Deborah Estrin, Professor of Computer Science, CornellNYC Tech
Schedule of Events, May 2-3, 2013

May 2, 2013; 4:00 PM
Campus Lecture: **Sensemaking for Mobile Health**
Computer Science Lecture Hall 1240

Mobile health (mHealth) leverages the power and ubiquity of mobile and cloud technologies to support patients and clinicians in monitoring and understanding symptoms, side effects and treatment outside the clinical setting; thereby closing the feedback loops of self-care, clinical-care, and personal-evidence-creation. However, to realize this promise, we must develop new data capture, processing and modeling techniques to convert the "digital exhaust"™ emitted by mobile phone use into behavioral biomarkers. This calls for a modular layered sensemaking framework in which low level state classifications of raw data (e.g., estimated activity states such as sitting, walking, driving from continuous accelerometer and location traces), are used to derive mid-level semantic features (e.g., total number of ambulatory minutes, number of hours spent out of house), that can then be mapped to particular behavioral biomarkers for specific diseases (e.g., chronic pain, GI disfunction, MS, fatigue, depression, etc). The techniques needed to derive these markers will range from simple functions to machine learning classifiers, and will need to fuse diverse data types, but all will need to cope with noisy, erratic data sources. We are working to build an open architecture and community to speed the rate and robustness of innovation in this space, both academic and commercial (http://openmhealth.org).

May 3, 2013, 12:00 Noon
Industrial and Systems Engineering Research Seminar
3110 Mechanical Engineering (Brown Bag)

When in doubt, move: reflections on a career unplanned

Deborah Estrin, the first faculty member hired for the new CornellNYU Tech Campus, reflects on a 30 year career as an innovator, visionary and scholar in computer sciences. Estrin is the founding director of the Center for Embedded Networked Sensing -- funded by the National Science Foundation -- and a professor of computer science at the University of California-Los Angeles. She is a pioneer in networked sensing, which uses mobile and wireless systems to collect and analyze real-time data about the physical world. Estrin's work has shown how the data streaming from networks of such devices as smartphones and cameras can enrich our understanding and management of complex problems -- from personal and public health to traffic patterns and civic engagement. She has also shown a commitment to K-12 education, spearheading a groundbreaking internship program for Los Angeles high school students in mobile technologies and data. Estrin is a co-founder of Open mHealth, a nonprofit working to create an open-source infrastructure for mobile health, which uses live data made possible by mobile technology to revolutionize patient care.

For more information please contact Patti Brennan, Professor, Industrial & Systems Engineering at pbrennan@engr.wisc.edu.

Prof. Estrin's visit is sponsored by WISELI's Celebrating Women in Science and Engineering Grant Program and the following departments: Biostatistics and Medical Informatics; Computer Science; and Industrial and Systems Engineering.