



STC

Southeastern Transportation Center

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*A Summit of
University Transportation Centers for Safety*

Pittsburgh, PA

March 19, 2015



Theme: Comprehensive Transportation Safety

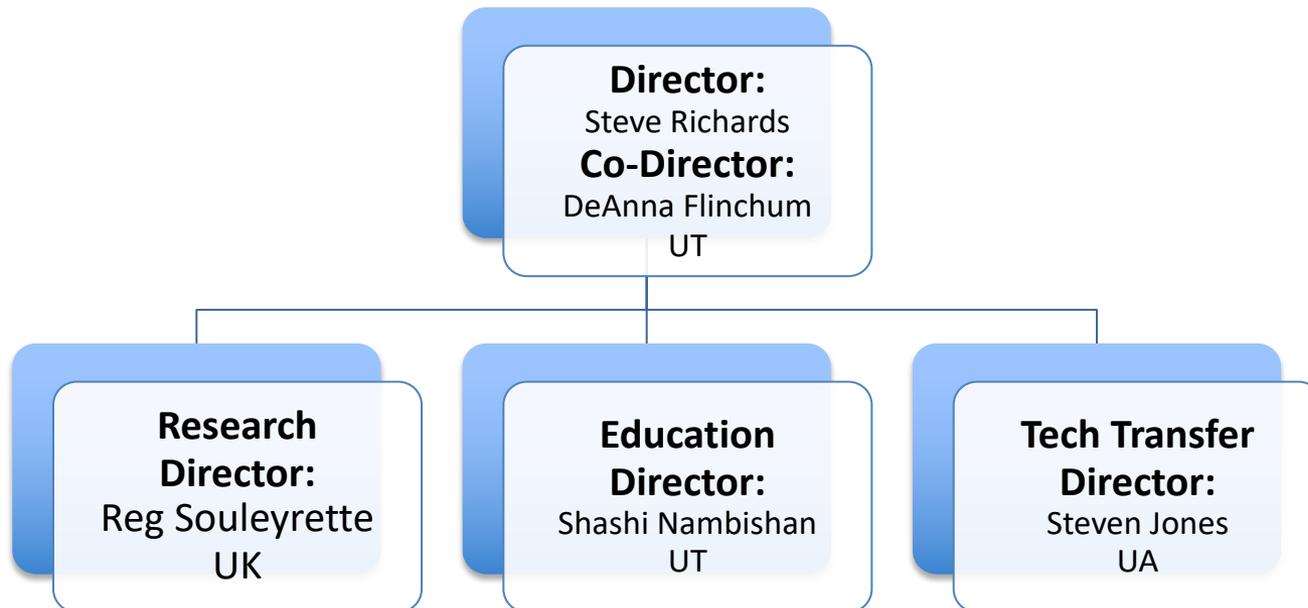
*9 Member Consortium**

- ✓ **University of Tennessee (Lead)**
- ✓ **Clemson University**
- ✓ **University of Alabama**
- ✓ **University of Alabama-Birmingham**
- ✓ **University of Central Florida**
- ✓ **University of Kentucky**
- ✓ **University of North Carolina-Chapel Hill (HSRC)**
- ✓ **North Carolina A&T University**
- ✓ **University of South Florida**

*New Members
(5 of 9)*

*Collaborations and activities facilitated via **Basic Ordering Agreements (BOAs)** between UT and each member.

STC Structure/Organization



STC Research Program

Research Program Components

- **Major Research Initiatives (MRIs)**
- **Opportunity/Exploratory (O/E) Grants**

Research Program Director:

Dr. Reginald Souleyrette, University of Kentucky



Major Research Initiatives (MRIs)

- **Survey of SASHTO research needs**; large-scale projects
- Significant funding levels; multi-year effort
- **Coordinator(s)** selected for each major initiative
- Multiple university partners, as well as outside collaborations
- Led and performed by designated **Core Research Team**
- Multiple sources of external match, in-kind match and cost sharing
- Detailed Work Plan, Work Schedule and Financial Plan



Major Research Initiatives (MRIs)

Short Project Title	*Funding	Core Team
Crash Modification Factors & the HSM	\$450,000	HSRC/CU/UA/UT/UK
Integrated Simulation & Safety	\$750,000	UK/UCF/UT
Explore S-D Characteristics/Culture	\$450,000	USF/UT/UA/UAB
Big Data for Safety	\$700,000	UT/UK/UCF

*Year 1 combined Federal & Match Funding



MRI-1: Crash Modification Factors and the HSM

- Core Team: HSRC, CU, UA, UK, & UT
- Year 1 Total Funding: \$450,000
- Objective: Development of Crash Modification Factors (CMFs) and CM Functions for high-priority engineering treatments; also focus on issues associated with implementing the HSM such as development of jurisdiction SPFs, as well as calibration methods; special emphasis on ROR, wet weather, work zone, cross median crash types.
- MRI-1 Coordinators: Reg Souleyrette & Sriniv Srinivasan (HSRC)



MRI- 2: Integrated Simulation & Safety

- Core Team: UCF, UK & UT
- Year 1 Total Funding: \$750,000
- Objective: Evaluate use of surrogate safety measures, develop crash prediction models based on simulation; develop conflict analysis and human centered simulation for effective safety analysis; explore large scale simulation for multi-state /regional evaluation of emergency response strategies /operations to include incident management
- MRI-2 Coordinators: Essam Radwan (UCF) & Nick Stamatiadis (UK)



MRI-3: Exploration of Socio-Demographic Characteristics & Cultural Factors in Differential Safety Performance Across Geography

- Core Team: USF, UT, UAB & UA
- Year 1 Total Funding: \$450,000
- Objective: Determine extent to which population characteristics (e.g., aging, unfamiliarity, risk-taking factors, medical factors, income/education factors, etc.) explain differential safety performance. Investigate options and assemble appropriate data bases, determine scale and framework for investigations, and select appropriate analytic methods for routine assessments.
- MRI-3 Coordinators: Steve Polzin (USF) & Shashi Nambisan (UT)



MRI-4: Big Data for Safety Monitoring, Assessment and Improvement

Big Data refers to the vast amount of transportation infrastructure, vehicle, traveler, environmental, social, economic and spatial information that is (or could be) collected, fused and mined to monitor, assess and improve transportation safety.

- Core Team: UT, UCF, & UK
- Year 1 Total Funding: \$750,000
- Objective: Visualize/analyze Big Data opportunities for safety enhancement. Generate new frameworks for acquisition/use of Big Data to facilitate safety monitoring, assessment and improvement. Develop tools/products for Big Data-related safety enhancements.
- MRI-4 Coordinator: Asad Khattak (UT)



Opportunity & Exploratory (O&E) Grants

- “Seed” funding to: (1) encourage new research participation (2) leverage existing research funding; (3) “explore” new/innovative concepts/technologies; and/or (4) address safety “hot topics”
- **Competitively selected** with PI(s) designated for each project through proposal process (29 1st round proposals!)
- Typically, project team consists of 1 or 2 faculty at a single university working with their graduate students
- Typically, single-source and/or in-kind matching funds
- Typical O/E Grant minimum total funding: **~\$100,000**
(Federal + Match)



STC O&E - 2013 Projects

Title	University	PI	Funding
Automated Traffic Surveillance—Aerial Camera Array	Clemson	Wayne Sarasua	\$78,676 (\$39,338)
Wrong-way Driving Incidents Evaluation—Florida’s Turnpike	UCF	Haitham Al-Deek	\$129,999 (\$49,999)
Corridor Emergency Vehicle Preemption Development/Evaluation	UK	Adam Kirk	\$100,000 (\$50,000)
Promoting Safe Transportation Among Older Drivers—Simulator	USF	Jerri Edwards	\$161,450 (\$111,450)



STC O&E - 2013 Projects

Title	University	PI	Funding
Intervention Strategies for Teen Driver Unsafe Cell Phone Usage	NCA&T	Amanda McBride	\$100,851 (\$50,851)
Tension-based Guardrail End Terminal Concept Development	UAB	Dean Sicking	\$300,377 (\$50,377)
New Technologies and Bicycle Safety	UT	Chris Cherry	\$103,064 (\$53,064)
Utilizing Assistive Technology to Remove Communication Barriers—Public Transit Passengers with Disabilities	UT	Rupy Sawhney	\$96,584 (\$48,292)



Journal of Transportation Safety & Security

2006 – JTSS idea conceived

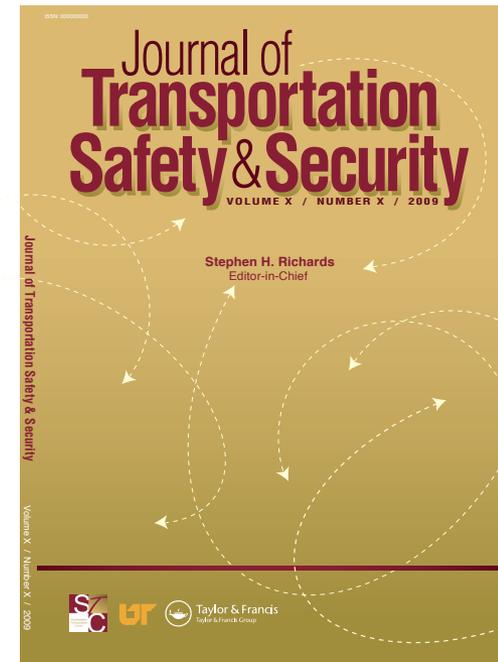
2007 – JTSS blueprint created

2008 – Putting the pieces together

2009 – LAUNCH!

2010 – JTSS expands globally

2014 – JTSS goes digital



Journal of Transportation Safety & Security

- **International Board of Directors, Authors, and Reviewers**
- **Publishes original research on:**
 - Infrastructure design
 - Driver behavior and human factors
 - Traffic control and traffic operations
 - Crash data collection and analyses
 - Safety information and communication systems
 - Advanced and emerging vehicle and network technologies
 - Safety policy and planning
 - Security issues of transportation systems and networks
 - Emergency and incident planning and response



2015 Roadside Safety & Simulation Conference

October 6, 2015 Orlando, Florida

- First RSS conference held in Rome, 2007
- STC is joint sponsor with Center for Advanced Transportation Systems Simulation at UCF
- Goal of Conference is to showcases advancements in traffic simulation and driving simulator technologies; introduce new initiatives and concepts in RSS
- STC to introduce new “modular safety course” to academic community



2015 Roadside Safety & Simulation Conference

Topics

Traffic Micro Simulation

Driving Simulators

Big Data

Naturalistic Driving

Highway Safety Manual

Crash Analysis

Surrogate Measures of Safety

Safety Modeling

Crash Causality

Emerging Technologies

Vehicle Automation





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2015 TRB Student Spotlight Event

3 Minute Thesis Presenters

SUCCESS!

