UC RIVERSIDE

DEPARTMENT OF ENTOMOLOGY

Entomology Seminar Series

Speaker:

Amelia Lindsey, Ph. D.
University of Minnesota

Date: Monday, May 12, 2025
Time: 4:00 pm - 4:50 pm
Format: In-Person Seminar & Virtual Access
Location: Genomics Auditorium 1102A
Zoom: 956 6969 9893
Passcode: 343307

Title:
"***Symbiosis and (A)Sex: Microbe-mediated transitions in insect reproduction***"

Abstract:

Arthropods are rich in maternally transmitted intracellular infections, many of which directly manipulate host reproduction. In the most extreme, bacteria such as some Wolbachia, Rickettsia, and Cardinium convert their arthropod hosts to asexual reproduction. So-called “parthenogenesis induction” has been reinvented multiple times and relies on microbial mechanisms for altering host meiosis or mitosis. Despite the discovery of microbe-mediated asexual reproduction more than 30 years ago, the underlying mechanisms have since remained elusive. In ongoing work, we are characterizing the factors that mediate the transition to asexuality. This includes the identification of parthenogenesis-inducing bacterial effector proteins from Wolbachia we named PifA and PifB. We are using in vivo cell biology and biochemistry in the native host insects (parasitic wasps) combined with heterologous expression in surrogate systems (yeast, Drosophila) to understand how these proteins alter mitotic and developmental outcomes, including chromosome segregation and sexual differentiation. This transition in reproductive mode has numerous evolutionary consequences for the animal, and our data indicate this is made possible by a novel mechanism of bacteria-host interaction.

Refreshments will be served in the Entomology Building at 3:40 pm