From research into bionic brains and superbugs to invasive fruit flies and lead-contaminated drinking water, Macquarie’s biological sciences researchers are uniquely positioned to help shape the complex issues that define the future of humanity.

Our research strengths are concentrated in the areas of animal behaviour, conservation genetics, ecology, evolutionary biology, microbiology, palaeobiology, plant biology and zoology, and a significant theme is international networking that builds global research collaborations.

We are home to many renowned biological sciences researchers, including one of the world’s most influential ecologists, Professor Mark Westoby. A pioneer of trait-based ecology, Westoby was named Scientist of the Year at the 2014 NSW Science and Engineering Awards, is an ARC Laureate Fellow and is the leader of the Genes to Geoscience Research Centre.

Other world-renowned researchers include climate change scientist Professor Lesley Hughes, who won the 2014 Australian Government Eureka Prize for Promoting Understanding of Australian Science Research; and Associate Professor Ian Wright, who won the 2015 Australian Academy of Science Fenner Medal for his research on plant ecology.

Our biological scientists also enjoy an international reputation as leaders in their fields. Macquarie is number one in Australia for the citation impact of our environmental sciences and ecology research (ESI, 2014) and in the top 100 universities in the world for Earth and marine sciences (QS, 2015). Additionally, in the most recent Excellence in Research for Australia (ERA) evaluation, our biological sciences research received a rating of ‘performance above world standard’.

As a higher degree research candidate at Macquarie, you will be part of a large and vibrant community of more than 100 research students, and you will have the opportunity to conduct research alongside Future Fellows, ARC Discovery Early Career Researchers, International Research Fellows and Young Tall Poppy Science Award winners.
Highlights

• In the most recent Excellence in Research for Australia (ERA) evaluation, the sub-discipline of evolutionary biology received a rating of ‘performance well above world standard’, and the sub-disciplines of ecology, microbiology and plant biology received a rating of ‘performance above world standard’.

• Our researchers enjoy high visibility in prominent journals such as Nature, Proceedings of the National Academy of Sciences of the United States of America and Science. Additionally, we receive wide media coverage for our research into antibiotic resistance, coral reef dynamics, early animal evolution, honey bee colony collapse, native rice, polymorphic Gouldian finches, sexual cannibalism, shark conservation, social lizards, spider web design and tool use by fish.

Support

You will be provided with individualised support, as well as a range of opportunities, at all stages of your research degree, including:

• higher degree research learning skills advisers who provide valuable training options such as workshops in research communication, presentation skills, academic writing skills, thesis planning and more
• inspirational supervision and mentoring
• a candidature management plan that closely supports progress, commencement programs, work-in-progress reviews, and presentations providing opportunities for feedback from a panel of academics
• real-world engagement with opportunities for cotutelle and joint degrees
• financial support for a range of research-related activities
• world-class facilities
• a transformative research experience that fosters cross-disciplinary collaboration.

RESEARCH LEADERS

Meet some of our internationally renowned researchers.

Professor Michelle Leishman is a plant ecologist with broad research interests in plant functional traits, plant responses to climate change and plant conservation biology. Her research integrates experimental studies in the field and glasshouse, large-scale comparative analysis of plant traits, and bioclimatic modelling and spatial analysis. Her applied research focuses on extinction threats to plant species and ecological communities, with strong research collaborations with scientists from the Royal Botanic Gardens and the New South Wales Office of Environment and Heritage.

Associate Professor Martin Whiting’s research is broadly centred on behavioural and evolutionary ecology. He studies animal communication, focusing on the design and information content of animal signals, particularly colour signals and their role in fitness. A second theme is cognition and brain size evolution in lizards and toads and the link between cognition and social behaviour. He is also using the family-dwelling, social Australian Egernia-Liopholis clade as a model system for uncovering the mechanisms that might have driven the early evolution of monogamy and sociality.

Dr Rob Lanfear’s research focuses on understanding how and why species’ genomes change over time. His work bridges spatial and temporal scales: from mutations that occur within individuals over a few decades, to the long-term evolution of entire clades over millions of years. Two key research themes are to understand the causes and consequences of variation in long-term rates of molecular evolution, and to map and date the accumulation of somatic mutations within individual trees.

FIND OUT MORE

Macquarie University NSW 2109 Australia
T: +61 (2) 9850 7987
mq.edu.au | hdr.mq.edu.au

CRICOS Provider 00002J

The information in this document is correct at the date of publication but the University reserves the right to vary or withdraw any general information, program(s) and/or fees without notice.