

# Department of Physics and Astronomy Colloquium Series

**Tuesday, January 30, 2024 at 2:30pm in PSE 317**

**Speaker:** Dr. Natasha Mhatre

**Institution:** Canada Research Chair in Invertebrate Neurobiology  
Department of Biology, Western University

**Title:** Tools for singing loudly and amplifiers for hearing better: the tree cricket story

## **Abstract:**

Crickets use sound to find mates. The louder their sound is the further it reaches. The textbooks say that they increase their acoustic space using just morphology and mechanics. Song producing wings and females ears resonate at the same frequency enhancing the size of their acoustic space. But some crickets didn't read the textbook. In this talk, I will present some research on the *Oecanthines*, beautiful insects called tree crickets. Males tree crickets use a behavioural strategy to make themselves louder. They manufacture a baffle, a tool that makes them louder. In fact, using a series of models and experiments, we showed that they optimize their tools. In fact, a deeper dive into this question of singing efficiency has led us to realize that other crickets may also be using other environmental power boosting mechanisms.