

PhD and PDF Insect Chemical Ecology & Neuroethology

Acadia University, Wolfville, Nova Scotia, Canada



Application Deadline: Open until a leading applicant(s) are identified.

Start date: Flexible

Website: <http://www.acadiau.ca/~khillier>

Qualifications

Successful candidates will have an opportunity to integrate elements of electrophysiology, chemical analyses, neuroanatomical studies and molecular biology (experience in any of these skills would be an asset to PhD applicants, and a requirement for PDF applicants). Furthermore, they should be highly motivated, and have a keen interest in chemical ecology, and neuroethology. Must be able to work well independently and with a team, and have a good suite of communication and interpersonal skills.

Description

We are currently seeking a motivated (1) PhD candidate, and a (2) Post-Doctoral Researcher to conduct research on **Pheromone Diversity in Heliothine moths** to join Team Hillier!

Heliothine moths are ubiquitous, representing the most serious agricultural pests on the planet, causing massive annual crop losses particularly in the developing world. Estimates range between \$3-7 billion in control costs per annum for the most prevalent agricultural pest species - *Helicoverpa armigera*, *Helicoverpa zea*, *Helicoverpa assulta* & *Heliothis virescens*. This research project will investigate mechanisms which have led to the evolution of diverse pheromone communication strategies by comparative examination olfactory systems in an important group of agricultural pests & improve management for these & other pest species. The candidate(s) will join a research program investigating shifts in olfactory physiology in relation to insect phylogeny & host specificity. Using a comparative approach with closely-related species will provide critical information regarding evolution & divergence of these species, & new avenues for management with pheromones & host plant odorants.

The **goal** of these studies will be to use comparative physiology, chemistry and molecular tools to characterize odorant receptor shifts associated with communication and develop a comprehensive comparative database of olfaction in this group. Using the Heliothine model system to examine shifts in communication manifested by differential olfactory receptor (OR) expression will permit investigation of larger trends in speciation (both sympatric and allopatric) and evolution in insects. This will determine genetic factors mediating shifts in female pheromone production, male pheromone preference and physiological processing of these odorants as these species diverge. Populations from five continents will be investigated, including major & minor polyphagous pests, host specialists & out-group species via international collaborations. A multi-pronged comparative approach will be used to examine olfactory physiology, morphology, chemistry and genetics between these species.

Application Materials

Please submit a CV including relevant publications, a cover letter stating your interest in the position, and the names and contact information for three references to: kirk.hillier@acadiau.ca

Submit applications and further questions to:

For more information, please contact Dr. Kirk Hillier.

Dr. Kirk Hillier

Biology, Acadia University

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