

Biology Seminar

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It's not you, it's me: individuality in insect behavior and its ecological impact



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Individuality is a fundamental feature of animal behavior and represents a potent substrate that evolutionary pressures can act upon. Such idiosyncrasy in behavior exists across scales: within a single animal from moment-to-moment, across animals responding to an identical stimulus, or in response to complex and changing environments.

Individuality within insect behavior is also important to understand within the context of global health. Measuring how individuals respond to ecological stressors like habitat destruction, pesticide use, and increased competition can help mitigate current risks to populations. However, measuring insect behavior can be challenging, especially tracking an individual over long periods of time or in complex settings. Recent advances in automation and computer vision have made tracking behavior at scale more accessible. Utilizing techniques within these spaces, I will outline three topics of interest pertaining to individuality in insects:

- 1) understanding the neural mechanisms of intragenotypic variability in behavior within *Drosophila*
- 2) individuality within bumblebees responding to competition related stress
- 3) deployable tools for sampling insect behavior in natural settings.