

BEHAVIORAL EVOLUTION GRADUATE OPPORTUNITY

One doctoral student position is available for a motivated individual to study the evolution of behavior in the Biological Sciences Department at Kent State University in Ohio.

Two projects are available, 1. insect swarm formation and movement using Mormon crickets as a model system, and 2. evolution of sex-differences in recombination using *Drosophila ananassae* as a model system (see my web page for background on these projects).

1. The insect swarm project involves modern field and lab techniques as well as some theory:

- Mormon cricket swarms are studied directly in the field using radio tracking.
- Nutritional ecology is studied by manipulating diet and observing changes in behavior.
- Stable carbon and nitrogen isotope ratios are used to judge nutritional history and compare the relative importance of cannibalism and nuptial feeding (food gifts from males to females during mating).
- Models of swarm development and movement are being designed to test theory about the role of individual interactions on swarms.

2. The sex differences in recombination project will involve lab work (including molecular genetics and immunostain-based cytology) and some theory:

- Quantitative PCR will be used to measure sex-differences in expression of genes known to affect recombination in females.
  - This will involve primer design for candidate genes.
- Immunostaining techniques will be developed to show the centromere, synaptonemal complex and cross-over events in *D. ananassae* meiotic cells.
- Models for how sex differences in recombination rates can evolve will be developed.

Previous experience in animal behavior, with *Drosophila*, and/or with molecular techniques or immunostaining would be an asset; a strong interest in evolution and behavior is required.

Position will remain open until filled.

For more information contact:



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