

IEM SEMINAR SERIES

TUESDAY
FEBRUARY 9th, 2016

Robotic Tools for Observing Neural Computations in Intact Brains



Institute for
Engineering in Medicine
UNIVERSITY OF MINNESOTA
Driven to DiscoverSM

DR. SUHASA B. KODANDARAMAIAH

Benjamin Mayhugh Assistant Professor
Mechanical Engineering
University of Minnesota



FREE event, no registration
required.

Pizza and drinks will be
provided.

12:00PM - 1:00PM
Nils Hasselmo Hall
Room 4-101

For additional information on
Dr. Kodandaramaiah's
presentation, please contact:
scot0353@umn.edu

The Institute for Engineering in Medicine (IEM) is pleased to announce the IEM Seminar by Dr. Suhasa B. Kodandaramaiah, "Robotic Tools for Observing Neural Computations in Intact Brains."

In the 1980's and 90s, robotic DNA sequencers played a huge role in the successful sequencing of the human genome. With the massive US Brain Initiative and European Brain Mapping project projects underway, the neuroscientists are finding themselves at a similar junction and are increasingly relying on robotic tools to tackle the twin challenges of scale and complexity of the brain. In this talk, I will present the work we have done in developing scalable, multi-modal, multi-dimensional robotic tools for cellular resolution interrogation of the intact brain. Specifically I will talk about the robotic technologies, which enable the recording of electrical events from single and multiple cells in vivo in intact circuits with great precision, and support a wide diversity of cellular morphological and molecular analysis experiments. Our robots achieves yields, cell recording qualities, and operational speeds and capabilities that are comparable to, or exceed, those of experienced human investigators and are enabling new kinds of neuroscientific investigations that were previously not possible.

Dr. Kodandaramaiah obtained his bachelors degree in Mechanical Engineering from Vishveshwaraiah Technological University in Karnataka in 2006. He then got a Masters degree from the University of Michigan, Ann Arbor and PhD from Georgia Institute of Technology, both in Mechanical Engineering. From 2013 to 2015, he was a Post-Doctoral Associate in the MIT Media Lab and McGovern Institute for Brain Research at Massachusetts Institute of Technology. He recently started as the Benjamin Mayhugh Assistant Professor of Mechanical Engineering at the University of Minnesota Twin Cities. His research is at the intersection of robotics, precision engineering and neuroscience. During his graduate studies and post-doctoral training, Dr. Kodandaramaiah developed robotic tools for observing and analyzing neuronal circuit computations in intact living brains.

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