

2019

PhD research opportunities

Portable, in-field pathogen detection



Apply today

PhD research opportunity to develop and validate a sensitive and secure metagenomic pipeline for the in-field detection and characterisation of pathogens using portable sequencing technologies (i.e. Oxford Nanopore MinION)

The successful candidate will receive;

- A \$30,000p.a (tax free) scholarship for 3 years. Potential for top-up grants through the Defence Science Institute.
- Training in Australia's first integrated agricultural systems biology research centre, AgriBio
- Significant professional development opportunities with placement at both partner organisations (Agriculture Victoria Research 80%, DST Group 20%)
- International travel opportunities
- Due to scholarship restrictions, the applicant must have Australian citizenship.

Scholar capabilities

This project will incorporate fast-paced, emerging technology that requires a dynamic individual with a high aptitude for bioinformatics and applied innovation. Applicants should be adaptable with placements based at AgriBio, Bundoora and DST Group, Fishermans Bend, in addition to in-field validation. The successful applicant should have a high level of achievement, including a First Class Honours Science degree or equivalent. Desirable capabilities include knowledge and demonstrated skills in molecular biology, experience in analysing next/third-generation sequencing data, proficiency in a Unix/Linux environment and contributions to original research in peer reviewed journals.

Immediate enrolment is required.

Project description

Agriculture Victoria Research and the Defence and Science Technology (DST) Group have a common interest in developing enhanced capabilities for fast, and high-confidence, sequencing-based identification of pathogens in the field.

In collaboration with State and Federal government scientists, this project will investigate the use of novel third-generation sequencing laboratory processes and workflows to develop an applied, portable pathogen detection and characterisation tool. Quality control metrics will be assessed to establish a stand-alone, quality framework to ensure in-field performance.

Using a series of RNA viruses as a model, this project will undertake in-field validation of detection methods.

The objectives of the project are:

- Optimisation of the sequencing processes for using Oxford Nanopore technologies
- Development of secure bioinformatics data analysis pipelines
- In-field assessment of the developed strategies
- Assessment of other portable sequencing technologies which may emerge during the project.

For enquiries:

Dr Stacey Lynch
Senior Research Scientist - Virology
Agriculture Victoria Research
stacey.lynch@ecodev.vic.gov.au

To lodge expression of interest, please forward a covering letter (addressing the Scholar capabilities), your curriculum vitae and academic transcripts to:

Kendra Whiteman
Visitor and Student Coordinator
Agriculture Victoria Research
Kendra.whiteman@ecodev.vic.gov.au
+61 03 9032 7065