

**Speaker:**

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Date: Monday, Nov. 22, 2021**Time:** 4:00 pm - 4:50 pm**Zoom:** 948 0131 1028**Passcode:** 347039**Title:**

“Host choice of the parasitic mite *Varroa destructor* and the honey bee’s immune response after infestation”

Abstract:

Host selection is a crucial life history stage for parasites because it determines the ability of parasites to propagate and be vectored, but parasites also get exposed to host immune systems that differ in their ability to recognize and eliminate pathogens. In the case of the honey bee parasite *Varroa destructor*, the mites choice of a host is also the first step to initiate their reproductive cycle. *Varroa* mites are, in essence, brood parasites and use the time frame between the capping of larval brood cells and the emergence of adult bees to produce sexual offspring that mate and disperse when bees emerge.

My research aims to unravel the factors that determine the host choice of *Varroa* mites on the one hand and the expected responses of the honey bee hosts on the other hand. To do this, I use different bee genotypes available at UCR with known differences in mite tolerance and conduct a series of behavioral studies to quantify mite host choice. I found that *Varroa* mites are most attracted to larvae at age of 7 days irrespectively of genotype. Also, tolerant bees do not seem to attract fewer mites compared to more susceptible bees. I, therefore, hypothesized that tolerant be genotypes mount a more effective immune response against mite infestations and started to quantify those, including the underlying molecular mechanisms. Unraveling effective immune responses of mite tolerant genotypes provides unique opportunities to set up a molecularly informed breeding program of disease resistant stock in the future.