

Sigma Xi 2018 Student Research Showcase

Ecology & Evolutionary Biology



[The Impact of Railways on Gopher Tortoises](#)

Rhett Rautsaw, Clemson University

Roads are known to impact wildlife, but what about railways? In this study, we wanted to find out how railways impact tortoise movement and behavior. We use radio-telemetry, behavioral trials, and game cameras to assess this

problem and help find a solution.



[Training Citizen Scientists to Collect Ecological Data](#)

Margaret Gaddis, University of the Rockies

I present my dissertation research. The purpose of this qualitative comparative multiple case study is to identify patterns and themes in content, instructional design, theoretical alignment, and perceived efficacy of

training for citizen scientists tasked with collecting ecological data in the field.

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[Hive Minded: Like Neurons, Honeybees Collectively Integrate Stop Signals to Regulate Forager Recruitment](#)

Talia Borofsky, Swarthmore College

Honeybees have a dance language. Many people know of the waggle dance, in which a bee dances in a figure-8 to recruit other hive members to a foraging site or a potential new home.

But have you heard of the stop signal? I have been studying how dynamics resulting from the stop signal can regulate foraging, and whether these dynamics can be modeled using equations from theoretical neuroscience.

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[Evolution of North American Micruracarus Water Mites](#)

Rachel Shoop, San Diego State University

There are over 6,000 described species of water mites across the world, but, unfortunately, we know very little about them. My research focuses on the evolution of one subgenus of fresh

water mites in North America with a complicated taxonomic history. This research utilizes advanced molecular methods to resolve species relationships and tests the reliability of morphological characters commonly used to identify species.



[The Evolution of Egg Size in Substrate Spawning Cichlid Fishes](#)

Summer DeRobertis, California State University, Sacramento

Our research attempts to answer the question: is there a benefit to having large eggs despite the possible costs of making fewer of them? To examine this, we bred cichlids in the laboratory, sampled their eggs and fry, and compared the size of the two.