COLLEGE OF SCIENCE
Neuroscience & Cognitive Science

Neurocharlas

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"Optical Control of Neuronal Ensembles to Understand Perception, Behavior, and Disease"

Neuronal activity in primary visual cortex is built by neuronal ensembles defined by groups of neurons with coordinated activity. However, it was unclear if neuronal ensembles could represent visual percepts that could have a functional role in visually guided behaviors. We investigated if the precise activation of neuronal ensembles with two-photon optogenetics in layer 2/3 of primary visual cortex could modulate the behavioral performance of mice trained in a visually guided task. We found that two-photon optogenetic activation of neurons with pattern completion capability could evoke behaviorally relevant cortical ensembles and improve behavioral performance. These experiments demonstrate a causal role of neuronal ensembles in learned behaviors and open the possibility to study the role of neuronal ensembles in different brain nuclei in normal and pathological conditions.

Wednesday
November 30, 2022
Doors open at 4:00 pm
Refreshments from 4:00pm – 4:30pm
ENR 2 Room S215

Zoom Link: https://arizona.zoom.us/j/84610062418

RSVP: https://forms.gle/ZXubpyKe9Ja7g1FW8