



OIST SEMINAR

Luis Carrillo Reid, Ph.D.

Professor

National Autonomous University of Mexico

Luis got his Ph.D. from UNAM in Mexico City and then did postdoc studies in OIST; in Northwestern, Chicago; and finally in NYU, New York; before leaving last year to set up his own laboratory in Mexico.

DATE: Wednesday, March 20th, 2019

TIME: 16:00 – 17:00

VENUE: Seminar Room C700, Level C, Lab 3

Manipulation of behavioral performance induced by targeted activation of cortical ensembles

Abstract:

Cortical activity is built by neuronal ensembles yet it is unclear if they have any functional role. Here we tested if the precise activation of neuronal ensembles with two-photon holographic photostimulation in mouse primary visual cortex could modulate behavioral performance in a visually-guided task. Two-photon optogenetic activation of selected neurons from behaviorally relevant cortical ensembles improved performance whereas activation of nonspecific cells disrupted cortical ensembles, deteriorating behavior. Optogenetic targeting of neurons with pattern completion capability improved task performance by reliably recalling behaviorally relevant ensembles. Our results demonstrate a causal role of neuronal ensembles in a visually guided behavior