

BIOENGINEERING

PRESENTS

The Interplay between Data science, Technology, and Health



WEDNESDAY, NOVEMBER 2, 2016

1:00 – 2:00 PM

2101 ENGINEERING V

Todd Coleman, Ph.D.

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Associate Professor, Department of Bioengineering

ABSTRACT:

Dr. Coleman will discuss his research group's efforts in developing flexible multi-functional flexible electronics and scalable inference tools to provide vulnerability profiles and decision support tools for improved interpretation of health and promotion of decision-making. Recent work in advancing flexible physiologic sensors, antennas, and integrated circuits will be discussed, with an emphasis on approaches that are clinically viable, and are compatible with scalable industry-adopted fabrication methods. Dr. Coleman will also discuss novel applied probability methods of interpreting such acquired physiologic data for prediction, diagnosis, and improving health outcomes. An emphasis will be placed on engineering aggregate systems that address socioeconomic and scalability challenges. A few examples will be provided, that include: developing inexpensive and easy-to-deploy physiologic screening tools to predict delayed neurodevelopment in infants; and developing new approaches to measure and interpret electrical activity of the digestive system for disambiguating and identifying physiologic abnormalities underlying GI disorders. Throughout the talk, Dr. Coleman will emphasize the interdisciplinary nature of this research, involving themes from applied mathematics, electrical engineering, bioengineering, and medicine.

BIOGRAPHY:

Dr. 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. Dr. Coleman's research has been featured on CNN, BBC, and the New York Times. Dr. Coleman has been selected as a National Academy of Engineering Gilbreth Lecturer and a [TEDMED speaker](#).