

Kavli BRAIN Coffee Hour Seminar Series

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Thurs, 03 Nov 2016

3:30 PM

SERF 307, UT Campus



Tainted Love: Microbes, Toxins, and Pheromones in Salamanders



Animals ubiquitously interact with microbes, and the effects of these interactions on animal physiology and behavior are currently the subject of intense interest. I will describe two ongoing lines of research in my lab in which we are examining the interaction of microbes and the nervous system in pheromonal communication systems in amphibians. First, we are working with newts that possess the bacterial toxin tetrodotoxin (TTX), one of the most potent neurotoxins known. TTX derives its toxicity from its ability to physically block voltage-gated sodium channels, preventing neural transmission in almost all would-be predators. Newts possess resistance-conferring mutations in their sodium channels, and beyond simply resisting TTX they can also smell the toxin and are attracted to it. We are working to understand how and why this happens. In addition, I describe a newer line of research in which we are using axolotls to examine a family of fast-evolving pheromones that appear to be derived from antimicrobial peptides in the skin of amphibians.

Sponsored by: The Kavli Foundation NeuroNET Research Center

Refreshments will be served.