UC RIVERSIDE

DEPARTMENT OF ENTOMOLOGY
ENTM250 Seminar Series

Speaker:

Kenta Asahina, Ph.D.

Associate Professor
Salk Institute for Biological Studies

Date: Monday, March 9, 2026
Time: 4:00 pm - 4:50 pm
Format: In-Person Seminar & Virtual Access
Location: Genomics Auditorium 1102A

Zoom: 943 6687 2379
Passcode: 453393

Title:

"Resolution of conflict and hierarchy in insect models"

Abstract:

Animals often use ritualistic behaviors, including physical contests, to settle a conflict over limited resources and mating opportunities. Somewhat paradoxically, a dyadic fight is settled when one of the participants chooses to stop fighting and flee – in other words, it is the loser, not the winner, which determines the outcome of a fight. Using the fruit fly Drosophila melanogaster, we found that a dedicated circuit controls the timing of the eventual loser to stop fighting by suppressing a specific group of aggression-promoting neurons, in a manner consistent with an evolutionarily stable strategy predicted by game theory. We posit that the basic neural mechanisms that settle dyadic conflicts are foundational for organizing a hierarchy-based group in social insects. To search for a bridge between conflict settlement mechanisms found in Drosophila and neural mechanisms underlying reproductive division of labor in social insects, we have begun identifying genetic signature of sociality in Halictids (sweat bees), a diverse group of bees that contain solitary and social species, as well as species that can switch between two modes of reproduction. We first characterized chemoreceptor genes in Halictus ligatus, a common, primitively social sweat bee. Their odorant receptor genes show intriguing distribution and expression patterns, giving us the first glimpse of a genetic underpinning for social living in Halictids.

Refreshments will be served in the Entomology Building Courtyard at 3:30pm