



COLLEGE OF SCIENCE

Neuroscience &
Cognitive Science

Neurocharlas

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***“The Role of Neuropeptides in Social Behavior and
Reproduction in Ants”***

Social insects exhibit fascinating complex behaviors, with behavioral and reproductive division of labor being key features of insect societies. Queens are extraordinarily long lived and specialize in egg laying, whereas workers are short lived and perform all the tasks vital for colony maintenance and growth, such as collecting food, caring for young, and defending the nest. How these colony maintenance tasks are allocated among the worker caste is known to be associated with age, genotype, individual experience, size, and social environment and is characterized by both specialization and behavioral flexibility. My research aims to understand the neurobiological underpinnings of these behaviors, focusing on the differences between queens and worker ants and between workers performing different tasks and elucidating how ants modulate their behaviors in response to varying social environments. In my research, we also aim to understand the neuroendocrine and molecular differences between queens and workers that allow for the co-occurrence of high fertility and long lifespans in queen ants. In my talk, I will discuss the importance of studying ants as model systems for complex behavior and reproduction. I will present data on the roles of two neuropeptides that are highly conserved across animals: the ant insulin-like peptide (ILP2) and an oxytocin-like peptide (Inotocin). Specifically, I will talk about how ILP2 regulates reproductive division of labor in ants and how inotocin regulates foraging behavior in a social context.

Tuesday, April 23, 2024

Doors open at 4:00 pm

Refreshments from 4:00pm – 4:30pm

ENR 2 Room S215

Zoom Link: <https://arizona.zoom.us/j/87652676749>

RSVP Link: <https://forms.gle/GuZvJesDfWKNQudW7>

