

1. Graduate Student

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*Socioecological Drivers of Abundance and Web Investment in *Latrodectus hesperus**

Urbanization has altered natural habitats by introducing impervious surfaces, altering vegetation cover, and disrupting the continuity of ecosystems. Environmental effects are not solely derived from physical needs; human cultural and economic decisions, including landscaping practices, property value, and access to resources, further shape urban environments. These factors result in patchy habitats and fine-scale microclimates that influence local biodiversity, a pattern described by the luxury effect, wherein wealthier neighborhoods often support higher biological diversity.

Our study explores the impact of variation in anthropogenic change and resource availability on an “urban exploiter”, *Latrodectus hesperus*, or the Western black widow. This synanthropic species is commonly found near human structures and is well known for its medically significant venom. Using data from the Phoenix Area Social Survey (PASS), we selected 11 sites across the Phoenix metropolitan socioecological gradient. From June to August 2025, we conducted standardized daytime and nighttime surveys at each site to quantify widow presence and web size and assess how urban socioecological conditions shape their distribution and habitat use. We also quantified and taxonomically categorized other arthropod taxa around widow webs to gain a better understanding of local diversity. Preliminary results suggest that variation in web investment is more strongly associated with local microclimate conditions than with large-scale patterns of widow abundance.

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3. Adapting to City Life