



Associate Professor Anand Deva  
Macquarie University Hospital

# Medicine and surgery

Macquarie is setting new national benchmarks in medical research through the establishment of the Macquarie University Health Sciences Centre (MUHSC). MUHSC is an Australian first – a fully integrated, university-led academic health campus bringing together world-class clinical care, teaching and research.

This model is used by many of the world's leading academic institutions and hospitals, and it ensures that medical research breakthroughs directly lead to improving patients' lives. This partnership also provides our higher degree research candidates with access to a research environment that is unmatched in Australia.

Macquarie's medicine and health sciences researchers are uniquely positioned to help shape the complex issues that define the future of humanity. We are conducting world-leading, cross-disciplinary research in cancer, neuroscience, clinical sciences and cardiology, while tissue banking undertaken as part of our flagship motor neurone disease (MND) research program is giving our researchers a leading role in the largest genetic study in the world.

The Australian Institute of Health Innovation (AIHI) conducts multidisciplinary research into health sector practices, organisation and management. It emphasises translational research and turning policy into practice. Research interests include healthcare policy, governance and leadership; the development of intelligent search systems to support evidence-based healthcare; and the rigorous multi-method evaluation of health systems and safety practices.

AIHI is widely recognised for its impact: recently, AIHI's Associate Professor Farah Magrabi received a Sax Institute Research Action Award for her new e-health risks classification system, which has become the international standard. Macquarie was also announced as lead administrator of a \$14 million research program to study the molecular determinants of risk, progression and treatment response in melanoma, while a research team led by Associate Professor Ian Blair received a \$6.37 million grant from the NHMRC for dementia research.

Additionally, in the most recent Excellence in Research for Australia evaluation our neurosciences, and oncology and carcinogenesis research received a rating of 'performance well above world standard' while our cardiovascular medicine and haematology research received a rating of 'performance above world standard'.

As a higher degree research candidate at Macquarie, you'll have the opportunity to work alongside experts in academia, industry, and clinical care and health systems evaluation, providing you with an unrivalled research experience, as well as the opportunity to drive innovation and improve the lives of people around the world.

[mq.edu.au/research/medicine-and-surgery](http://mq.edu.au/research/medicine-and-surgery)



**MACQUARIE**  
University  
SYDNEY · AUSTRALIA



## AREAS OF SPECIALISATION

- Biomechanics
- Blood flow
- Cardiorespiratory neuroscience
- Cardiorespiratory physiology
- Cardiovascular neuroscience
- Cellular signalling
- Clinical ethics
- E-health
- Genetics
- Health systems
- Infection and immunity
- Molecular neuroscience
- Musculoskeletal conditions
- Neurological rehabilitation
- Neurology
- Neurosurgery
- Orthopaedics
- Paediatrics
- Pain
- Pharmacology
- Physical science (medical image processing, radiochemistry, medical physics)
- Physiotherapy
- Vascular surgery
- Visual science



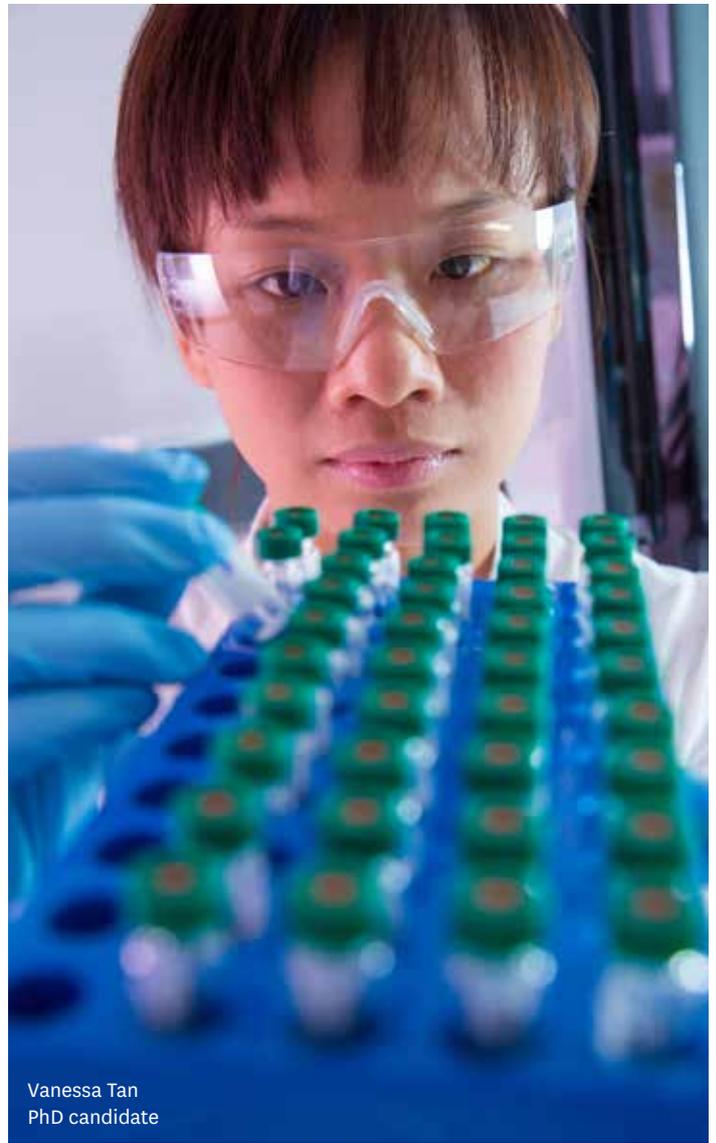
## RESEARCH HUBS

- Australian Institute of Health Innovation
- Centre for Healthcare Resilience and Implementation Science
- Centre for Health Informatics
- Centre for Health Systems and Safety Research
- Centre for Physical Health



## FACILITIES AND EQUIPMENT

- Anatomy labs with facilities for orthopaedics and radiology
- Australian Hearing Hub
- Australia's first gamma knife
- Cyclotron for the manufacture of radiopharmaceuticals
- da Vinci Surgical System
- Macquarie University Hospital and clinics
- Magnetic resonance imaging (MRI) and positron emission tomography (PET)
- Molecular and cell biology research laboratories
- Motion analysis lab (3D and overground force plates)
- Quantitative sensory testing facility
- Surgical Skills Centre and Simulation Skills Centre
- Virtual reality suite



Vanessa Tan  
PhD candidate

## OUR RESEARCH PRIORITIES

We pursue excellence in a broad range of research areas. Our five interdisciplinary strategic research priorities – Healthy People, Resilient Societies, Prosperous Economies, Secure Planet and Innovative Technologies – respond to globally significant challenges and opportunities to improve the lives of millions. Together, these research priorities provide a focal point for research, with discoveries made under these priorities translating into real improvements in the lives of local, national and global communities.

## JOINTLY SUPERVISED PHD PROGRAMS

Macquarie actively encourages cotutelles and joint degrees – shared supervision arrangements with universities whose research activity strongly aligns with ours. Under each model, you are enrolled at two universities with a principal supervisor at each and may be eligible for additional scholarship support.

[mq.edu.au/cotutelle-and-joint-phd](http://mq.edu.au/cotutelle-and-joint-phd)



### FIND OUT MORE

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[mq.edu.au/research/medicine-and-surgery](http://mq.edu.au/research/medicine-and-surgery)

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