

2023

PhD research opportunities

Seeking the brightest graduates to advance your career in industry supported world-class bioscience research

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The successful candidates will receive:

- A \$35,000 p.a (tax-free) scholarship up to three and a half years
- Training in Australia's first integrated agricultural systems biology research centre, AgriBio
- Professional development programs
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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:
<https://www.latrobe.edu.au/study/apply/research/doctor>

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:

Plant pathogen diagnostics and surveillance using High Throughput Sequencing (HTS) and metagenomics approaches for endemic and exotic pathogens of grain crops.

Understanding the population genomics of pathogens, both outside Australia (exotic) and within Australia (endemic) has become increasingly important in controlling disease outbreaks. Through Agriculture Victoria, the Grains Research and Development Council (GRDC) is funding **two PhD projects (one per fungal pathogen complex)** to understand the genomics of two fungal pathogens of importance to the grains industry. The pathogen complexes are ***Septoria spp.*** (including *Septoria tritici*) of importance for wheat, and ***Botrytis spp.*** with reference to *Botrytis cinerea* that infects pulse crops. These projects will involve developing and applying genomics resources, to enable diagnostics and bio-surveillance capabilities for the two pathogens.

PhD Project Aims -

- Generate and analyse genomic resources of endemic isolates (e.g. genome sequences, transcriptome sequences)
- Determining the pathogen diversity through in silico genome analysis using the self-generated sequences and publicly available pathogen genomic sequences
- Explore the relationship of endemic isolates to the exotic isolates to enable diagnostic development
- Identify and validate bar code(s) sequence(s) to support accurate and robust detection of target fungal pathogens
- Explore the use of these barcodes in fungal spore traps for disease surveillance

The PhD student will characterise isolates of key pathogen species at the morphological and genomic level, build a reference database of trusted genome sequences of pathogen species, trial optimal trapping methods for pathogens and demonstrate metabarcoding as a surveillance tool for these pathogens.