

EAGER: Collaborative Research: mHABIT - Towards Building a Living Lab for mHealth Analytical and Behavioral Research using Internet of Things

Submitted by [Anindya Ghose](#) on Fri, 01/05/2018 - 2:24pm

Project Details

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| Lead PI: | Anindya Ghose |
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Abstract: This project will create a living lab for mHealth Analytical and Behavioral Research using Internet of Things (mHABIT) to build a generalizable infrastructure for new analytical models and a Behavioral Experimentation Platform (BEP) to understand drivers of human health and wellness behavior and lifestyle changes through mobile and sensor technologies. Using an interdisciplinary approach, this project will enhance the understanding of human behavior and interactions with smart technologies in communities. The investigators will leverage test beds with domestic and international partners to advance knowledge towards developing new analytical and experimental methods drawn from econometrics, machine learning, behavioral economics and randomized field experiments. This project will contribute to a scalable prototype technology platform and lead to new solutions for improving user health and wellness, and healthcare efficiency. Overall, this project will integrate advanced Internet-of-Things infrastructures with an instrumented version of the physical world to improve quality of life, health and wellbeing, and sustainability of communities. The methods and infrastructures developed from this project can be easily deployed by healthcare providers to support data collection, analytics, solution and evaluation. The insights from this project will suggest policy implications towards the design of smart community through sustained usage of emerging technology. Moreover, broader impact includes dissemination of research to the public, underrepresented groups, and widespread deployment of the technology. The infrastructure developed from this project will collect and analyze large-scale and fine-grained user GPS trajectory data and RFID tracking data, linked with the EHR data, to examine what factors drive users' engagement with mHealth, their interactions with

doctors inside and outside the clinical setting, and what changes they make in their personal lifestyle to improve their health outcomes. To evaluate the learning of user health behavior and decision making, the investigators plan to implement a pilot deployment of the BEP in the mHABIT living lab, by partnering with healthcare providers in the US and overseas, to design and implement novel mobile-enabled interventions and evaluate the effectiveness of mHealth technology from a causal perspective.
