

PhD research opportunity

Use innovative research to support Australia's viticulture industry

Apply today

The successful candidate will receive:

- A \$37,000 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
- International travel opportunities

The research project is based at AgriBio, the Centre for AgriBiosciences, Melbourne, Australia

Project will include opportunities to:

- Apply a combination of cutting edge genomic and transcriptomic approaches and molecular assays to identify gene that mediate phylloxera-grapevine interactions
- Develop novel methods to screen the ability of diverse Australian phylloxera strains to develop on, and cause damage to, different grapevine cultivars
- Gain skills in insect husbandry, plant culturing, molecular biology, bioinformatics and fieldwork
- Form professional networks with industry

Exploring the genomic basis of virulence in grape phylloxera

Grape phylloxera (*Daktulosphaira vitifoliae*) is an insect pest that poses a significant threat to the Australian grape and wine industry. Phylloxera induces the formation of damaging galls in plant tissue and heavy infestations can destroy an entire vineyard in just a few years. While the grapevine *Vitis vinifera* is highly susceptible to phylloxera, it is becoming common practice to use vines that have been grafted onto phylloxera-resistant rootstocks. However, rootstocks vary in their resistance towards different phylloxera genotypes (strains), and the adaptations of particular genotypes to overcome resistance are poorly understood from a genomic / transcriptomic perspective.

Agriculture Victoria is funding an exciting PhD project to explore the genetic basis of virulence in phylloxera, using natural variation in Australian phylloxera populations, a variety of genomic, transcriptomic and molecular techniques, and novel insect-plant bioassay methods. The project will be supervised by A/Prof Paul Cunningham and Dr Alex Piper at the School of Applied Systems Biology, La Trobe University, with external co-supervision by Dr Jack Scanlan and Dr Jessi Henneken (Agriculture Victoria), and Dr Paul Nabity (The University of Melbourne).

This project will advance the fundamental understanding of insect-plant interactions and support the Australian viticulture industry. Through collaboration with a diverse team of entomologists, botanists, bioinformaticians, and industry partners, the student will receive comprehensive training, and access to cutting-edge techniques and skills that are in high demand within academia and industry.

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

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>