

FEATURED SPEAKER



KRISHNA JAYANT, PHD

*Assistant Professor of
Biomedical Engineering,
Purdue University*

Dr. Jayant received his B.Tech degree in electrical engineering from the National Institute of Technology in India, and his master's degree and PhD in electrical engineering from Cornell University. He was awarded the Kavli Postdoctoral Fellowship during his postdoctoral training at Columbia University.

At Purdue, his lab focuses on elucidating the biophysical features involved in neural computation and their behavioral relevance using a combination on nano-electrophysiology, optical microscopy, CMOS integrated systems, and theory.

FALL 2021

SEMINAR FOR NEUROTRAUMA AND DISEASES

SPONSORED BY PLEXON NEUROTECHNOLOGY SYSTEMS

PRESENTS

NOVEL NEUROTECHNOLOGIES FOR MAPPING BRAIN CIRCUIT ACTIVITY IN HEALTH AND DISEASE

Date: September 22 **Time:** 4:00 p.m. - 5:00 p.m. EST

Zoom Link: <https://bit.ly/3mNID7v>

ABSTRACT

A fundamental goal in neuroscience is to be able to dissect neural circuit function and correct abnormal activity in a minimally invasive fashion. Activity in such circuits spans a vast expanse in scale from single synapses to networks of neurons to whole brain regions. Currently however, we lack the tools to directly interrogate and modulate these circuits across such scales. While conventional electrophysiology is blind to sub-threshold computations being performed, microscopy-based techniques are only just beginning to take center stage in dissection circuit function in vivo. In this talk, I will introduce a range of electrical and optical techniques that interrogate neural circuit function in both healthy and disease models. My lab has recently focused on experiments involving two-photon imaging and electrophysiological recordings from alpha-synuclein administered mice. I will focus on circuit dysfunctions during the prodromal phase of progression much before Lewy body pathology and behavioral deficits are observed. I will briefly highlight our work on electrophysiology using flexible films in awake behaving mice and describe recent results on synaptic and dendritic integration using nanoelectrophysiology and holographic uncaging. Overall, I will describe how these new methods that can be used to probe neural circuit dysfunction in both health and disease.

Contact us: cpr@purdue.edu



Center for Paralysis Research

