

## **Individual foraging specialization in the spider-hunting mud dauber wasp, *Sceliphron caementarium*.**

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Eligible for student prize

Individual specialization describes the phenomenon where individuals utilize different resources than others. Despite being conspecifics in the same population, individuals occupy separate niches within the community. Though the individual specialization literature has rapidly grown in recent years, the field remains limited by the inability to thoroughly examine the prey items of predators. Due to their unique natural history, mud dauber wasps provide an exceptional system in which to examine individual specialization. Mud dauber wasp females construct mud cells for their offspring in which they pack paralyzed spider prey (between 5 and 25 spiders per mud cell). In this study, we collected the mud nests of thirty female *Sceliphron caementarium* from a single dense population in Otter Creek, Florida, USA. We identified evidence of individual specialization with respect to spider prey taxa (at the genus and family levels), ecological guild, and size. Furthermore, we found that specialists and generalists coexisted within our population, where some females consistently foraged on a single spider species while others foraged across six spider families (with very different morphology, defensive strategies, and habitat). Additionally, when we looked at multiple foraging bouts of a single female, we found that females remained individual specialists over time. We discuss these results with consideration to intraspecific competition, foraging efficiency, and consequences for biological invasions.

