Measures of workload have been developed on the basis of the various definitions, some are designed to capture the multi-dimensional aspects of a unitary resource pool (Kahneman, 1973) while others are developed on the basis of multiple resource theory (Wickens, 2002). Although many theory based workload measures exist, others have often been constructed to serve the purpose of the given experimental tasks. As a result, it is likely that not every workload measure is reliable and valid for all tasks, much less each domain. To date, no single measure, systematically tested across experimental tasks, domains, and other measures is considered a universal measure of workload. Most researchers would argue that multiple measures from various categories should be applied to a given task to comprehensively assess workload. Study 1: The goal for establishing task load manipulations for two theoretically different tasks that induce distinct levels of workload assessed by both subjective and performance measures were successful. The results of the subjective responses support standardization and validation of the tasks and demands of that task for investigating workload. Study 2: After investigating the use of subjective and objective measures of workload to identify a universal and comprehensive measure, based on the present study, the conclusion is that one does not exists. It is not to say that one will never be conceived and developed, but at this time, one does not reside in the psychometric catalog. Instead, it appears that a more suitable approach is to customize workload measures based on the task. The novel approach of measuring workload for theoretically different tasks within the same domain contributes to the theory by laying the foundation for improving methodology for researching workload. The applicable contribution of this project is a stepping-stone towards developing complex profiles of workload for use in closed-loop systems, such as human-robot team interaction.

Major: Modeling & Simulation

Educational Career:
Bachelor’s of Psychology, BS, 2007, University of Central Florida
Master’s of Modeling & Simulation, MS, 2010, University of Central Florida

Committee in Charge:
Lauren Reinerman-Jones, Chair, IST
Stephanie Lackey, IST
James Szalma, IST
Grant S. Taylor, NASA-Ames

Approved for distribution by Lauren Reinerman-Jones, Committee Chair, on June 9, 2013.

The public is welcome to attend.