

# ECE Distinguished Speaker Seminar Series

## *Human-robot interaction while walking*



**Dr. Julie Adams**  
**Associate Professor**  
**Vanderbilt University**

As robotic capabilities continue to become more autonomous, there is a desire for a dismounted, walking human operator to have the ability to interact with teams of robots, while also interacting with other humans in close proximity. Most systems to date focus on providing a user with a laptop based interface with traditional mouse or touch-based interaction to interact with larger numbers of robots or using devices, such as the iPhone or gaming devices to interact with a single robot. Our research focuses on developing a system that allows the user when walking, and in the future running, to interact with teams of robots. One focus of this research is the development of multi-touch interaction capabilities that simplify interaction and reduce errors. Another focus is the best means of communicating instructions to human operators under these conditions. Our work has addressed the first challenge by developing an interaction technique termed LocalSwipes and has addressed the second challenge by developing and validating communications modalities. This presentation will

explain the challenges, our system and present recent results from a user evaluation in which participants walked around a building while completing their tasks.

### **About the Speaker:**

Dr. Julie A. Adams is an Associate Professor of Computer Science and Computer Engineering in the Electrical Engineering and Computer Science Department at Vanderbilt University. She is also the founder of the Human-Machine Teaming Laboratory. She is also an Adjunct Professor in the Department of Computing and Information Sciences at Kansas State University. Prior to joining Vanderbilt, Dr. Adams was an Assistant Professor of Computer Science at Rochester Institute of Technology. Dr. Adams has published over 50 articles in the areas of multiple robot coalition formation, distributed artificial intelligence, human-robot interaction, human-computer interaction, and complex human-machine systems. She has received the NSF Career Award for work on, "Human interaction with large numbers of unmanned vehicles." She is a member of the IEEE Systems, Man and Cybernetics Society's Executive committee, currently serving as Vice President of the Human-Machine Systems area.

**10:00AM-11:00AM**

**Wednesday, September 14, 2011**

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