SAFER SIM

SAFETY RESEARCH USING SIMULATION
UNIVERSITY TRANSPORTATION CENTER

The University of Iowa  (Lead Institution)
University of Central Florida
University of Massachusetts – Amherst
University of Puerto Rico – Mayagüez
University of Wisconsin – Madison

Grants awarded in 2013 and 2016.

Tier 1 University Transportation Center
Funded by the US Department of Transportation.
Collaboration encouraged through a requirement of a 50% funding match.
Collaboration & Non-traditional Disciplines

Across Consortium Sites

Across University Departments

Civil Engineering
Computer Science
Education Psychology
Emergency Medicine
Industrial Engineering
Kinesiology
National Advanced Driving Simulator
Psychology & Quantitative Foundations
Psychology
Radiology
Science Education
Pharmacy
Center Themes

Automated vehicles technology
assessing road users’ responses to automated vehicles, augmented reality, and in-vehicle safety systems

Connected vehicles technology
assessing user responses to connected vehicles technology (e.g., V2V, V2P, I2B)

Vulnerable road users
examining risk factors for pedestrian and bicyclist collisions with vehicles, including high-risk groups (e.g., transportation workers, children, and the elderly)

Roadway infrastructure design
assessing how safely drivers, bicyclists, and pedestrians interact with roadway infrastructure designs

Distributed simulation technology
assessing real-time traffic conflicts between drivers, bicyclists, and pedestrians through connected simulators.
Projects Funded

2013 Grant
- 38 single institution projects
- 7 multi-site collaborative projects
- $35,000 - $100,000

- 6 Education projects
- $10,000 - $80,000

2016 Grant
- Up to a total of 5 years of funding
- 8 Initial Projects – Year 1
  - 3 collaborative across institutions
  - 5 single institution projects

Year 2 funding available
RFP coming Early October

Types of Projects
• Research
• Education & Outreach

Project Requirements:
• Safety theme
• Use of simulation technology
• Student involvement
• PI is a faculty member or full-time research staff
• 50% matching funds from non-Federal sources

Proposals due
November 30, 2017

Award Decisions
February 15, 2018

Projects to begin
Summer or Fall Term 2018
Advisory Board Member Panel

Dr. William Horrey
• AAA Foundation for Traffic Safety

Pat Hoye
• Bureau Chief - Governor’s Traffic Safety Bureau - Iowa

Lisa Schletzbaum
• Massachusetts Department of Transpiration

Dr. Rich Romano
• University of Leeds

Dr. Linda Boyle
• University of Washington
William J. Horrey

- Traffic Research Group Leader, AAA Foundation for Traffic Safety
- Ph.D. (2005) in Psychology from University of Illinois at Urbana-Champaign
- Transportation Human Factors
  - Visual and divided attention, Human-automation interaction, Driver distraction, Calibration of skill and judgement, Risk perception
- Chair of TRB Committee on Vehicle User Characteristics
- Associate Editor, Human Factors Journal
About the AAA Foundation

• Founded in 1947 by American Automobile Association (AAA) to conduct research to address growing highway safety issues
• Non-profit organization, Section 501(c)(3), funded by voluntary contributions from motor clubs associated with AAA, the Canadian Automobile Association, and individuals
Mission Statement

"To identify traffic safety problems, foster research that seeks solutions, and disseminate information and educational materials."
Research Focus Areas

- Emerging Technologies
- Vulnerable Road Users
- Driver Behavior & Performance
- Roadway Systems & Drivers
• What you would like to see from SAFER-SIM in terms of research, education, and outreach projects…
  • Continue to conduct strong work along the Center’s core themes
    • Leverage strengths to break new ground
    • Focus on multi-disciplinary
    • Distributed simulation capabilities
  • Preserve “fundamentals” in education and outreach
Patrick Hoye
Bureau Chief
Governor’s Traffic Safety Bureau

• Retired Colonel of the Iowa State Patrol
• 32 years of law enforcement experience
• Senior Drivers – Testing to ensure safe drivers

• Teen specific research to support GDL modifications
Richard Romano
Institute for Transport Studies

• BASc and MASc from University of Toronto (Aerospace): Started in Flight Simulation
• Manager of the Iowa Driving Simulator, University of Iowa (1990 to 1995)
• Founder and President Realtime Technologies, Inc. (1997 to 2015)
• Chair in Driving Simulation, University of Leeds (2015 to 2017)
Richard Romano
Institute for Transport Studies

• Improvements to rapid geo-specific database techniques
• Cost reduction in effective simulators
• Research into exploitation of geo-specific low-cost simulation to improve safety and provide training and accessibility
• Can we help people get or keep their driver’s license
• Can we help people learn to navigate the challenging aspects of their local commute (both walking and driving)
Lisa A. Schletzbaum

- Graduate of WPI with B.S. in Civil Engineering
- 20+ years of transportation planning, roadway/signal design, and traffic safety
- 200+ Road Safety Audits

- 20+ years member of WTS and ITE
- WTS-Boston Chapter President 2011-2012
- Member of Technical Advisory Committee for the ELCSI-PFS
- Member of various NCHRP Panels
Lisa A. Schletzbaum

- Interested in safe travel for all modes
- Shared Use Path crossings
- Crosswalk education/enforcement
- Transition area/cues from highway to town center
Linda Ng Boyle, University of Washington

- Professor & Chair, Industrial & Systems Engr
- Professor, Civil & Environmental Engineering (joint)
- Director, UW Human Factors and Statistical Modeling Lab
- [http://depts.washington.edu/hfsm/](http://depts.washington.edu/hfsm/)
- linda@uw.edu
- Twitter: @lindangboyle
Linda Ng Boyle, University of Washington

- **Research**
  - Connected or autonomous vehicles: safety implications
  - The changing face of transportation:
    - Multimodal
    - Shared rides
    - Bike share programs
  - How the research relates to changes in ..
    - Policy
    - Infrastructure
    - Enhanced Driver Education
  - Ongoing interdisciplinary and multi-institutional studies

- **Education**
  - How to design simulator studies to examine the safety implications of autonomous vehicles
  - What scenarios are available/possible to share?
    - Is there a shopping list somewhere?
    - Could Safer-Sim help set up a repository?
Linda Ng Boyle, University of Washington

- Outreach
  - Webinars and newsletters are great: already exists
  - Would be good to provide a forum for researchers to share data and testing scenarios in some meaningful way
    - ** this is a challenge, but would be worthwhile.