2024

PhD research opportunities

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The successful candidates will receive:

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- Training in Australia's first integrated agricultural systems biology research centre, AgriBio
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The research projects is based at AgriBio, the Centre for AgriBiosciences, Melbourne Australia

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

Check your eligibility here:
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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

Current Projects:

Forward surveillance for viral emergency animal diseases (EADs) using High Throughput Sequencing (HTS) approaches.

There are increasing threats to Australia's agricultural industry due to the recent detection of several EADs in neighbouring countries. Brucellosis is an economically important notifiable and zoonotic disease in Australia that affects livestock, wildlife and domestic animals. It is caused by several species of the bacterium *Brucella*. The project will investigate and develop molecular forward surveillance technologies for *Brucella* spp., to improve our capability for early detection, accurate diagnosis and response to outbreaks.

PhD Project Aims -

- To investigate novel environmental sampling methods to enable the detection of Brucellosis within a herd.
- To investigate enrichment and DNA extraction methods for the detection of *Brucella* species from environmental nucleic acids (eNA's).
- Develop a refined and targeted metagenomic sequencing approach to improve the detection limit of *Brucella* from eNA samples.
- Establish bioinformatic workflows for the identification and characterisation of *Brucella* species.

This PhD will develop and implement a novel workflow and bioinformatic pipeline for the detection and surveillance of Brucella spp. at the herd-level and in the environment. These methodologies will enhance the surveillance capability for Brucellosis and provide genomic information that will differentiate between the endemic and exotic *Brucella* species in Australia. to enable detection at the herd-level and in the environment before clinical disease occurs, providing a means to detect and stop the spread of the disease.

LA TROBE UNIVERSITY

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