From research into anti-cancer drugs and photosynthetic bacteria to the rapid detection of disease pathogens and the effects of chronic caffeine and sucrose consumption, Macquarie's chemical and biomolecular sciences researchers are uniquely positioned to help shape the complex issues that define the future of humanity.

Macquarie researchers pioneered the study of proteomics – a term actually coined by our researchers – and Macquarie is home to the world’s first dedicated proteomics facility, the Australian Proteome Analysis Facility.

Macquarie is driving major advances in basic and commercial research in analytical spectrometry, glycochemistry, quantitative proteomics, and separation science and instrumental methods. Our researchers are also pioneering new methods in laser spectroscopy, catalysis and organic geochemistry.

Macquarie also enjoys enviable rankings – in the most recent Excellence in Research for Australia (ERA) evaluation, our chemical and biomolecular sciences research received ratings of ‘performance at or above world standard’ in the sub-disciplines of analytical chemistry, biochemistry and cell biology, microbiology and physical chemistry.

Several of our researchers sit on the editorial boards of international journals including Current Opinion in Molecular Therapeutics, Frontiers in Plant Science, Journal of Nanotechnology, Journal of Proteome Research, Molecules and Proteomics.

As a higher degree research candidate at Macquarie, you will have the opportunity to engage in research alongside some of the best academics and researchers in not just Australia but the world, and have access to outstanding facilities.
Highlights

- Macquarie has strategic alliances with major manufacturers of analytical equipment including Agilent Technologies, AB Sciex, BioRad, Bruker Daltonics, EMD Millipore, GE Healthcare, Shimadzu, Sigma-Aldrich and Thermo. Our researchers maintain extensive networks of collaborations with international research institutions and companies.

- Research on the development of fluorescence probes from natural products led to the spin-off company Fluorotechnics. Additionally, several products have been developed in recent years that are currently marketed by GE Healthcare, Gel Company, In Vitro Technologies, Sigma-Aldrich and SERVA.

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 Ian Paulsen** is an expert in bacterial genomics and is ranked in the top one per cent of researchers in the world (ESI, 2014). He is currently utilising ‘big picture’ or global approaches such as genome sequencing, metagenomics and functional genomics to understand how bacteria adapt to different environmental niches through swapping genes with each other.

**Associate Professor Mark Molloy** is the director of the Australian Proteome Analysis Facility and has strong interests in biomedical applications, in particular molecular cancer biology. He is developing methods to quantitatively profile changes in protein phosphorylation and is undertaking research to identify prognostic and predictive colorectal cancer biomarkers.

FIND OUT MORE

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

CRICOS Provider 00002J