



SAPR Report for University Transportation Centers

This is a semi-annual report of program progress and performance for the Collaborative Sciences Center for Road Safety, a national UTC focused on safety.

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1. Accomplishments

1.1 What are the major goals and objectives of the program?

CSCRS's [Strategic Roadmap](#) outlines our goals and objectives detailed in this report.

1.2 What was accomplished under these goals?

Even though many CSCRS activities slowed down during this period as we prepare for the end of the grant, we still kept very busy. Selected highlights for this performance period include:

- Planned for the Safe Mobility Conference, and co-hosted the event in March 2024 in Chapel Hill, NC, with CSCRS partner AAA Foundation for Traffic Safety (AAAFTS).
- Engaged in around 30 activities at the 103rd Transportation Research Board (TRB) Annual Meeting in Jan. 2024.
- Held the fifth Safety Sunday @ TRB reception in conjunction with the TRB Annual Meeting in Jan. 2024.
- Held the last in-person CSCRS Advisory Board meeting in conjunction with the TRB Annual Meeting in Jan. 2024.
- Selected the seventh CSCRS Outstanding Student of the Year, Joe Beck of the University of Tennessee (UTK), who was honored at the Council of University Transportation Center's (CUTC's) Annual Outstanding Student of the Year Awards ceremony in Jan. 2024.
- Professional Development and Outreach Program Manager, Jennifer Palcher-Silliman, honored with the 2023 CUTC Award for Administrative Leadership during the same CUTC Awards Banquet.
- Prepared for the fourth annual NC Vision Zero Leadership Team Institute in June 2024.
- Generated several CSCRS research-related peer-reviewed publications and presentations.
- Taught nine transportation safety-related university courses and engaged hundreds of K-12, undergraduate, graduate, and doctoral students in CSCRS research, education, and professional development projects.
- Continued closing out CSCRS research projects.

The bulleted sections below describe the accomplishments according to specific goals and objectives of CSCRS.

Goal 1:

To support Goal 1—ensuring that Safe Systems and systems science principles and approaches are shared, understood, and adopted by traffic safety professionals—we performed activities related to the following objectives:

Objective 1-1: Conduct research to generate a model(s) for what a Safe Systems approach, enhanced with systems science tools, can look like now and in the future and identify promising policies/practices that can be adopted to reduce fatalities and serious injuries.

All work on research projects that meet this objective is complete.

In addition, CSCRS researcher Seth LaJeunesse, University of North Carolina (UNC) Highway Safety Research Center (HSRC), teamed up with colleagues from the AAAFTS, Johns Hopkins Bloomberg School of Public Health, and UNC Hussman School of Journalism and Media on [“A Safe System Guide for Transportation: Sharing this Approach to Lead Your Community to Action”](#) released in November 2023. This report provides guidance on how to frame Safe System interventions and policies with the public.

Objective 1-2: Lead training, outreach, and professional development related to Safe Systems approach and related policies and practices.

Key examples:

- CSCRS was deeply involved in planning for the Safe Mobility Conference, and co-hosted the event in March 2024 in Chapel Hill, NC, with co-host/CSCRS partner AAA Foundation for Traffic Safety. The event exceeded attendance expectations with 179 participants. Key activities included:
 - Securing plenary, workshop, and keynote speakers, and coordinating session planning.
 - Moderating sessions.
 - Managing the student poster contest and judging process.
 - Setting up certification maintenance credits through the American Planning Association/American Institute of Certified Planners (APA/AICP).
 - Assisting with the conference venue and off-site event locations.
 - Organizing a showcase of North Carolina university-based K-12 transportation safety programs.
 - Attending regular meetings with the planning committee.
- CSCRS research was showcased in dozens of workshops, lectern presentations, posters, and more at the TRB Annual Meeting in Jan. 2024. Examples include:
 - The Land Use–Transportation Feedback Loop: New Data and Insights
 - Transportation Safety Management Systems from Start to Finish
 - New Research in Transportation Equity
- CSCRS researchers worked on planning for the annual NC Vision Zero Leadership Team Institute in June 2024.

Objective 1-3: Integrate Safe Systems principles into other road safety/public health/planning initiatives.

- CSCRS’s UNC team of the HSRC, Injury Prevention Research Center (IPRC), and the Department of City and Regional Planning (DCRP) continued its leadership of the Road to Zero Coalition’s Safe System Working Group. CSCRS researchers at UNC have been members of the working group for years under the leadership of the Institute of Transportation Engineers and have supported the coalition’s effort to compile Safe System resources and embed the Safe System concept into roadway safety practice. The group is collaborating with other working groups under the Road to Zero Coalition to advance the discussion on speed safety cameras, equity, and effective collaborations for safety. Other members of the working group include several CSCRS Advisory Board members.

Objective 1-4: Facilitate states and cities in implementing a Safe Systems approach in different contexts, utilizing the tools and research from CSCRS.

CSCRS continues to engage with multiple agencies, particularly in consortium member states and cities, to determine the needs of state and local governments in implementing Safe Systems. CSCRS has representatives on the North Carolina Executive Committee for Highway Safety; work on this committee has included creating white papers for the NC Strategic Highway Safety Plan.

For additional specific projects bridging research to local practice, see Objective 2-3.

Goal 2:

To support Goal 2—ensuring that cutting-edge research, tools, data, and resources compatible with a Safe Systems approach are developed and utilized—we performed activities related to the following objectives:

Objective 2-1: Perform road safety research that explores core safety issues and transformational changes (from technology, ride-sharing services, etc.) and integrates public health concepts and methods.

Work continued on this project:

- [R36](#): Laying the Groundwork for a National Pedestrian Injury Surveillance System
 - PI: Katherine Harmon, HSRC
 - This project informed multiple CRP proposals focused on the improvement of pedestrian data.

All work on other research projects that meet this objective is complete.

Objective 2-2: Develop research-driven tools, resources, and data sets to support problem identification and understanding.

All work on research projects that meet this objective is complete.

Objective 2-3: Translate research knowledge to support the development of comprehensive programs, policies, and practices that are proven to reduce fatalities and severe injuries.

All work on research projects that meet this objective is complete.

Objective 2-4: Broadly disseminate research products and findings, with emphasis on reaching new and non-traditional audiences.

Objective 1-2 covered efforts to disseminate research, specifically relating to systems-oriented projects. Key sessions at the Safe Mobility Conference that covered systems topics included:

- AcciMapping: A Systems Tool for an Enhanced Understanding of Pedestrian Safety
- Safe System: Current State & Future Outlook
- Delivering Safe Transportation Systems for All Road Users
- Safe Speeds for a Safe Transportation System
- Building a Healthy Traffic Safety Culture

Also, Seth LaJeunesse shared statistics and discussed the Vision Zero movement in North Carolina during [a virtual roundtable discussion](#) with GoTriangle and NC VisionZero in October 2023. A recording of [the Mission Impossible: Bike and Pedestrian Safety Webinar is available now](#).

Goal 3:

To support Goal 3—to ensure that a growing body of students and future leaders are engaged and well-trained in road safety principles, Safe Systems approaches, and systems science methods—we performed activities related to the following objectives:

Objective 3-1: Develop and deliver courses at consortium member universities that integrate CSCRS concepts. Highlights from spring 2023 to fall 2023 that include graduate courses:

- Florida Atlantic University (FAU) courses:
 - Designing the City. Instructor: Eric Dumbaugh. (58 students)
 - Introduction to Transportation. Instructor: Eric Dumbaugh. (16 students)
- University of California, Berkeley (UCB) courses:
 - Graduate course: Public Health Injury Prevention and Control. Instructor: Glenn Shor. (10 students)
 - Upper Division course on Advanced Topics in Urban Studies. Instructor: Daniel A Rodriguez. (49 students)
- DCRP course:
 - Complete Streets. Instructor: Tab Combs. (22 students)
- University of Tennessee, Knoxville (UTK) courses:
 - Intelligent Transportation Systems. Instructor: Asad Khattak.

- Public Transit Planning and Operations. Instructor: Candace Brakewood. (20 students)
- Transportation Geometric Design. Instructor: Chris Cherry. (32 students)
- Transportation Planning. Instructor: Asad Khattak. (21 students)

Objective 3-2: Engage students through student-directed activities and professional opportunities.

This reporting period featured several CSCRS student accomplishments. Examples:

- As part of the annual UNC Research Week, HSRC hosted a student-led research presentation on October 26, 2023. The session, [“Critical climate impacts on transportation: NC student researchers explore climate change, transportation resiliency and safety,”](#) featured student researchers including Kimmy Hansen, a master’s student in UNC’s Department of City & Regional Planning, a CSCRS consortium partner.
- The Safe Mobility Conference featured a student poster contest with 13 research posters covering a wide variety of topics including the winning posters:
 - First place: “Pedestrian Safety: Speed Limit versus Vehicle Type,” by Saurav Parajuli, UTK
 - Second place: “Impacts of the 2021 Medicaid Transformation On The Riders Of Community Transit Organizations: A Qualitative Analysis,” by Rachel “Annie” Oommen, DCRP
 - Third place: “Nighttime Safety of Pedestrians: The Role of Pedestrian Autonomous Emergency Braking Systems,” by Nastaran Moradloo, UTK

Table 1 describes additional key student engagement and awards offered during this reporting period.

Table 1: Select CSCRS student engagement activities

UNC	HSRC supported 1 PhD student in collaboration with IPRC.
	Interviewed 3 master's-level students and selected 1 for a practicum experience this summer with the Vision Zero Leadership Institute and to work on this project using the plan database.
UTK	4 graduate students worked with Asad Khattak (faculty in Civil & Environmental Engineering).
	1 engineering Ph.D. student defended his dissertation (with Dr. Khattak as primary advisor).

Objective 3-3: Develop mentorship and internship opportunities for students to engage in critical thinking about road safety issues from a variety of perspectives and connect with traditional and non-traditional partners.

CSCRS continued to update its [Jobs Board](#) of student and post-graduation opportunities, and share such opportunities with the whole consortium.

Objective 3-4: Provide exposure to road safety principles in K-12 settings, to enhance early interest in traffic safety.

During this reporting period, CSCRS staff had multiple meetings with the NCDOT HBCU Outreach Director and partners North Carolina A&T State University (NCA&T) about opportunities to partner on K-12 education. Nick Allen of NCA&T presented at an HSRC Lunch & Learn session on the high school Summer Transportation Institute program, and he also hosted a table at the Safe Mobility Conference with information on the program.

- The HSRC team hosted an interactive education activity booth at the Durham Public Schools Acceler8 Career Exploration Day on October 24, 2023. Approximately 2,000 students got the chance to design their own safe roads and see a crash simulation with dolls and skateboards.
- FAU participated in A.D. Henderson & FAU High School Career Day in February 2024, presenting on transportation as a career for middle-school students. Approximately 80 students attended.
- Elyse Keefe, IPRC, talked to a local preschool class in February 2024 about the importance of getting around safely and engaged the kids with designing a safe street.

- CSCRS made plans to hold an interactive safety session at Chapel Hill’s Smith Middle School during the school’s STEAM Day.

1.3 What opportunities for training and professional development has the program provided?

Myriad teaching, training, and learning opportunities have been highlighted in this report (see Table 1).

1.4 How have the results been disseminated?

Results are being disseminated in accordance with the CSCRS [Technology Transfer Plan](#). Consortium members coordinated to co-promote CSCRS news/updates on their websites, in newsletters, and on social media.

CSCRS staff updated project descriptions, titles, and end dates on the [CSCRS website](#) and in the TRB Research in Progress (RiP) Database, tagged as UTC research. Project-related publications and presentations from this reporting period are listed in the Products section.

1.5 What do you plan to do during the next reporting period?

The next reporting period (4/1/24-9/30/24) will be the final SAPR reporting period for CSCRS, so during that time we will continue working on closing out the CSCRS grant. Examples of what we will do include:

- **Research activities planned:**
 - Completion, posting, and reporting of CSCRS research projects will conclude.
 - Work will continue on additional projects supported with matching funds.
- **Professional development activities planned:**
 - Preparation for the fourth annual NC Vision Zero Leadership Team Institute in June 2024.
- **Teaching and student enrichment activities planned:**
 - Continue exploring and implementing K-12 activities.
 - Teaching several university courses, as well as incorporating CSCRS research findings and opportunities into other/existing courses and seminars.

In addition to activities specific to the 3 goals, we will continue conducting administrative functions that support all Center activities, including sending out newsletters, managing the Center’s website and communications platforms, and responding to USDOT or other requests.

2. Participants and Collaborating Organizations

2.1 What organizations have been involved as partners?

The following organizations have been involved as CSCRS partners:

Table 2: Select CSCRS collaborator and sponsor organizations

Business
Accenture (Collaborative Support)
AT&T Fleet Complete, Atlanta, GA (Financial Support)
Bird, Inc. (Collaborative Support)
PhD Posters, Durham, NC (Financial Support)
Rovélo Creative, Toronto, Canada (Collaborative Support)
SoftServe, Inc., Austin, TX (Collaborative Support)
Toyota Motor North America, Saline, MI (Financial Support)
Uber, San Francisco, CA (Financial Support)
VHB, Watertown, MA (Financial Support)
Volkswagen Group of America, Herndon, VA (Collaborative Support)

Foundation
AAA Foundation for Traffic Safety, Washington, DC (Collaborative Support)
de Beaumont Foundation, Bethesda, MD (Collaborative Support)
Health Foundation of South Florida, Miami, FL (Collaborative Support)
John D. and Catherine T. MacArthur Foundation, Chicago, IL (Financial Support)
Local Government
City of Deerfield Beach, FL (Collaborative Support)
Town of Chapel Hill Staff, Chapel Hill, NC (Collaborative Support)
Other Non-Profit
American Institute of Architects, Miami, FL (Collaborative Support)
America Walks, Portland, OR (Collaborative Support)
American Planning Association, Chicago, IL, and Washington, DC (Collaborative Support)
American Public Health Association, Washington, DC (Collaborative Support)
Association of Pedestrian and Bicycle Professionals, Lexington, KY (Collaborative Support)
Broward Metropolitan Planning Organization, Fort Lauderdale, FL (Collaborative Support)
Dream in Green, Miami, FL (Collaborative Support)
Greater Nashville Regional Council, Nashville, TN (Collaborative Support)
Institute of Transportation Engineers, Washington, DC (Collaborative Support)
Insurance Institute for Highway Safety, Vehicle Research Center, Ruckersville, VA (Collaborative Support)
The Miami Center for Architecture and Design, Miami, FL (Collaborative Support)
Miami-Dade Transportation Planning Organization, Miami, FL (Collaborative Support)
Mobility Lab, Arlington, VA (Collaborative Support)
National Association of City Transportation Officials, New York, NY (Collaborative Support)
National Cooperative Highway Research Program, Washington, DC (Financial Support)
National Indian Justice Center, Santa Rosa, CA (Collaborative Support)
National Local Technical Assistance Program Association, US (Collaborative Support)
North Carolina Center for Automotive Research, Garysburg, NC (Collaborative Support)
Palm Beach Transportation Planning Agency, West Palm Beach, FL (Collaborative Support)
Palm Beach Planning Congress, Palm Beach, FL (Collaborative Support)
The Road to Zero Coalition/The National Safety Council, Itasca, IL (Financial and Collaborative Support)
Transportation Research Board Standing Committee on Pedestrians, Washington, DC (Collaborative Support)
Safe States, Atlanta, GA (Collaborative Support)
Transportation Research Board Standing Committee on Transportation Safety Management, Washington, DC (Collaborative Support)
Urban Impact Lab, Miami FL (Collaborative Support)
Vision Zero Network, San Francisco, CA (Collaborative Support)
WTS International, Washington, DC (Collaborative Support)
School District
Knox County School District, Knoxville, TN (Collaborative Support)
State Government
California Emergency Medical Systems Authority (Collaborative Support, Data Request)
California Center for Medical Outcomes, California Department of Public Health, Sacramento, CA (Collaborative Support, Data Request)
Florida Department of Transportation (Collaborative Support)
North Carolina Division of Public Health, Raleigh, NC (Collaborative Support)
North Carolina Department of Transportation, Raleigh, NC (Financial Support)
North Carolina Governor's Highway Safety Program, Raleigh, NC (Collaborative and Financial Support)
North Carolina Turnpike Authority, Raleigh, NC (Collaborative Support)
Tennessee Department of Transportation, Nashville, TN (Matching Request and Data)
Tennessee Department of Safety and Homeland Security, Nashville, TN (Data Request)
Tennessee Department of Health, Nashville, TN (Data Request)

Tennessee Technology Access Program, Nashville, TN (Collaborative Support)
U.S. Agency
National Science Foundation, Washington, DC (Sponsor of Projects)
Centers for Disease Control and Prevention, Atlanta, GA (Collaborative Support)
U.S. Facility
Oak Ridge National Laboratory, Oak Ridge, TN (Collaborative Support)
U.S. Government
U.S. Department of Energy, Washington, DC (Collaborative Support)
U.S. Department of Transportation, Washington, DC (Sponsor of Projects and Collaborative Support)
University
Duke Initiative for Science & Society Science Policy Tracking Program, Durham, NC (Financial Support)
East Tennessee State University, Johnson City, TN (Collaborative Support)
Johns Hopkins Center for Injury Research & Policy, Baltimore, MD (Collaborative Support)
North Carolina A&T State University, Greensboro, NC (Collaborative Support)
North Carolina Central University, Durham, NC (Collaborative Support)
North Carolina State University Institute for Transportation Research and Education, Raleigh, NC (Collaborative Support)
Planning Society @ FAU, Boca Raton, FL (Collaborative Support)
Queensland University of Technology (CARRS-Q) (Collaborative Support)
Renaissance Computing Institute, Chapel Hill, NC (Collaborative Support)
San Diego State University, San Diego, CA (Collaborative Support)
Tennessee Technological University, Cookeville, TN (Collaborative Support)
University of Aveiro (Collaborative Support)
University of Miami (Collaborative Support)
The University of New Mexico, Albuquerque, NM (Collaborative Support)
University of Tennessee, Chattanooga, TN (Collaborative Support)
University of Wisconsin-Milwaukee, Milwaukee, WI (Collaborative Support)
Various Jiaotong Universities in China (Collaborative Support)

2.2 Have other collaborators or contacts been involved?

Nothing to report beyond the table above.

3. Outputs

CSCRS included 2 performance measures related to outputs in its Technology Transfer Plan:

- Organize and hold conferences and/or other events through 2023 and 2024.
- Author annual journal manuscripts, publications, articles, posts, media stories, etc.

Sections 3.1-3.3 present the considerable number of outputs related to CSCRS research and tech transfer.

3.1 Publications, conference papers, and presentations

The following are select highlights of publications produced by CSCRS team members:

Table 3: Select CSCRS publications

Peer-Reviewed Publications
Ahmad N., R. Arvin, & A. Khattak, How is the duration of distraction related to safety-critical events? Harnessing naturalistic driving data to explore the role of driving instability, Journal of Safety Research, Volume 85, pp. 15-30, 2023.
Ahmad, N., Wali, B., & Khattak, A. Heterogeneous Ensemble Learning for Enhanced Crash Forecasts – A Statistical & Machine Learning based Stacking Framework. Journal of Safety Research, Volume 84, pp. 418-434, 2023.

Evenson KR, Kintigh JM, Neuroth LM, LaJeunesse S, and Naumann RB. Public health involvement in United States' Vision Zero initiatives. <i>J Public Health Management Practice</i> . 2024; in press.
Gu Y., H. Zhang, L. Han, A. Khattak, Modeling spatiotemporal heterogeneity in interval-censored traffic incident time to normal flow by leveraging crowdsourced data: A geographically and temporally weighted proportional hazard analysis, <i>Accident Analysis & Prevention</i> 195, 107406, 2024
H. Haule and E. Dumbaugh. Examining Factors Contributing to Motorcycle Collisions with Left-turning Vehicles at Urban Intersection Locations. <i>Transportation Research Record: Journal of the Transportation Research Board</i>
Keefe EM, Naumann RB, Evenson KR, LaJeunesse S, Heiny S, and Lich KH. Using an adapted Community Readiness Assessment to inform Vision Zero and safe systems action. <i>Transportation Research Interdisciplinary Perspectives</i> . 2024; 23, 100992. https://doi.org/10.1016/j.trip.2023.100992
Khattak Z. W. Li, T. Karnowski, & A. Khattak, The role of driver head pose dynamics and instantaneous driving in safety critical events: Application of computer vision in naturalistic driving, <i>Accident Analysis & Prevention</i> , 200, 107545, 2024.
Khattak Z., & A. Khattak, Using behavioral data to understand shared mobility choices of electric and hybrid vehicles, <i>International Journal of Sustainable Transportation</i> , 2023, 17:2, pp. 163-180.
Mahdinia I. A. Patwary, & A. Khattak Predicting damages to remainder parcels in right-of-way acquisitions for expanding transportation infrastructure: Using a truncated finite mixture model, <i>Forthcoming, ASCE's Journal of Infrastructure Systems</i> , 2024.
Mohammadnazar A., Z. Khattak, & A. Khattak, Assessing driving behavior influence on fuel efficiency using machine-learning and drive-cycle simulations, <i>Transportation Research Part D: Transport and Environment</i> 126, 104025, 2024
Patwary A., & A. Khattak, Crash harm before and during the COVID-19 pandemic: Evidence for spatial heterogeneity in Tennessee, <i>Accident Analysis & Prevention</i> , Volume 183, 106988, 2023.
Patwary AL., & A. Khattak, Explainable Artificial Intelligence for Decarbonization: Alternative Fuel Vehicle Adoption in Disadvantaged Communities, <i>Forthcoming, International Journal of Sustainable Transportation</i> , 2024.
Patwary AL., A. Haque, I. Mahdinia, & A. Khattak, Investigating transportation safety in disadvantaged communities by integrating crash and environmental justice data, <i>Accident Analysis & Prevention</i> 194, 107366, 2024.
Taylor, N. L., Fliss, M.D., Schiro, S.E., Harmon, K. J. Comparative analysis of injury identification using KABCO and ISS in linked North Carolina Trauma Registry and crash data. <i>Traffic Injury Prevention</i> . Under review.
Thapa D., S. Mishra, A. Khattak, & M. Adeel, Assessing driver behavior in work zones: a discretized duration approach to predict speeding, <i>Accident Analysis & Prevention</i> 196, 107427, 2024.
Usman, S., Khattak, A., Chakraborty, S., Mahdinia, I., Tavassoli, R. (2023). Detection of distracted driving through the analysis of real-time driver, vehicle, and roadway volatilities, <i>Forthcoming, Journal of Transportation Safety and Security</i> .

3.2 Policy papers

Eric Dumbaugh, FAU, produced the policy paper “Refining C3 Context-Classification Criteria for Low-Income and Minority Populations” for the Florida Department of Transportation in December 2023.

3.3 Website(s) or other Internet site(s)

- In December 2023, CSCRS posted several new key reports focusing on tools and applications for strengthening Safe Systems and Vision Zero efforts on its [Creating Safer Systems and Healthier Communities: Resource Hub](#).
- The UTK team provided multiple training resources at the sites ctr.utk.edu and tesp.utk.edu/ite/.
- Other CSCRS resources were updated with new data and information during this period:
 - Micromodes.org
 - [Shifting Streets Dataset](#)
 - [Vision Zero Plan Guide repository](#).
 - [National Pedestrian and Bicycle Safety Data Clearinghouse](#).

3.4 New methodologies, technologies, or techniques

The matching project “Predicting Automated Vehicle Safety in an Uncertain Future,” which continued during this period, aims to develop a configurable model and interface representing how the numbers of crashes and fatal and nonfatal injuries change over time as a result of different advanced driver-assistance system (ADAS) diffusion scenarios on U.S. roadways.

3.5 Inventions, patent applications, and/or licenses

None to report for this period.

3.6 Other products

None to report for this period.

4. Outcomes

CSCRS included 2 performance measures related to outcomes in its Technology Transfer Plan:

- Average annual number of opportunities/instances to share transportation safety expertise at conferences, professional meetings and through media. (Please see publications listed in Section 3.1 and media described in Section 4.1.)
- Annual number of adoptions, use or reference to CSCRS products, or influence on national or state research agendas (see Section 4.6).

4.1 Increased understanding and awareness of transportation issues

CSCRS researchers and students engaged with a variety of media outlets. Key examples:

- In December 2023 Seth LaJeunesse, HSRC, participated in an Association of Metropolitan Planning Organizations [podcast focused on traffic safety data](#).
- Eric Dumbaugh, FAU, was interviewed by ABC7 Chicago for the January 20, 2024, story, [“Why do we have right-on-red, and is it time to get rid of it?”](#)

4.2 Passage of new policies, regulation, rulemaking, or legislation

CSCRS has engaged in several activities in this area:

- CSCRS Director Laura Sandt and researcher Katie Harmon, both with HSRC, were part of the team who worked on the [“2023 North Carolina State Health Improvement Plan,”](#) released in October 2023, which identified best practices for North Carolina communities to improve health.
- The Tennessee Highway Safety Office, assisted by UTK, held its annual Monitoring Refresher Course in Nashville. This training was attended by Tennessee Department of Safety and Homeland Security senior leadership, program managers, management, and leadership and staff from the TDOSHS Internal Audit Division.
- FHWA continued the [Vision Zero Community Pairing Program](#), modeled after CSCRS’s work in partnership with the Governor’s Highway Safety Program; the program recently solicited new applications for communities interested in participating.

4.3 Increases in the body of knowledge

Already mentioned are 3 key activities during this period designed to further CSCRS’s Safe System knowledge:

- Planning and hosting for the Safe Mobility Conference, in March 2024, with co-host/CSCRS partner AAFTS. This event was a first-of-its-kind opportunity for professionals and students from industry, academia,

government, and advocacy organizations to connect, share information, and identify challenges, solutions, and best practices geared toward achieving safer mobility for all road users.

- Planning for the fourth annual NC Vision Zero Leadership Team Institute in June 2024. This event provides multi-sector teams with best practice tools and approaches to help them move toward effective Vision Zero planning and implementation.

4.4 Improved processes, technologies, techniques, and skills in addressing transportation issues

The matching project, “Predicting Automated Vehicle Safety in an Uncertain Future,” developed a configurable model and interface representing how the numbers of U.S. crashes and fatal and nonfatal injuries change over time.

4.5 Enlargement of the pool of trained transportation professionals

During this reporting period, the results of these efforts are shown with several CSCRS researchers showcasing their impressive expertise in multiple ways (see Objective 3-2 for more info).

4.6 Adoption of new technologies, techniques, or practices

We continued releasing the findings through [webinars](#) and other media from the 2023 FHWA report “Improving Pedestrian Safety on Urban Arterials: Learning from Australasia,” based on the FHWA Global Benchmarking Program tour of Australia and New Zealand Laura Sandt participated in.

5. Impacts

CSCRS included 2 performance measures related to impacts in its Technology Transfer Plan:

- Annual instances integrating CSCRS research results into agency or stakeholder practices that demonstrate use of research results in practice (see Section 5.1).
- Annual instances integrating CSCRS research results into organizational/workforce capacity building that demonstrate use of research results in capacity building activities conducted by local, regional, state, or national level agencies (see Section 5.2).

5.1 Impact on the effectiveness of the transportation system

The fresh approach CSCRS has taken over the last 7 years to apply public health principles and systems science to provide more effective tools for solving complex safety challenges advances Safe System concepts through research, education, workforce development, and technology transfer. Seeing these concepts codified into state and national legislation and policy is a testament to the effectiveness of CSCRS’s efforts.

5.2 Impact on the adoption of new practices, or instances where research outcomes have led to the initiation of a start-up company

As mentioned, we continued releasing the findings through [webinars](#) and other media from the 2023 FHWA report “Improving Pedestrian Safety on Urban Arterials: Learning from Australasia.”

5.3 Impact on the body of scientific knowledge

Using the numerous and varied methods listed previously, CSCRS is continuing efforts to contribute to the body of knowledge surrounding Safe Systems and systems-science approaches to road safety.

Evidence of our impact on the body of scientific knowledge can be found through other honors and appointments that recognize our expertise and provide opportunities to influence scientific discourse. Key examples:

- In November 2023 [it was announced](#) that CSCRS Director Laura Sandt and Caroline Mozingo were named permanent co-directors of HSRC. Their appointments represent the fifth leadership change in HSRC's nearly 60 years of operation, and the co-director structure is a first of its kind for the Center. Sandt and Mozingo have joined forces to lead HSRC efforts to improve the safety, sustainability, and efficiency of all surface roadway transportation modes.
- Sandt has also served on the following committees or technical advisory groups:
 - NCDOT Executive Committee for Highway Safety
 - NCDOT Fully Automated Vehicle Task Force
 - NCDOT State Freight Advisory Committee
 - Chapel Hill, NC, Vision Zero Executive Committee
 - FHWA *Safe System Approach for the Urban Core* project Technical Panel
 - FHWA *National Complete Streets Assessment* Project Technical Review Panel
- Julia Griswold [was named](#) the new director of UCB's Safe Transportation Research and Education Center (SafeTREC) in November 2023.
- Eric Dumbaugh, FAU, has served in roles for the following groups:
 - World Health Organization's Powered Two-Wheeler (PTW) Technical Advisory Group
 - Academic Advisory Group for the UN's 4th Ministerial Conference on Road Safety
 - Broward MPO working group developing a safety framework for a "smart corridor" pilot project
- Katie Harmon, HSRC, has been involved in the following endeavors:
 - Serving as a review editor for the *Journal of Safety Research* and *Frontiers in Public Health*
 - Member of the NC Traffic Records Coordinating Committee
- Nancy Lefler, HSRC, has served as co-chair of the NC Traffic Records Coordinating Committee.
- Asad Khattak, UTK, continued serving as a Board Member of TennSMART, a consortium of transportation CEOs, research institutions, and government officials. Dr. Khattak's leadership positions also include:
 - Editor-in-chief of the *Journal of Intelligent Transportation Systems*
 - Associate editor of the *International Journal of Sustainable Transportation*
 - Member of TRB's Standing Committee on Traveler Behavior and Values
 - Special adviser to the *Journal of Transportation Safety & Security*
 - Advisory board member of *Analytic Methods in Accident Research*
- Chris Cherry, UTK, leadership activities include:
 - Leading a [consortium of international researchers](#) on micromobility research, including safety research.
 - Member of the following committees:
 - City of Knoxville Vision Zero Working Group
 - SAE's Powered Micromobility Committee
 - Editor positions for:
 - *Transportation Research Part D: Transport and Environment*
 - *Journal of Cycling and Micromobility Research*
 - *International Journal of Sustainable Transportation*
- Candace Brakewood, UTK, is an associate editor of the *Journal of Public Transportation*.
- Jennifer Palcher-Silliman, CSCRS's Professional Development and Outreach Program Manager, was honored with the 2023 Council of University Transportation Centers (CUTC) Award for Administrative Leadership.

5.4 Impact on transportation workforce development

Over the 7 years that CSCRS has been in existence, we have continually reached new audiences through a variety of workforce development activities including conferences, webinar series, presentations, and more. We have worked with hundreds of students, from K-12 to doctoral level, to inspire new generations of transportation safety professionals to think ahead to a Safe System for transportation.

6. Changes/Problems

6.1 Changes in approach and reasons for change

Nothing to report.

6.2 Actual or anticipated problems or delays

Nothing to report.

6.3 Changes that have a significant impact on expenditures

Nothing to report.

6.4 Significant changes in use or care of animals, human subjects, and/or biohazards

Nothing to report.

7. Special Reporting Requirements

Nothing to report. This entire report is available on the [CSCRS website](#).