

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 \$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 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.

Genotype-Phenotype Associations of Pear Selections

This PhD project will **i)** conduct whole genome sequencing of new and traditional pear selections and **ii)** examine genotype-phenotype associations for key attributes including fruit quality, vegetative growth habits, precocity, and pest and disease resistance. The project aims to add to the global knowledge of pear genetics to drive future advances in pear breeding and crop management.

Background

Victoria grows the majority of Australia's pears (90%) and is home to the Tatura SmartFarm Pear Repository. This collection of over 150 European and interspecific (European x Asian) pear selections produced by the Australian National Pear Breeding Program and 90 parent cultivars offers a unique resource for examination of pear genetics and genotype-phenotype associations. The first draft genome sequence of an Asian pear was reported a decade ago, followed by that for a European pear a year later. Since that time, efforts to associate key pear attributes with genetic loci have advanced the understanding of genetic drivers of pear productivity and regulation of fruit quality. Larger genotype-phenotype datasets will be valuable globally to advance breeding programs, improve on-farm management of pears and increase resilience to pest, disease, and climate change.

Scope

The PhD candidate will:

- Conduct whole genome sequencing of pear selections and parents from the Pear Repository.
- Assemble historical phenotype data collected during the evaluation of pear selections.
- Record relevant additional phenotype data, including fruit quality traits, vegetative growth habit, bearing habit, precocity, and pest and disease resistance.
- Analyse genotype-phenotype associations.
- Share findings with local growers and industry service providers.
- Present results at an international conference and prepare articles for submission to scientific journals.



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