

Industrial & Systems Engineering at the University of Florida and a Focus on Human-Automation Interaction Research

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Abstract: In this talk, I will provide information on the current state of the Department of Industrial and Systems Engineering (ISE) at the University of Florida (UF), including faculty, research thrusts and laboratories, as well as funding and some current projects. The second part of the talk will focus on human factors issues in adaptively automated systems, with shifting responsibilities between human and machine, as well as description of qualitative and quantitative approaches to modeling implications of automation on human performance. I will address design parameters for adaptive automation, including what to automate, how and when to automate, and who should maintain authority during system operations with both theoretical perspectives and some empirical insights. An example of what and how to automate will follow in the context of a complex automated life-science process. The presentation will conclude with identification of future research needs for effective adaptive automation applications. This study provides an example of one direction of research occurring through the UF ISE Department.

Bio: David Kaber is currently the Dean's Leadership Professor and Chair of the Department of Industrial and Systems Engineering in the Herbert Wertheim College of Engineering at the University of Florida (UF). Prior to joining UF, Kaber was a distinguished professor of industrial and systems engineering at North Carolina State University where he also served as the Director of Research for the Ergonomics Center of North Carolina. Kaber's primary area of research interest is human-systems engineering with a focus on human-automaton interaction, including design for levels of automation and adaptive automation in complex human in-the-loop systems. Domains of study for his research have included physical work systems, industrial safety systems, robotic systems, transportation systems and healthcare. Kaber is a senior member of IEEE and junior-past Editor-in-Chief of the *IEEE Transactions on Human-Machine Systems*. He is a fellow of Institute of Industrial Engineers and the Human Factors & Ergonomics Society. Kaber is also a Certified Human Factors Professional (BCPE) and a Certified Safety Professional (BCSP).