



RIVERSIDE

DEPARTMENT OF ENTOMOLOGY
Entomology Seminar Series



Speaker:

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Date: Monday October 7, 2024
Time: 4:00 pm - 4:50 pm
Format: In-Person Seminar & Virtual Access
Location: Genomics Auditorium 1102A
Zoom: 952 1906 3064
Passcode: 505445

Title:
"Turnover in the function and mode of action in a conserved social supergene"

Abstract:

Social organization involving cooperation among non-relatives has originated repeatedly in social insects, yet the proximate and ultimate drivers of this transition remain enigmatic. Emerging evidence suggests that supergenes, regions of the genome containing tightly linked genes that are inherited together, commonly control complex traits, from mimetic coloration in butterflies to mating strategies in birds to colony social organization in ants. Scientists are only beginning to understand the characteristics and dynamics of these genomic structures. Using the 'social supergene' that underlies variation in colony queen number in *Formica* ants, I am investigating how an ancient genetic polymorphism persists and functions in multiple contemporary lineages. While the supergene structure is conserved in different *Formica* species, the genotype:phenotype association varies in diverging lineages. The composition of supergene genotypes varies in single- and multiple-queen colonies in different species, and novel supergene variants control additional traits in a subset of examined species. Comparing variation in the supergene mode of action will provide an unusually clear opportunity to explore the evolutionary consequences of recombination suppression in portions of the genome. In parallel, this line of inquiry will begin to shed light on the proximate mechanisms facilitating cooperation among non-relatives in ant societies.

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