



RIVERSIDE

DEPARTMENT OF ENTOMOLOGY
ENTM250 Seminar Series

Speaker:



Dr. Matthieu Louis

Professor of Systems Neuroscience
University of California, Santa Barbara

Date: Monday, October 19, 2026
Time: 3:30 pm - 4:30 pm
Format: In-Person Seminar & Virtual Access
Location: Genomics Auditorium 1102A
Zoom: 997 1360 0858

Title:

“Sensing and moving: Neural algorithms for olfactory navigation.”

Abstract:

During navigation, animals must discriminate among stimuli in high-dimensional chemical spaces and extract reliable information from noisy sensory signals. We use the *Drosophila* larva to study how olfactory sensing and movement are coupled. At the sensory periphery, depolarization block reshapes odor representations across concentrations. By silencing subsets of olfactory sensory neurons at high concentrations, this nonlinearity may help preserve distinct representations of odor identity as stimulus intensity changes. At the behavioral level, larvae use head movements to actively sample their environment and steer along odor gradients. By combining electrophysiology, quantitative behavioral analysis and computational modeling, we examine how peripheral encoding and active sampling together support navigation in dynamic environments.

Refreshments will be served in the Entomology Building Courtyard at 3:00pm