

PhD: Insects as recorders of biodiversity and reservoirs of disease

Charles Darwin University (CDU) is offering an exciting PhD project aligned with two distinctive research programs on the biosecurity of northern Australia and the biodiversity of offshore islands.

Scholarship and financial support: Australian Government RTP Stipend Scholarship valued at **\$34,190** 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.

About the project: The PhD will use cutting-edge genetic tools to analyse insect blood meals as a novel way to uncover hidden patterns of biodiversity and track potential disease risks in northern Australia. By identifying the animals that insects feed on, you will gain unique insights into the presence and movements of wildlife across diverse landscapes, while also monitoring vectors that may carry pathogens affecting people, livestock, and ecosystems. The project offers the opportunity to develop advanced skills in molecular ecology, bioinformatics, and field ecology, while contributing directly to biodiversity conservation and biosecurity. This PhD project is based at Charles Darwin University and will work closely with partners on an ARC-funded project on the biodiversity of the Northern Territory's offshore island estate, including remote communities, ranger groups and Land Councils. You will help pioneer approaches that integrate biodiversity discovery with disease surveillance, building knowledge critical for safeguarding northern Australia's unique environment and communities.

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 and island estate of the NT

About you:

- First-Class Honours or equivalent in Molecular Biology, Ecology, Genetics, or a related field
- Strong skills in molecular laboratory methods (e.g. DNA/RNA extraction, PCR/qPCR, sequencing library preparation)
- Willingness to participate in extended periods of remote fieldwork
- Ability to work independently and as part of a multidisciplinary team

Essential selection criteria:

- An Australian citizen or permanent resident, or a New Zealand citizen (domestic student).
- First-class Honours or a Masters degree containing a substantial research component in a relevant field such as genomics, molecular biology or bioinformatics.

Desirable Criteria:

- At least one publication in a recognised peer-reviewed journal
- Background in entomology, wildlife ecology, or vector biology
- Experience with bioinformatics or willingness to learn (metabarcoding, sequence analysis, data management)
- Experience with remote fieldwork

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: 30 November 2025

Commencement date: January to March 2026

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. Other supervisors: Professor Brett Murphy, Professor Sam Banks and Dr Teigan Cremona.

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.