Toyota’s Collaborative Safety Research Center to Launch New System Usability Research with Partners including University of Michigan and State Farm

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CSRC

Collaborative Safety Research Center

TOYOTA

ANN ARBOR, Mich. (November 12, 2020) – Marking World Usability Day, Toyota’s Collaborative Safety Research Center (CSRC) today announced four new research projects focused on enhancing advanced technology system designs to be intuitive, easy to understand and to safely engage with drivers. The new projects, undertaken in partnership with University of Michigan, Miami University, University of Nebraska, Texas A&M Transportation Institute and State Farm will support and inform a transition to a safe future of mobility.

Toyota’s CSRC is investing $1 million in research projects focused on creating systems that are safe and efficient. These projects will focus on enabling safer and more efficient mobility systems by exploring driver behavior in different environments, monitoring driver health and identifying driver error when interacting with advanced driver assistance systems (ADAS) technologies.

Data from each project will be shared across the institutions to help speed research, with the results made public to support the advancement of auto safety industrywide.

“These studies will help us better align advanced vehicle technologies with the driver’s needs and allow us to design and develop systems that are ultimately intuitive and easy for drivers to use,” said Jeff Makarewicz, group vice president, Toyota Motor North America, Advanced Mobility Research & Development. “By working with our partner institutions, and openly sharing our insights with the broader automotive, government, NGO, and technology communities, we believe we can help progress society’s acceptance of these new and promising technologies.”

Since its launch in 2011, CSRC has initiated 63 research projects with 31 partner universities, publishing more than 400 papers and presenting at multiple industry conferences. CSRC research has made meaningful contributions to auto safety industrywide, including studies into human factors on vehicle safety and the efficacy of active and passive safety systems, as well as the collection of driving safety data and development of new tools to analyze that data.

The new CSRC research projects include:

Title	Collaborator	Description
Roadmanship Integrated Advanced Driver Assistance Systems (ADAS)	University of Michigan	Determine how roadmanship characteristics (e.g., driving in a courteous manner in addition to being safe) can be used to help define ADAS or automated driving design criteria across a number of driving contexts (e.g., different weather conditions, different levels of traffic congestion).
Investigation of Postural Response Time to Avoid a Fall	Miami University	Determine if it is possible to design an alert to autonomous shuttle riders to adjust their balance and prepare for a sudden stop and avoid a fall.
Feasibility and Utility of the Car as a Platform for Indexing Driver Health and Disease	University of Nebraska	Assess the feasibility and utility of monitoring the driver to detect health and disease and provide a high-level innovative technology framework that uses sensors in available and future vehicle technology to detect driver health and disease, enabling safer and more efficient use of mobility systems.
Identifying Deviations from Normal Driving Behavior	Texas A&M Transportation Institute and State Farm	Demonstrate the utility and value of integrated multi-domain data (e.g., vehicle, driver, infrastructure, crash record) in identifying driver behaviors, including driver errors and poor performance when interacting with modern ADAS systems.

For more information on Toyota's Collaborative Safety Research Center, click here.