## UC RIVERSIDE DEPARTMENT OF ENTOMOLOGY Entomology Seminar Series



## **Speaker:**

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Date:	Monday October 21, 2024
Time:	4:00 pm - 4:50 pm
Format:	In-Person Seminar & Virtual Access
Location:	Genomics Auditorium 1102A
Zoom:	952 1906 3064
Passcode: 505445	

## Title: "Oh the gall! Plant manipulating insects and their associated communities"

## Abstract:

Galling tephritid flies in the genus Aciurina are ubiguitous through the Intermountain West of North America, however they remain critically understudied despite many attributes that make them a useful model system for galling and evolutionary studies. My group has mapped out populations of Aciurina throughout New Mexico, Utah, and Colorado to better understand their evolution and ecology. Through a Genotype By Sequencing (GBS) analysis, we have been able to understand the evolution among these populations and their connection to their host plants, which are primarily on Rubber Rabbitbrush. We have also conducted two-year survey of the additional insect community that associate with these galls. While the primary objective of a gall is to provide protection and nutrition to the offspring of the gall inducer, these predictable and well-defined structures are used by a variety of organisms to obtain needed resources (i.e. nutrition and shelter). Gall inducers are considered to be ecosystem engineers, as they create novel environments for a multitude of species and can increase the species richness and heterogeneity in an environment. We have identified a complex community associated with Aciurina galls, including parasitoid wasps, inquiline weevils, and predatory beetles. Included in the community was a hypergalling midge, which galls galled tissue, and we are the first to describe the complex community that parasitizes the hypergallers. With all the associates taken into account, Aciurina galls are a hot spot of biodiversity with a density of up to 147 arthropods per cm3. The stories within these communities also inform many other aspects of evolutionary biology from the evolution of enemy escape to mechanisms of cascading speciation.