

**Speaker:**

Shao-Hung Lee

Ph.D. Student

Department of Entomology

University of California, Riverside

Date: Monday, Nov. 29, 2021**Time:** 4:00 pm - 4:50 pm**Zoom:** 948 0131 1028**Passcode:** 347039**Title:**

“Fipronil: An outdated compound to control insecticide resistant German cockroaches”

Abstract:

Insecticide resistance in German cockroaches, *Blattella germanica* (L.), develops from the prolonged usage of the same insecticides. The phenylpyrazole fipronil has been formulated in bait products for indoor cockroach control since 1998. Reduced performance of fipronil products and documentation of physiological resistance mechanisms such as detoxification through metabolic enzymes and target-site insensitivity have been reported for over a decade, but fipronil remains a common active ingredient in the market. We collected five strains of German cockroaches from residential sites with severe infestations and found that all strains were resistant towards a fipronil bait and topically applied fipronil. Evidence of detoxification by cytochrome P450 enzymes and the target-site mutation *Rdl* was found in all strains. This demonstrates the ineffectiveness of fipronil based products in managing field-collected cockroaches when such resistance mechanisms present.