

BIOENGINEERING

PRESENTS

**Addressing Unmet Needs in Digital Health: Innovating with Technology, Analytics,
and Lifestyle Modification**



THURSDAY, OCTOBER 29, 2015

12:00 PM – 1:00 PM

2101 ENGINEERING V

Todd Coleman, Ph.D.

University of California, San Diego

Associate Professor, Department of
Bioengineering

ABSTRACT:

This talk will address unmet needs in digital health, and barriers to it attaining its full potential. I will highlight our research group's recent efforts in developing thin, flexible wearable sensors and scalable, physiologically-guided statistical methods that provide vulnerability profiles and decision support. From here, I will discuss arguably the biggest challenge and opportunity: developing a sustainable framework to wed these technologies and methods with ways to building community relationships and facilitate lifestyle modification. I will discuss our recent efforts in partnering with non-profit institutions, faith-based organizations, and other trusted community groups. Particular emphasis will be placed on traditionally under-served communities, where the potential benefit to patients, providers, and payers is enormous. Clinical examples will be provided within the context of perinatal health and chronic disease, both of which are fertile territory for innovation. Throughout the talk, I will emphasize the inter-disciplinary nature of this research, involving research from engineering, statistics, medicine, public health, and psychology.

BIOGRAPHY:

Todd P. Coleman received B.S. degrees in electrical engineering (summa cum laude), as well as computer engineering (summa cum laude) from the University of Michigan. He received M.S. and Ph.D. degrees from MIT in electrical engineering, and did postdoctoral studies at MIT in neuroscience. He is currently an Associate Professor in Bioengineering at UCSD, where he directs the Neural Interaction Laboratory and co-Directs the Center for Perinatal Health. His research is highly inter-disciplinary, lying at the intersection of bio-electronics, medicine, and machine learning. He is conducting research in digital health by wedding his research group's expertise in large-scale analytics with their recent development of "epidermal electronics", featured in *Science* in 2011. Dr. Coleman's research has been featured on CNN, BBC, and the New York Times. He has been recognized in the "Root 100" list of 100 African-Americans, ages 25 to 45, most responsible for 2015's most significant moments, movements and ideas. Dr. Coleman has also been selected in 2015 as a National Academy of Engineering Gilbreth Lecturer and a TEDMED speaker.