Macquarie is setting new benchmarks in medical research. With the Australian School of Advanced Medicine (ASAM) and the Macquarie University Hospital co-located on the Macquarie campus, medical sciences and surgery HDR candidates have access to a research environment that is unmatched in Australia.

ASAM brings together world-class clinicians, researchers and medical educators to create an innovative training program for medical practitioners and higher degree research candidates. Research activity is focused on future trends in medicine, particularly in cardiology, genetics, infections, molecular biology, neuroscience, vascular science and surgery.

Research efforts are supported by Macquarie University Hospital, Australia’s most technologically advanced private hospital on a university campus, it provides a training ground for clinical and basic research programs in audiology, clinical neuropsychology, clinical psychology, imaging, medicine, surgery and many others. A world leader in neurosurgery, the hospital is home to the country’s only gamma knife, provides the most diversified national robotic surgery program, and houses other high-tech equipment.

As an HDR candidate you will have the unique opportunity to work alongside experts in industry and academia, providing you with an unrivalled research experience, and the opportunity to drive innovation and improve the lives of people around the world.

**AREAS OF SPECIALISATION**
- Blood flow
- Cardiorespiratory neuroscience
- Cardiovascular neuroscience
- Cellular signalling
- Circulation
- Clinical ethics
- Genetics
- Infection and immunity
- Molecular neuroscience
- Neurology
- Neurosurgery
- Orthopaedics
- Pharmacology
- Physical science (medical image processing, radiochemistry, medical physics)
- Vascular surgery
- Visual science

**FACILITIES**
- 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
- Model systems
- More than 2000 square metres of research laboratories for medical research
- Surgical Skills Centre and Simulation Skills Centre
Support

We provide HDR candidates with strong academic and administrative support. This includes:

• discipline-specific research training units, including workshops in research communication, presentation skills, academic writing skills, thesis planning, and poster preparation

• experienced supervisors and department-based higher degree research directors

• financial support for eligible candidates for a range of research-related activities.

Highlights

• Macquarie hosts the Concentration of Research Excellence in Neuroscience, Vascular Sciences and Surgery, which investigates the interaction between the brain and the cardiovascular and respiratory systems. Research into the use of the gamma knife in the treatment of arteriovenous malformations is leading to a non-surgical treatment for these dangerous lesions.

• Macquarie is concentrating its activity on advancing a cure for motor neurone disease.

• The University has recently recruited a group of 30 researchers ranging from basic scientists to clinicians who use techniques that include biochemistry, cell biology, genetics and neurophysiology.

• The Macquarie Cancer Institute is raising the bar in cancer care through research, advanced detection technologies, and integrated care of patients. A current research focus is on the pathogenesis of lymphoedema post breast surgery.

• Research into infectious agents is focusing on the control of infection in the operating theatre.

• Research is being conducted into the development of new drugs for malaria through an innovative genetics approach.