UC RIVERSIDE

DEPARTMENT OF ENTOMOLOGY

ENTM250 Series Webinar

Speaker:

Chin-Cheng Scotty Yang
Assistant Professor
Department of Entomology
Virginia Polytechnic Institute
and State University

Date: Monday, Feb. 14, 2022
Time: 4:00 pm - 4:50 pm
Zoom: 948 0131 1028
Passcode: 347039

Title:

"Invasion genetics and virus-induced behavioral alteration in the invasive fire ant"

Abstract:

Native to South America, the red imported fire ant *Solenopsis invicta* has now spread to more than 20 countries and territories. A worldwide genetic dataset was established to infer the ant's invasion history. All genetic analyses indicate that virtually all recent invasive populations of *S. invicta* have resulted from independent introductions originating in the US where this ant is also invasive. Such an invasion pattern follows a bridgehead invasion scenario where a particular invasive population (the US in this case), instead of native range, serves as the major source for all subsequent incursions. One positive sense single-stranded RNA virus (+ssRNA), *Solenopsis invicta* virus-1 (SINV-1), has been found to be widespread among these introduced populations. Our study demonstrates that foraging behaviors of the invasive fire ant, including foraging intensity and macronutrient preference, are significantly altered by SINV-1 infection. Surprisingly, similar behavioral patterns are also found in other globally distributed pest ant when challenged with +ssRNA viruses, suggesting behavioral responses to viral infection may have been functionally conserved across ants. How viral infection interacts with the foraging biology of ants and its pest management implications will be discussed.