



Dr. Shy Shoham

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Ophthalmology and
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New York University

Oct 14 (Friday)

11:30am - 1:00pm

CKB 217

"Exciting' neuro-physical insights into neural coding"

Abstract:

How are environmental stimuli encoded in neural activity and how does this activity translate into perception? Emerging photonic approaches are helping to shed light on the identity and timing of activated neurons that correlate with external sensory, as well as on which activity features are consequential for perception. In this talk, I will highlight an emerging toolbox of neurophotonics and 'synthetic perception' behavioral techniques that provides a new handle on this classical systems neuroscience problem. Our overall approach achieves highly precise manipulation of neural activity at different scales using two-photon holographic optogenetics or tightly focused ultrasound and complementary new techniques for directly visualizing the excitation. Overall, this precise and controlled approach provides a powerful new framework for testing links between sensory activity and perception

About the Speaker

Shy Shoham is a professor at NYU's Grossman medical school and co-director of the NYU Tech4Health institute. His lab develops and applies neuro-phonic, acoustic and computational tools for interfacing with neural circuits. He holds a BSc in Physics from Tel-Aviv University, a PhD in Biomedical Engineering from the University of Utah and prior to joining NYU he was a professor of Biomedical Engineering at the Technion-Israel Institute of Technology. He co-chairs the Neurophotonics track at SPIE Photonics West annual meeting and has co-edited the book 'Handbook of Neurophotonics