

FLORIDA STATE UNIVERSITY

Investigating the Effect of Appliance Interface Design on Energy-use Behavior

PI: Paul Ward; **Co-PIs:** Ian Douglas, David Eccles

Students:

Avner Dachoach / Ph.D., Psychology (Cognitive)

Jarrett Evans / Ph.D., Psychology (Cognitive)

Jason Torof / Post-bacc, Psychology / Masters, Educational Psychology & Learning Systems

Stephanie Robertson / Ph.D., Educational Psychology & Learning Systems

Katerina Kudluckova / Ph.D., Educational Psychology & Learning Systems

Guler Aarsal / Ph.D., Educational Psychology & Learning Systems

Description: The primary objective of this research project is to identify the behavioral factors that contribute to energy in/efficiency in the home. In particular, this project was designed to (a) examine current state-of the science on behavioral factors that affect energy efficiency, (b) report on the efficiency of typical energy consuming technology used in the home as well as existing programs designed to improve efficiency, and (b) investigate the types of human-technology interactions and other behavioral factors that lead to in/efficient energy use. To achieve these objectives this project uses laboratory-based experimental and field-based methods to (i) identify interface-design factors that constrain individuals to behave in locally optimal but globally sub-optimal ways, and (ii) survey how cognitive, technological, and motivational behavioral issues affect use in the home environment.

Budget: \$163,949

University: FSU

Progress Summary

First, there is some important information to report. In August of 2010, the PI on this project, Dr Paul Ward, left FSU to take a position at another institution and was unable to continue to run the project. Dr Ward had taken on the sole responsibility for the day-to-day supervision of the student assistants. To this point, the role of the Co-PIs on the project had been to provide conceptual support on ad hoc, needs-led basis to the PI. With only 4 months remaining, it was not possible to move the project beyond the trajectory it had taken under the previous PI. Consequently, the report prepared reports mainly on the activities of the graduate students who had worked on the project prior to the PI's departure and who assumed much of the remaining work on the project.

An extensive literature review and summary were prepared. A data base of existing energy efficiency initiatives, programs and reports pertaining to energy conservation, interface design and energy-use behavior was developed. A database was created that contains Energy Project Organizations and Contacts, which contains about 20 references for organizations and contacts related to this area. A survey entitled "Energy Survey" and designed to collect data about householder energy use behavior. The graduate students working on the project administered this survey to households in the local area and received response from 30+ households. These data are currently being analyzed and the results will be submitted at least as a conference presentation but potentially as a journal article publication.

Proposals:

Dr Douglas was involved in two relevant grant applications with Charles Kilbert (UF) and Richard Feiock; one of which was NSF EFRI-SEED proposal Advanced Feedback and Control System for Net Zero Energy Homes.

