TRANSPORTATION CENTER

MRI Abstract

Acquisition of DriveSafety DS-600c High-Fidelity Driving Simulator

Principle Investigator: Professor Nancy Grugle
Grant Amount:
Time Period:

Cleveland State University acquired the DriveSafety DS-600c Research Simulator to conduct research on a wide range of projects, many of which will be geared toward human factors influences in work zone safety, a significant emerging area of research. The DS-600c is a fully integrated, high performance, high fidelity driving simulation system. The DS-600c system includes multi-channel audio/visual systems, a minimum 180° wraparound display, full-width automobile cab (Ford Focus) including windshield, driver and passenger seats, center console, dash and instrumentation, and real-time vehicle motion simulation. The software includes Vection real-time simulation software for simulating vehicle dynamics, traffic, environmental conditions, and other features that provide a realistic driving experience. In addition, the system collects real-time driving performance data that can be tailored to the researchers needs.

Research projects of particular interest include the validation of the DS-600c in driver-related work zone crashes, near-crashes, and incidents; distracted driving, and pre-construction work zone safety analyses. In addition, faculty from the University's Department of Health Sciences and Department of Psychology has also expressed a strong interest in using the driving simulator.
In addition to research projects, a variety of research training efforts will emerge, many of which are focused on Cleveland State University's new University Transportation Center for Work Zone Safety. Undergraduate and graduate students will have the opportunity to use the simulator for course-affiliated laboratory assignments in industrial engineering, civil engineering, and other related disciplines. Graduate students will conduct both master's and doctoral level human factors and civil engineering research with the simulator. Freshman engineering students will participate in classroom exercises with the high-fidelity simulator as part of an introduction to engineering course to encourage scholarship and foster excitement about their future engineering education and career opportunities.

The acquisition and installment of the DS-600c Driving Simulator has the potential to make a significant number of impacts on Cleveland State University and its region. First, it will serve as a tool to help in the recruitment of students into the engineering programs. Second, as the Industrial and Manufacturing Engineering department evaluates its offerings and how best to make its programs relevant to a new generation of engineers, the driving simulator and the University Transportation Center will play a critical and central role. Third, with the beginning of the new University Transportation Center, a critical piece of equipment is now available to support new research efforts from multidisciplinary teams.