



# Tommy Edmondson

## Endowed Biology Seminar

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### Through the widow's web; Using extreme mating behaviour to untangle plasticity



**Photograph:** Redback spiders (*Latrodectus hasselti*).  
Photo credit: Ken Jones

**Monday, April 26, 2021**  
**12:00 GMT -7**

If the traits that confer increased reproductive success vary with environmental context, and information about context is available to juveniles during development, then adaptive developmental plasticity (ADP) may evolve. Here I show how male widow spiders (genus *Latrodectus*) are useful for testing hypotheses about ADP because their relatively short lifespans and well-

documented, extreme mating behaviours allow strong predictions about how phenotypes are expected to shift under variable social contexts. I describe studies of behaviour and development in two widow species that show how extensive variation in male body size is linked to social context in the lab and field. Despite a strong advantage of larger males in direct competition, the traits favoured by sexual selection vary with context, and ADP may explain the wide variation in male size found in nature. Phenotype-environment matching could be an important contributor to variation and population persistence. These spiders may be useful tools for understanding how plasticity shapes populations in nature.

Seminar Speaker Host: Meera Lee Sethi

