Published in final edited form as:

Proc Annu Hawaii Int Conf Syst Sci. 2014 January ; 2014: 2644-. doi:10.1109/HICSS.2014.333.

Introduction to Minitrack Evidence-Based mHealth Design and Analysis

Janet Brigham and

SRI Interntional

Benjamin Schooley

University of South Carolina

The focus of this mini-track is to address the challenges of the rapidly evolving mobile health (mHealth) field. As the mHealth landscape evolves quickly, consumers and practitioners alike are incorporating mobile devices and sensors into their daily routines in ways that were not possible just a couple of years ago. Although thousands of mobile apps present a path to significant health improvements, often in areas of critical health concern, a far smaller number are built on an evidence base of scientific data and established care guidelines, or are verified before being widely implemented. Fewer still are tested for efficacy, effectiveness, or other measures. This not only leaves healthcare professionals and consumers vulnerable to unproven methods, but it crowds out potentially useful novel approaches.

The need is pressing for mHealth applications that are evaluated with rigor in order to bring about meaningful change to the way health care is delivered. Yet, there is a parallel need for methods of evaluation across the design, development, and implementation continuum that do not hamper innovation and take into account the fast pace of technological change.

The objective of this mini-track is to address these challenges by showcasing novel methodological, conceptual, and design research studies on mHealth that: (1) evaluate the design, development, and implementation of mHealth, (2) assess the impact of mHealth applications, (3) create an evidence base, taking into account the pace of change in mHealth, and (4) develop models to better understand the evidence base for mHealth systems. The following presentations comprise the minitrack:

- “Enabling Patient Information Handoff from Pre-hospital Transport Providers to Hospital Emergency Departments: Design-Science Approach to Field Testing”; this presentation addresses challenges in transferring complete patient information between emergency medical personnel and hospitals emergency department staff.
- “Mobile Medical Applications for Melanoma Risk Assessment: False Assurance or Valuable Tool?” This presentation examines commercially available apps for identifying melanoma risk and explores the current validity of autonomous risk assessment of melanoma.
- “Building an Evidence Base Using Qualitative Data for mHealth Development” models using qualitative methods and an iterative approach to blend consumer-

driven and investigator-driven aims to produce paradigm-shifting, novel intervention applications to impact health behavior.

- “A Tailoring Algorithm to Optimize Behavior Change” details the development and implementation of an algorithm for tailoring a behavioral intervention based on published treatment guidelines and on outcome data from two large clinical trials. The algorithm pinpoints behavioral, cognitive, and emotional issues that can optimize specific behavior change.