Industrial & Systems Engineering
Seminar Announcement

Analysis and Redesign of Police Vehicle Mobile Computer Terminal for Minimizing Officer Driving Distraction

Maryam Zahabi, PhD Candidate
Industrial and Systems Engineering
North Carolina State University

Abstract: Although the effect of in-vehicle distraction on driver performance and safety has been documented in many studies, few investigations have focused on distraction in emergency vehicles. However, crash reports from various states in the U.S. have shown high numbers of crashes, especially in law enforcement situations. Such crashes have not only been attributed to the need for officers to drive at high speeds in emergencies, but to make use of in-vehicle technologies especially mobile computer terminals (MCTs) while driving. Although previous studies found that MCTs are not designed for use while a vehicle is in motion, many officers confirm the use of these technologies while driving. The objectives of this study were to identify the perceived importance and frequency of police MCT tasks, quantify the visual and cognitive demands of high importance and high frequency tasks, propose an enhanced MCT interface design, and validate the design in a driving simulation study. Results showed that even basic usability changes of MCT interfaces could reduce driver distraction and increase officer safety during police operations.

Bio: *Maryam Zahabi* is a doctoral candidate in the Edward P. Fitts Department of Industrial and Systems Engineering at North Carolina State University. She received her MS in Industrial and Systems Engineering in 2013 from Sharif University of Technology (Iran). Maryam's primary research in human-systems engineering area is focused on theory and applications of human factors in transportation and healthcare. She has been involved in several projects including: (1) analysis and redesign of police mobile computer terminals to reduce officer driving distraction; (2) effect of on-road signage on driver distraction and attention allocation; (3) usability evaluation and interface design of electronic medical records; (4) effect of physical load on cognitive performance; (5) effect of interruptions in assembly task performance; and (6) enhancements in hazard analysis and risk assessment methodologies for human-in-the-loop systems.

Tuesday, February 7, 2017
1:30 – 2:20 p.m.
MEB 106