



PhD: Landscape genetics of insect vectors of tropical diseases in northern Australia

Charles Darwin University (CDU) is offering an exciting project applying cutting edge genomics, invertebrate derived DNA (iDNA) and modelling approaches to understand the distribution and gene flow of insects which are likely vectors of tropical diseases in northern Australia.

Scholarship and financial support: Australian Government RTP Stipend Scholarship valued at **\$32,192** per annum, for a maximum of 3 years from commencement, is open to Australian citizens/residents or New Zealand citizens. A top-up of **\$10,000** per year will also be provided for a maximum of 3 years. International applicants are also welcomed to submit an expression of interest. If suitable, the student will be invited to apply for the International Research Training Program Scholarship scheme, and a tuition fee waiver scholarship.

About the project: Mosquitos and other insects are known vectors for tropical diseases of native wildlife, livestock and humans. Tropical diseases, their hosts, vectors, distribution and patterns of dispersion remain poorly understood in northern Australia, despite proximity to potential disease sources in south-east Asian countries. The project will involve fieldwork across remote northern Australia to collect insects such as mosquitos for genetic analysis and ecological data. Genomic methods will be used to understand genetic connectivity of insect populations and potential disease spread. The project will also analyse blood meal from populations (iDNA) using metabarcoding to detect the range of host species they feed on. Blood meal analysis may also provide the opportunity to investigate tropical disease presence and load. The project will provide important data on distribution, pathways and host range of insect vectors to support tropical disease epidemiology in northern Australia.

RINA is a new CDU initiative to help northern Australia realise its potential as a food production heartland in the Asia Pacific region. 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.

Benefits to you:

- Generous stipend and support for project costs.
- Training and experience in genomic and iDNA approaches, population genomics, metabarcoding, data analysis and modelling.
- Integral part of a multidisciplinary research team providing ample opportunity for professional development.
- 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.
- Fieldwork in the beautiful Top End of the NT and the Kimberley region, WA

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.
- Be willing to live and work in Darwin
- Ability and willingness to travel to regional and remote locations

Essential selection criteria:

- An Australian citizen or permanent resident, or a New Zealand citizen* (*International applicants may be eligible under certain circumstances - please contact Maxine for more details)
- First-class Honours or a Masters degree containing a substantial research component in a relevant field such as genomics, molecular biology or bioinformatics.
- 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.

Deadline for applications: 31/10/24

Commencement date: Jan to March 2025

Principal supervisor: Dr Maxine Piggott, Professor of Tropical Biosecurity, RINA, Faculty of Science and Technology. Contact maxine.piggott@cdu.edu.au or (08) 8946 6763.

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.

