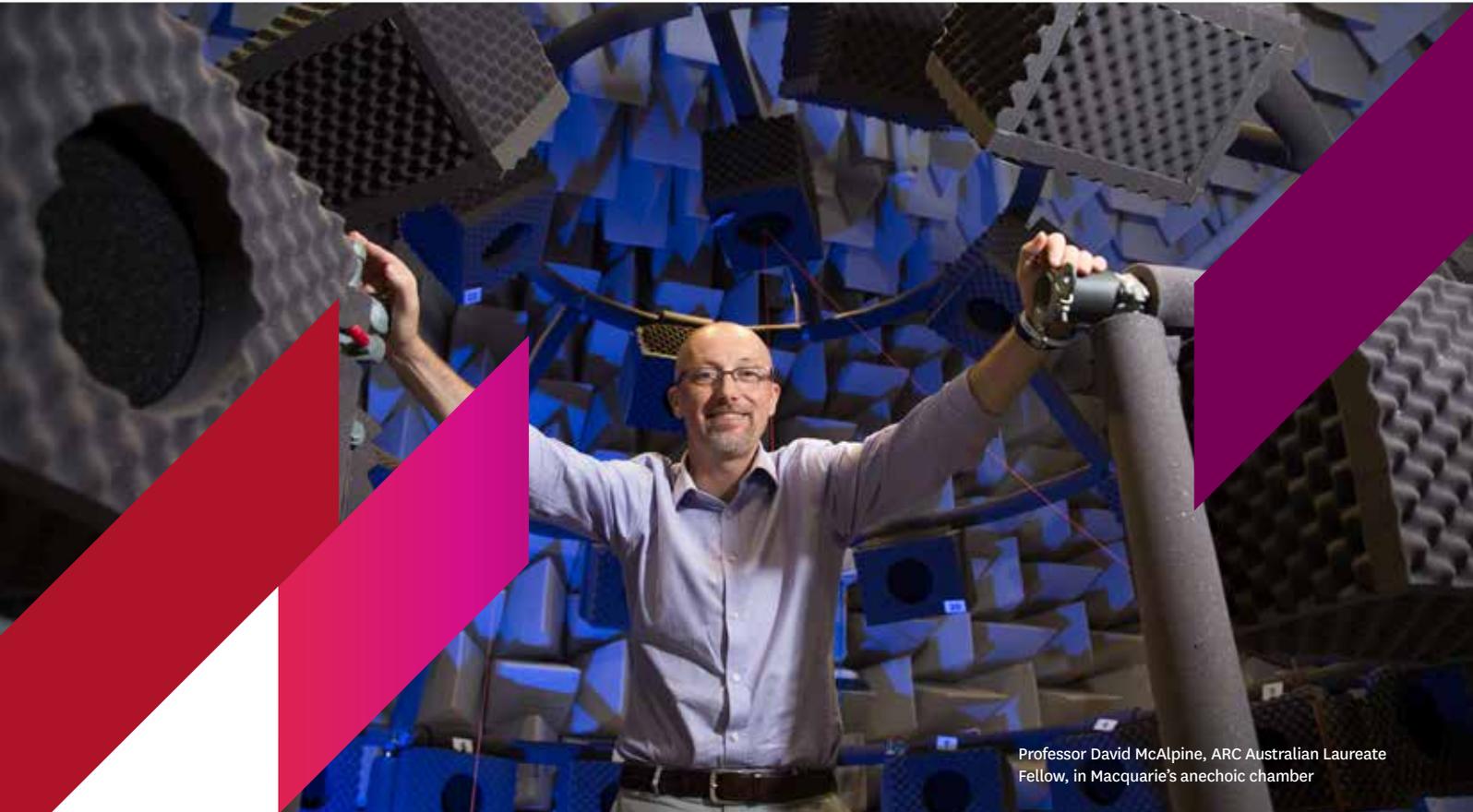


# Health sciences



**MACQUARIE**  
University  
SYDNEY · AUSTRALIA



Professor David McAlpine, ARC Australian Laureate Fellow, in Macquarie's anechoic chamber

From research into paediatric physiotherapy, sporting injuries, chronic obstructive pulmonary disease and chronic pain to the relationship between hearing loss, listening, ageing and dementia, Macquarie's health sciences researchers are uniquely positioned to address the complex issues that face humanity.

Among our leading researchers in health sciences are Distinguished Professor Ron Rapee, who was awarded an ARC Australian Laureate Fellowship to research emotional distress during adolescence; and Professor David McAlpine, another ARC Australian Laureate Fellow, whose research into human auditory pathways and processes should enable new interventions to improve hearing function.

Based at Macquarie, the Australian Hearing Hub is a revolutionary research facility designed to foster innovation. It brings together world-renowned scholars and leading service providers to advance research, education and innovation into hearing, cognition, and speech and language disorders.

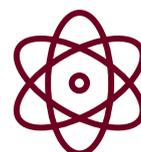
Multidisciplinary researchers from the Australian Institute of Health Innovation, Australia's foremost healthcare systems research institute, are harnessing the data stored in our health records to make predictions about everything from a patient's length of stay in hospital and their risk of infection to the likely effectiveness of particular treatments.

The Macquarie University Simulation Hub co-locates a range of simulation devices, enabling experts from the University and industry to collaborate on translational research across diverse disciplines. It includes labs that simulate tasks such as driving, flight, home activities, work and recreation, and other labs for motion capture and virtual reality.

Another new but rapidly growing area is the Macquarie University Centre for the Health Economy, which undertakes research to calculate the costs and benefits of various health interventions and therapies. The centre complements much of Macquarie's other health research by providing the economic evaluation so necessary to demonstrate the value of new health interventions.

Macquarie also has outstanding physiotherapy, chiropractic and anatomy research facilities, considered to be the best university facilities in the region and among the best in the world.

With more than 22,000 square metres of space for interdisciplinary research, education and innovation, Macquarie offers unparalleled opportunities for research training in an environment that is unmatched in Australia.



## RESEARCH HUBS

- Australian Hearing Hub
- Macquarie University Simulation Hub



#### AREAS OF SPECIALISATION

- Aeroallergens and allergic respiratory diseases
- Anatomy and chiropractic education
- Auditory processing disorders in babies, infants, school-aged children and adults
- Bioactives from Indigenous medicinal plants
- Chiropractic management of common sporting injuries
- Chiropractic practice
- Climate change and human health
- Clinical diagnosis and management of low back pain
- Development of spoken language and reading in young children with hearing impairments
- Development, public health and poverty
- Early intervention for individuals who stutter
- Emotional and mental health
- Environmental health, law, policy and contamination
- Epidemiology, diagnosis and emerging diseases
- Global health
- Health economics
- Health informatics, systems and safety
- Hearing, speech and cognitive disorders across the life span
- Human anatomy
- Listening effort in those with hearing loss
- Manual therapy for chronic obstructive pulmonary disease
- Media and health
- Medical imaging and radiation science
- Neuroscience of acute and chronic back pain
- Physiotherapy practice
- Prognosis and management of musculoskeletal conditions
- Rehabilitation from hearing loss
- Rehabilitation from neurological disorders
- Reproductive health technologies and education
- Social determinants of health
- Spinal orthopaedics
- Tobacco control

#### FACILITIES

- Anechoic chamber that includes a 3D array of 41 loudspeakers used to reproduce acoustic real-world environments
- Centre for Emotional Health
- Centre for Language Sciences
- Chiropractic and anatomy labs with rooms for radiology, orthopaedics, rehabilitation and case management
- Community-based chiropractic clinics
- Environmental Quality Laboratory
- Indigenous Bioresources Research Group
- Macquarie node of the HEARing CRC
- Macquarie Public Health Research Network
- Macquarie University Centre for the Health Economy
- Macquarie University Cognition Clinic for Reading
- Macquarie University Psychology Clinic
- Macquarie University Speech and Hearing Clinic
- Magnetoencephalography (MEG) laboratories for adults and children, and the world's first MEG system for people with cochlear implants
- Optically stimulated luminescence laboratory
- Physiotherapy research lab supplemented by access to the radiology imaging suite at Macquarie University Hospital



#### 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)