz Saad, University of Central Florida

Mohamed Abdel-Aty, University of Central Florida

Jinghui Yuan, University of Central Florida

Jaeyoung Lee, University of Central Florida

Poster Session 523	Tuesday, January 9th | 8:00 AM—9:45 AM Convention Center, Hall E Poster—A105

The Search for a Better Way, Part 1: Exploring New Data and New Applications of Data in Highway Safety

SAFER-SIM Poster:

Safety Analytics for Integrating Crash Frequency and Real-Time Risk Modeling for Expressways *(18-00800)*

Ling Wang, University of Central Florida

Mohamed Abdel-Aty, University of Central Florida

Jaeyoung Lee, University of Central Florida

Poster Session 568	Tuesday, January 9th | 10:15 AM—12:00 PM Convention Center, Hall E Poster—A111

Geometric Design Research and Graduate Student Poster Session

SAFER-SIM Poster:

Evaluation and Safety Analysis of a Two-Way Left-Turn Lane in the PR-107 Using a Driving Simulator

(P18-20969)

Ricardo Garcia Rosario, University of Puerto Rico—Mayaguez

Didier Valdes, , University of Puerto Rico—Mayaguez

Poster Session 722	Tuesday, January 9th | 3:45 PM—5:30 PM Convention Center, Hall E Poster—A226

Traffic Control Devices

SAFER-SIM Poster:
Evaluating Countermeasures to Improve Pedestrian and Bicycle Safety *(18-04701)*

Ibrahim Alsghan, University of Wisconsin—Madison
Madhav Chitturi, University of Wisconsin—Madison
Kelvin Santiago-Chapparo, University of Wisconsin—Madison
Andrea Bill, University of Wisconsin—Madison
David Noyce, University of Wisconsin—Madison

Lectern Session 694	Tuesday, January 9th | 3:45 PM—5:30 PM Convention Center, 103B

Bicycle/Pedestrian Safety: Simulator Studies

SAFER-SIM Presentation:
Pedestrian Road Crossing at Night in an Immersive Simulator *(18-01218)*

Lakshmi Subramanian, University of Iowa
Elizabeth O'Neal, University of Iowa
Sophia Mallaro, University of Iowa
Breanna Williams, University of Iowa
Jodie Plumert, University of Iowa
Joe Kearney, University of Iowa

Lectern Session 755	Wednesday, January 10th | 8:00 AM—9:45 AM Convention Center, 102B

Connected and Automated Vehicle Systems in Complex Transportation Systems

SAFER-SIM Presentation:

Understanding the Highway Safety Benefits of Different Approaches of Connected Vehicles in Reduced-Visibility Conditions *(18-00846)*

Md Sharikur Rahman, University of Central Florida

Mohamed Abdel-Aty, University of Central Florida

Ling Wang, University of Central Florida

Jaeyoung Lee, University of Central Florida

Poster Session 777	Wednesday, January 10th | 8:00 AM—9:45 AM Convention Center, Hall E Poster—A106

A Collection of Roundabout Topics: Safety, Design, and Operations

SAFER-SIM Poster:

Investigating Driver Yielding Behavior at Roundabout Approaches *(18-02764)*

Beau Burdett, University of Wisconsin—Madison

Ibrahim Alsghan, University of Wisconsin—Madison

Madhav Chitturi, University of Wisconsin—Madison

Andrea Bill, University of Wisconsin—Madison

David Noyce, University of Wisconsin—Madison

Poster Session 780	Wednesday, January 10th | 8:00 AM—9:45 AM Convention Center, Hall E Posters—A151, A145

Evaluating Driving Simulators and Advanced Driver Assistance Systems

SAFER-SIM Poster:

Investigation of Time and Speed Perception Using a Driving Simulator

(18-01281)

Andronikos Keklikoglou, University of Massachusetts—Amherst

Cole Fitzpatrick, University of Massachusetts—Amherst

Michael Knodler, University of Massachusetts—Amherst

SAFER-SIM Poster:

Vehicle-to-Pedestrian (V2P) Communications Technology: Do Cell Phone Warnings Improve Road-Crossing Safety for Texting Pedestrians?

(18-01425)

Pooya Rahimian, University of Iowa

Elizabeth O'Neal, University of Iowa

Shiwen Zhou, University of Iowa

Junghum Paul Yon, University of Iowa

Luke Franzen, University of Iowa

Jodie Plumert, University of Iowa

Joe Kearney, University of Iowa

Poster Session 781	Wednesday, January 10th | 8:00 AM—9:45 AM Convention Center, Hall E Poster—A170

Cycling Safety and Comfort

SAFER-SIM Poster:

A Comparative Safety Analysis of Bicycle Infrastructure Treatments at Intersections *(18-05896)*

Nicholas Fournier, University of Massachusetts—Amherst

Eleni Christofa, University of Massachusetts—Amherst

Aikaterini Deliali, National Technical University of Athens

Michael Knodler, University of Massachusetts—Amherst

Poster Session 778	Wednesday, January 10th | 8:00 AM—9:45 AM Convention Center, Hall E Poster—A124

Human Factors Potpourri: Driver Health, State, and Interactions with Technology and the Environment

SAFER-SIM Presentation:

Demographic Observations in Conditionally Automated Driving in a Simulator *(18-05595)*

Chris Schwarz, University of Iowa

John Gaspar, University of Iowa

Timothy Brown, University of Iowa

Lectern Session 819	Wednesday, January 10th | 10:15 AM—12:00 PM Convention Center, 103A

Drivers' Behavior as a Function of Their Characteristics and the Driving Environment

SAFER-SIM Presentation:

Operational and Safety Performance of Signage and Pavement Markings Managed Lane Using a Driving Simulator *(18-06230)*

Bryan Ruiz-Cruz, University of Puerto Rico—Mayaguez

Johnathan Ruiz Gonzalez, University of Puerto Rico—Mayaguez

Ricardo Garcia Rosario, University of Puerto Rico—Mayaguez

Enid Colon Torres, University of Puerto Rico—Mayaguez

Didier Valdes, University of Puerto Rico—Mayaguez

Benjamin Colucci, University of Puerto Rico—Mayaguez