

National Industry PhD opportunity – Understanding gene flow and population structure in an animal disease insect vector

Charles Darwin University (CDU) has been awarded a National Industry PhD grant for a PhD candidate to undertake an exciting project applying cutting edge genomics and bioinformatics tools and epidemiological modelling to advance surveillance and early detection of exotic animal diseases in northern Australia.

Scholarship and financial support: A National Industry PhD Scholarship valued at **\$46,000** per annum, for a maximum of 3 years from commencement, is open to Australian citizens/residents or New Zealand citizens.

About the project: *Culicoides* biting midges, are important disease vectors for a range of viruses, bacteria and nematodes with the potential to introduce exotic animal diseases into Australia. The proposed project will apply genomic methods to understand population structure and gene flow in *Culicoides* midges across northern Australia and South-east Asia. The project will also analyse blood meal from populations using metabarcoding to obtain information on diet and host range. The project will provide crucial data for modelling movement of *Culicoides* midges in northern Australia and identify sampling approaches for future surveillance efforts.

The National Industry PhD Program is an Australian Government initiative that connects PhD students with industry partners, to undertake a research project that addresses a sector-specific problem. The Industry partner for this project is the Northern Territory Government's Department of Industry, Tourism and Trade (DITT).

The PhD candidate will be based at the new Research Institute of Northern Agriculture (RINA) at the CDU Casuarina campus but will spend up to 50% of their candidature with DITT researchers working in an animal biosecurity diagnostic and research laboratory. The opportunity includes a minimum three-month HDR internship with the Berrimah Veterinary Laboratory, Northern Territory Government to develop skills and connections.

RINA is a new CDU initiative to help northern Australia realise its potential as a food production heartland in the Asia Pacific region. Northern Australia is recognised as a high-risk zone for the introduction of exotic pests and pathogens, due to its vastness, remoteness and high vulnerability. The Tropical Biosecurity Group provides research to support a science-based approach to prepare, respond and manage pests, diseases and weeds with a focus on the development and implementation of genomic tools for improving biosecurity and biodiversity outcomes.

About you:

- High level of academic merit and research background that meets the RTP Stipend Scholarship requirements, preferably in Molecular Biology, Genomics or a similar field.
- Interest and/or knowledge of the exotic biosecurity threats to Australian livestock, especially in northern Australia and interest in pursuing a career in biosecurity diagnostics and research.

- Be willing to live and work in Darwin

Benefits to you:

- Generous stipend and support for project costs.
- Develop highly desirable skills and knowledge for a career pathway in biosecurity.
- Integral part of a multidisciplinary research team providing ample opportunity for professional development as well as career progression following completion of the PhD.
- Access to Student Support Services and Wellbeing Support Program.
- Work with a University committed to changing people's lives for the better through training, education and research.

Essential selection criteria:

- An Australian citizen or permanent resident, or a New Zealand citizen
- First-class Honours or a Masters degree containing a substantial research component in a relevant field such as genomics, molecular biology or bioinformatics.
- It is preferable that applicants have some publications, e.g., research reports, journal publications

How to apply:

- Interested applicants should contact Dr Maxine Piggott by email at maxine.piggott@cdu.edu.au to submit an expression of interest, attaching a CV including details of 2 academic referees and a brief statement describing your background, research experience and interest in this research project.
- Please note that applications will be assessed as they are received, and once a suitable number of applicants have been merit assessed, the preferred candidate will be invited to apply for a PhD enrolment online. We therefore encourage early application.

Deadline for applications: 15/9/23

Commencement date: ASAP

Principal supervisor: Dr Maxine Piggott, Professor of Tropical Biosecurity, Research Institute of Northern Agriculture, Research Institute for the Environment and Livelihoods, Faculty of Science and Technology. Contact maxine.piggott@cdu.edu.au or (08) 9466763

Diversity and Inclusion

At CDU, we actively celebrate our diversity. We innovate, embrace new ideas, and act with courage and kindness. We're about what we can give to the world rather than what we take, and we believe in the transformative power of education. We work hard to make sure every member of our university community feels that they truly belong. Understanding that it is through our focus on our people and leveraging our differences that will make CDU the most connected university in Australia, we are striving to ensure that our culture and our community are inclusive of all our staff, students and visitors. We are committed to maintaining a culture where everyone feels respected, safe, encouraged to speak up and supported in achieving their professional goals. Applications from First Nations people, women at all levels, culturally and linguistically diverse people, people with disability, neurotypical and neurodiverse people, LGBTIQ+ people, people with family and caring responsibilities and people at all stages of their careers are welcomed.

You make CDU. And we want you to be exactly who you are.