

2026

PhD research opportunities

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Successful applicants must meet the La Trobe University entry requirements for a Doctor of Philosophy degree.

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For enquiries and to apply, please forward a covering letter, your curriculum vitae (please include evidence of research writing) and academic transcripts to:

Kendra Whiteman
Higher Education Manager

Agriculture Victoria Research
kendra.whiteman@agriculture.vic.gov.au

Closing date for applications: until filled



Behavioural drivers of horizontal transmission of entomopathogenic fungi in *Bactrocera tryoni*

Sustainable management of Queensland fruit fly (*Bactrocera tryoni*) relies on integrated pest management (IPM) approaches that minimise environmental impact. Microbial biopesticides, particularly entomopathogenic fungi (EPF), are increasingly used due to their safety, environmental benefits, and compatibility with IPM programs. Ongoing research aims to develop EPF-based field suppression strategies, with effective delivery systems identified as a key requirement for successful implementation.

This PhD project will investigate how insect behaviour influences the horizontal transmission of entomopathogenic fungi (EPF) in the Queensland fruit fly. The research will focus on understanding how sensory cues (visual and olfactory), contact behaviour, and social interactions govern pathogen acquisition and transmission between individuals. Autodissemination refers to the transfer of pathogens via the insect itself. An autodissemination strategy provides a compelling model system for studying the links between sensory ecology, behavioural interactions, and epidemiology of fungal entomopathogens. This project will generate fundamental insights into behaviourally mediated pathogen transmission, while contributing to the broader development of biologically based pest management strategies.

PhD Project Aims:

- **Evaluate horizontal transmission of fungal inoculum between flies to estimate biocontrol potential**
- **Identify and measure insect behaviours in response to visual and olfactory cues**
- **Test biopesticide formulations or platforms to improve contact delivery of infectious propagules to flies**

The candidate will be supervised by Paul Cunningham and Aimee McKinnon (School of Applied Systems Biology), and Amanda Franklin (Department of Ecological, Plant and Animal Sciences).