

CARNEGIE MELLON UNIVERSITY

BME 2023 SPRING SEMINAR SERIES

Toward neuroscience of the everyday world using functional near-infrared spectroscopy



PRESENTED BY

David Boas, PhD

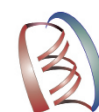
Professor
Department of Biomedical
Engineering
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SCHEDULE

Hall of Arts (HOA) 160

**Thursday,
March 30, 2023
(11:00AM-12:00PM)**

During this presentation, I will provide a brief historical overview of the first 30 years of the development of functional Near Infrared Spectroscopy (fNIRS) for measuring human brain activity, with a focus on the rapid advances over the last 5 years. The last 5 years have seen tremendous advances in the capabilities of wearable fNIRS systems and the ecologically valid studies that can be done with such systems. It is rapidly becoming possible to measure brain function alone and in combination with other biometric sensors in the everyday world. The rest of the talk will start a discussion on the impact this could have on, for instance, brain science studies of social interactions, clinical investigation of the evolution of neurodegeneration and its impact on a person's ability to interact with the world around them, and the propagation to consumer devices for those who want another health monitor to help guide their wellness. But, moving from studies in well controlled laboratory settings to the less controlled environment of the everyday world presents multiple challenges spanning signal processing, data fusion and interpretation, and privacy. We will discuss the data science challenges that need to be addressed to advance this exciting technology into the everyday world.



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