POSITION DESCRIPTION

THE UNIVERSITY OF MELBOURNE

Department of Radiology
Melbourne Medical School
Faculty of Medicine, Dentistry & Health Sciences

Colin and Mavis Laing Research Fellow (MRI Scientist)

POSITION NO	0058934
CLASSIFICATION	Level B
SALARY	$110,306 - $130,900 p.a.
SUPERANNUATION	Employer contribution: 17%
WORKING HOURS	Full time (1 FTE)
BASIS OF EMPLOYMENT	Fixed term for 2 years
OTHER BENEFITS	https://about.unimelb.edu.au/careers/staff-benefits
HOW TO APPLY	Online applications are preferred. Go to http://about.unimelb.edu.au/careers, select the relevant option ('Current Opportunities' or 'Jobs available to current staff'), then find the position by title or number.
CONTACT FOR ENQUIRIES ONLY	Professor Patricia Desmond Email: pdesmond@unimelb.edu.au *Please do not send your application to this contact*

For information about working for the University of Melbourne, visit our website:
about.unimelb.edu.au/careers

Acknowledgement of Country

The University of Melbourne acknowledges the Traditional Owners of the unceded land on which we work, learn and live: the Wurundjeri Woi Wurrung and Bunurong peoples (Burnley, Fishermans Bend, Parkville, Southbank and Werribee campuses), the Yorta Yorta Nation (Dookie and Shepparton campuses), and the Dja Dja Wurrung people (Creswick campus).

The University also acknowledges and is grateful to the Traditional Owners, Elders and Knowledge Holders of all Indigenous nations and clans who have been instrumental in our reconciliation journey.

We recognise the unique place held by Aboriginal and Torres Strait Islander peoples as the original owners and custodians of the lands and waterways across the Australian continent, with histories of continuous connection dating back more than 60,000 years. We also acknowledge their enduring cultural practices of caring for Country.

We pay respect to Elders past, present and future, and acknowledge the importance of Indigenous knowledge in the Academy. As a community of researchers, teachers, professional staff and students we are privileged to work and learn every day with Indigenous colleagues and partners.

Position Summary

An MRI scientist is sought to contribute to the research capacity of the University of Melbourne's Department of Radiology. The Department has imaging resources devoted to both patient care and research including magnetic resonance imaging (MRI), X-Ray/CT imaging. Researchers within our centre work closely with Radiologists with the aim to develop new techniques that benefit patients who suffer from neurological disorders (especially stroke and dementia). Our facilities include two 1.5T whole-body MRI systems, three 3.0T whole-body MRI systems and one 7.0T whole-body MRI system (housed at the Florey Institute), an MR sequence development environment (IDEA, ICE), and Siemens site scientist support. The appointee will work closely with a team of senior MRI scientists, with expertise in sequence development, image reconstruction and clinical application.

The appointee will evaluate and apply MRI pulse sequences using high-field MRI scanners with emphasis on imaging of the human brain and spinal cord.

The appointee will have a PhD in neuroscience, medical physics, engineering, physical sciences or in a related field. The appointee will have previous experience in Imaging Science, a demonstrated ability to supervise students and work independently, and must have high level verbal, written, interpersonal and organisational skills.

This position represents an exciting opportunity to join a dynamic multi-disciplinary research team and participate in important research that has the potential to considerably improve the Neuroimaging research landscape in Australia. As a member of the Melbourne Medical School's academic team, the appointee will be expected to support the broad ethos of the School and the School's compliance with university policies and procedures, including environmental health and safety.

We foster a values-based culture of innovation and creativity to enhance the research performance of the University and to achieve excellence in teaching and research outcomes. We invest in developing the careers and wellbeing of our students and staff and expect all our staff to live our values of:

- Collaboration and teamwork
- Compassion
- Respect
- Integrity
- Accountability

1. Key Responsibilities

1.1 RESEARCH AND RESEARCH TRAINING

- To perform independent research and provide research support for the Department of Radiology.
- Advance applications of imaging methods such as perfusion, diffusion and sodium on high-field MRI of the human brain and spine.
- Ability to work collaboratively with clinicians, technologists while respecting patient care.
- Set up, apply and optimize and validate novel MRI sequences focused on neurovascular physiology assessment in the study of neurological disorders (especially stroke and dementia).
- Implement reproducible imaging post processing pipelines.
- Imaging data analysis including development of MR biomarkers (perfusion and diffusion) and integration with clinical data.
- Quantify tissue biomarkers using novel MRI techniques.
- Supervision of graduate students.

1.2 ENGAGEMENT

- Develop relationships and collaborate with national and international partners including researchers and clinicians to assist in building and maintain a strong collaborative research program.
- Participate in community and professional activities related to the relevant disciplinary area.

1.3 LEADERSHIP AND SERVICE

- Actively participate at Department and/or Faculty meetings and contribute to planning or committee work to build capacity in the School/discipline.
- Participate in community and professional activities related to the relevant disciplinary area including attendance and presentations at conferences and seminars.
- Positive engagement in learning and career development of self and others.
- Effective demonstration and promotion of University values including diversity and inclusion and high standards of ethics and integrity.
- Occupational Health and Safety (OH&S) and Environmental Health and Safety (EH&S) responsibilities as outlined in section 5.

2. Selection Criteria

2.1 ESSENTIAL

- A PhD in the area of engineering, neuroscience, medical physics, physical sciences, or a related field.
- Experience in quantitative MR imaging particularly ASL or other perfusion techniques in the brain.
- Expert-level understanding of MRI physics, common MR pulse sequences, RF pulses, and associated principles of spatial encoding and MR image formation.

- Experience with operation and management of MRI scanners.
- Excellent computer science, problem solving, and analytical skills.
- Excellent skills in implementing, evaluating and establishing new imaging approaches in a clinical/research environment.
- Excellent ability to work as part of a team..
- Excellent written and oral (scientific) communication skills.
- Experience with independent writing of scientific conference abstracts and journal papers.
- Ethical scholar who values diversity and works effectively with individual differences.

2.2 DESIRABLE

- Experience in development and validation of MR post processing pipelines.
- Experience in sodium MR imaging
- Familiarity with human neuroanatomy and biophysical properties of brain tissue.
- Familiarity with MRI of brain diseases (especially stroke and dementia).
- Experience with design, development, and implementation of pulse sequences on high-field MRI scanners.
- Understanding of factors that affect MRI image quality and data acquisition time.
- Familiarity with diverse computer operating systems and programming environments (in particular, experience with Unix/Linux, C++, Matlab, Python and distributed high-performance computing highly preferred).
- Experience with data analysis (SPSS, R, SAS etc).
- Experience in supervision of higher degree research students.

3. Equal Opportunity, Diversity and Inclusion

The University is an equal opportunity employer and is committed to providing a workplace free from all forms of unlawful discrimination, harassment, bullying, vilification and victimisation. The University makes decisions on employment, promotion and reward on the basis of merit.

The University is committed to all aspects of equal opportunity, diversity and inclusion in the workplace and to providing all staff, students, contractors, honorary appointees, volunteers and visitors with a safe, respectful and rewarding environment free from all forms of unlawful discrimination, harassment, vilification and victimisation. This commitment is set out in the University's People Strategy 2015-2020 and policies that address diversity and inclusion, equal employment opportunity, discrimination, sexual harassment, bullying and appropriate workplace behaviour. All staff are required to comply with all University policies.

The University values diversity because we recognise that the differences in our people's age, race, ethnicity, culture, gender, nationality, sexual orientation, physical ability and background bring richness to our work environment. Consequently, the People Strategy sets out the strategic aim to drive diversity and inclusion across the University to create an environment where the compounding benefits of a diverse workforce are recognised as vital in our continuous desire to strive for excellence and reach the targets of Growing Esteem.

4. Occupational Health and Safety (OHS)

All staff are required to take reasonable care for their own health and safety and that of other personnel who may be affected by their conduct.

OHS responsibilities applicable to positions are published at:

http://safety.unimelb.edu.au/topics/responsibilities/

These include general staff responsibilities and those additional responsibilities that apply for Managers and Supervisors and other Personnel.

5. Other Information

5.1 RADIOLOGY

The Department Radiology is a large and diverse department in the Melbourne Medical School that undertakes research, postgraduate and undergraduate teaching within the University of Melbourne teaching hospitals. Radiology is situated within across all University of Melbourne teaching hospitals with an Imaging laboratory in The Royal Melbourne Hospital and is adjacent to the Faculty of Medicine, Dentistry and Health Sciences. Areas of special expertise include: neurointerventional radiology, vascular and non-vascular intervention, hepatobiliary imaging and intervention, oncological diagnosis, trauma radiology, breast imaging, musculoskeletal imaging, as well as general and vascular ultrasounds.

5.2 MELBOURNE MEDICAL SCHOOL

http://medicine.unimelb.edu.au/

The Melbourne Medical School (MMS) was established in 1862 and has a substantial international reputation for its leadership in teaching and training, health research, policy and practice. The MMS is committed to working with the communities we serve to improve health and advance health care. We will do this through our teaching, learning, research, clinical care and advocacy.

The MMS is composed of thirteen clinical departments (Clinical Pathology, General Practice, Medical Education, Medicine, Radiology, Obstetrics and Gynaecology, Paediatrics, Psychiatry, Rural Health, Surgery, Infectious Disease, Critical Care and Baker Department of Cardiometabolic Health) which are embedded within clinical health services throughout metropolitan Melbourne and rural Victoria.

The MMS delivers a suite of health-related graduate programs including the Doctor of Medicine (MD), the first professional entry master's level medical program in Australia. The Melbourne MD delivers a fresh approach to medical training and creates a new benchmark in 21st century medical education.

The MMS is committed to improving the wellbeing of the community through the discovery and application of new knowledge. The research effort of the school is highly collaborative and spans basic to translational research and involves over 800 graduate researchers and 1000 academic staff.

The MMS also actively participates in the public debate and advocacy around key health issues and policy based on our values of commitment, integrity, compassion, respect and service.

5.3 FACULTY OF MEDICINE, DENTISTRY AND HEALTH SCIENCES

www.mdhs.unimelb.edu.au

The Faculty of Medicine, Dentistry and Health Sciences has an enviable research record and is the University of Melbourne's largest faculty in terms of management of financial resources, employment of academic and professional staff, teaching of undergraduate and postgraduate (including research higher degree) students and the conduct of basic and applied research. The Faculty's annual revenue is $630M with approximately 55% of this income related to research activities.

The Faculty has a student teaching load in excess of 8,500 equivalent full-time students including more than 1,300 research higher degree students. The Faculty has approximately 2,195 staff comprising 642 professional staff and 1,553 research and teaching staff.

The Faculty has appointed Australia's first Associate Dean (Indigenous Development) to lead the development and implementation of the Faculty's Reconciliation Action Plan (RAP), which will be aligned with the broader University – wide plan. To enable the Faculty to improve its Indigenous expertise knowledge base, the Faculty's RAP will address Indigenous employment, Indigenous student recruitment and retention, Indigenous cultural recognition and building partnerships with the Indigenous community as key areas of development.

5.4 THE UNIVERSITY OF MELBOURNE

Established in 1853, the University of Melbourne is a leading international university with a tradition of excellence in teaching and research. The main campus in Parkville is recognised as the hub of Australia's premier knowledge precinct comprising eight hospitals, many leading research institutes and a wide-range of knowledge-based industries. With outstanding performance in international rankings, the University is at the forefront of higher education in the Asia-Pacific region and the world.

The University employs people of outstanding calibre and offers a unique environment where staff are valued and rewarded.

Further information about working at The University of Melbourne is available at http://about.unimelb.edu.au/careers.

5.5 GROWING ESTEEM, THE MELBOURNE CURRICULUM AND RESEARCH AT MELBOURNE: ENSURING EXCELLENCE AND IMPACT TO 2025

Growing Esteem describes Melbourne's strategy to achieve its aspiration to be a public-spirited and internationally engaged institution, highly regarded for making distinctive contributions to society in research and research training, learning and teaching, and engagement. http://about.unimelb.edu.au/strategy-and-leadership

The University is at the forefront of Australia's changing higher education system and offers a distinctive model of education known collectively as the Melbourne Curriculum. The new educational model, designed for an outstanding experience for all students, is based on six broad undergraduate programs followed by a graduate professional degree, research higher degree or entry directly into employment. The emphasis on academic breadth as well as disciplinary depth in the new degrees ensures that graduates will have the capacity to succeed in a world where knowledge boundaries are shifting and

reforming to create new frontiers and challenges. In moving to the new model, the University is also aligning itself with the best of emerging European and Asian practice and well-established North American traditions.

The University's global aspirations seek to make significant contributions to major social, economic and environmental challenges. Accordingly, the University's research strategy *Research at Melbourne: Ensuring Excellence and Impact to 2025* aspires to a significant advancement in the excellence and impact of its research outputs. http://research.unimelb.edu.au/our-research/research-at-melbourne

The strategy recognises that as a public-spirited, research-intensive institution of the future, the University must strive to make a tangible impact in Australia and the world, working across disciplinary and sectoral boundaries and building deeper and more substantive engagement with industry, collaborators and partners. While cultivating the fundamental enabling disciplines through investigator-driven research, the University has adopted three grand challenges aspiring to solve some of the most difficult problems facing our world in the next century. These Grand Challenges include:

- Understanding our place and purpose – The place and purpose grand challenge centres on understanding all aspects of our national identity, with a focus on Australia's 'place' in the Asia-Pacific region and the world, and on our 'purpose' or mission to improve all dimensions of the human condition through our research.
- Fostering health and wellbeing – The health and wellbeing grand challenge focuses on building the scale and breadth of our capabilities in population and global health; on harnessing our contribution to the 'convergence revolution' of biomedical and health research, bringing together the life sciences, engineering and the physical sciences; and on addressing the physical, mental and social aspects of wellbeing by looking beyond the traditional boundaries of biomedicine.
- Supporting sustainability and resilience – The sustainability and resilience grand challenge addresses the critical issues of climate change, water and food security, sustainable energy and designing resilient cities and regions. In addition to the technical aspects, this grand challenge considers the physical and social functioning of cities, connecting physical phenomena with lessons from our past, and the implications of the technical solutions for economies, living patterns and behaviours.

Essential to tackling these challenges, an outstanding faculty, high performing students, wide collaboration including internationally and deep partnerships with external parties form central components of Research at Melbourne: Ensuring Excellence and Impact to 2025.

5.6 GOVERNANCE

The Vice Chancellor is the Chief Executive Officer of the University and responsible to Council for the good management of the University.

Comprehensive information about the University of Melbourne and its governance structure is available at http://www.unimelb.edu.au/governance