POSITION DESCRIPTION

Position Title: Postdoctoral Research Fellow
Organisation Unit: Queensland Brain Institute
Position Number: NEW
Type of Employment: Full time, Fixed term until 31 December 2021
Classification: Academic Research Level A

THE UNIVERSITY OF QUEENSLAND

The University of Queensland (UQ) contributes positively to society by engaging in the creation, preservation, transfer and application of knowledge. UQ helps shape the future by bringing together and developing leaders in their fields to inspire the next generation and to advance ideas that benefit the world. UQ strives for the personal and professional success of its students, staff and alumni. For more than a century, we have educated and worked with outstanding people to deliver knowledge leadership for a better world.

UQ ranks in the world’s top universities, as measured by several key independent ranking, including the CWTS Leiden Ranking (32), the Performance Ranking of Scientific Papers for World Universities (43), the US News Best Global Universities Rankings (42), QS World University Rankings (48), Academic Ranking of World Universities (55), and the Times Higher Education World University Rankings (69). Excluding the award component, UQ is now ranked 45th in the world in the ARWU, and is one of the only two Australian universities to be included in the global top 50.

UQ has an outstanding reputation for the quality of its teachers, its educational programs and employment outcomes for its students. Our students remain at the heart of what we do. The UQ experience – the UQ Advantage – is distinguished by a research enriched curriculum, international collaborations, industry engagement and opportunities that nurture and develop future leaders. UQ has a strong focus on teaching excellence, winning more national teaching excellence awards than any other in the country and attracting the majority of Queensland’s highest academic achievers, as well as top interstate and overseas students.

UQ is one of Australia’s Group of Eight, a charter member of edX and a founding member of Universitas 21, an international consortium of leading research-intensive universities.

Our 52,000-plus strong student community includes more than 16,400 postgraduate scholars and more than 15,400 international students from 135 countries, adding to its proud 250,000-plus alumni. The University has more than 6,600 academic and professional staff (full-time equivalent) and a $1.75 billion annual operating budget. Its major campuses are at St Lucia, Gatton and Herston, in addition to teaching and research sites around Queensland and Brisbane city. The University has six Faculties and four University-level Institutes. The Institutes, funded by government and industry grants, philanthropy and commercialisation activities, have built scale and focus in research areas in neuroscience, biomolecular and
biomedical sciences, sustainable minerals, bioengineering and nanotechnology, as well as social science research.

UQ has an outstanding track-record in commercialisation of our innovation with major technologies employed across the globe and integral to gross product sales of $11billion+ (see http://uniquest.com.au/our-track-record).

UQ has a rapidly growing record of attracting philanthropic support for its activities and this will be a strategic focus going forward.

**Organisational Environment**

The Queensland Brain Institute works to understand the development, organisation and function of the brain. We aim to understand the neural circuits in the brain, how their function results in behavioural outcomes, and how dysfunction of these circuits leads to disorders such as dementia, Parkinson’s disease and schizophrenia. We aim to (1) Develop novel therapeutic approaches to treat disorders of neural function and (2) Use our understanding of brain function to improve learning in classrooms and in the workplace.

Established in 2003, QBI is housed on the St Lucia campus of UQ. It is home to more than 450 staff and students, including 41 group leaders.

Over the past decade QBI has become known as one of the world’s leading neuroscience research institutes. It played a key role in contributing to UQ attaining the highest possible score of 5 for neuroscience, in both the 2010, 2012, and 2015 Excellence in Research for Australia (ERA) reviews, one of only two universities in Australia to achieve this. Details of the current QBI interdisciplinary research programs can be found at http://www.qbi.uq.edu.au

**Information for Prospective Staff**

Information about life at UQ including staff benefits, relocation and UQ campuses is available at - http://www.uq.edu.au/current-staff/working-at-uq

The University of Queensland Enterprise Agreement outlines the position classification standards for Levels A to E.

**DUTY STATEMENT**

**Primary Purpose of Position**

The goal of this project is to understand the brain functional changes in Alzheimer’s disease and the complication with sleep apnoea and cholinergic dysregulation. Glymphatic system is a newly identified clearance system in the brain, which has been associated with removal of toxins, such as amyloid plaques in Alzheimer. However, limited in vivo tool is available to measure the function of the glymphatic system.

The primary purpose of the position is to develop Magnetic Resonance Imaging (MRI) techniques for mapping the dynamics of glymphatic flow non-invasively and to understand its relationship with cerebral blood flow, oxygenation, functional connectivity, behaviour and disease progression in mouse models. We will validate the findings using chemo-/opto-genetic manipulations and histology in animal models. This will require extensive method development, functional imaging with MRI, kinetic analysis and data processing. The results will be compared with human data from Alzheimer and sleep apnoea patients.
**Duties**

Duties and responsibilities include, but are not limited to:

- Conduct research and experiment to understand connectivity and brain function in rodents.
- Publish high quality papers and contribute to the disciplined academic environment of the laboratory and the institute.
- Acquire and maintain familiarity with relevant scientific literature and contribute to the academic environment of the laboratory and institute.
- Present results of research at meetings at all levels – laboratory, institutional, national and international as appropriate.
- Contribute to safe laboratory working environment.
- Contribute to supervision of junior members and students within the laboratory and to the smooth running of the laboratory.
- Any other duties as reasonably directed by your supervisor

**Other**

Ensure you are aware of and comply with legislation and University policy relevant to the duties undertaken, including but not exclusive to:

- the [University’s Code of Conduct](#)
- requirements of the Queensland occupational health and safety (OH&S) legislation and related [OH&S responsibilities and procedures](#) developed by the University or Institute/School
- the adoption of sustainable practices in all work activities and compliance with associated legislation and related University [sustainability responsibilities and procedures](#)
- requirements of the Education Services for Overseas Students Act 2000, the National Code 2007 and associated legislation, and related [responsibilities and procedures](#) developed by the University

**Organisational Relationships**

The position reports to Prof Elizabeth Coulson.

**SELECTION CRITERIA**

**Essential**

- PhD in the area of neuroscience, biomedical engineering, medical physics or related field.
- Demonstrated track records and expert knowledge in the area of functional MRI and fMRI data analysis or kinetic modelling
- Experience in programming language (Matlab or C/C++)
- Demonstrated organisational ability, attention to detail and good record-keeping skills
• Excellent verbal and communication skills
• Initiative and problem solving skills
• Awareness of laboratory safety, occupational health and safety protocols
• An ability to establish effective relationships and to represent and promote academic discipline at a university and wider community level, including industry, government and professional bodies.
• Evidence of a contribution to research, including successful external grant applications.
• Ability to work collaboratively with colleagues.
• Commitment to upholding the University’s values, and with the outstanding personal qualities of openness, respectfulness and integrity

Desirable

• Experience in MRI pulse sequence development and small animal imaging

Qualification Verification
An appointment to this position is subject to the verification of the highest academic qualification from the conferring institution.

The University of Queensland values diversity and inclusion and actively encourages applications from those who bring diversity to the University. Please refer to the University’s Diversity and Inclusion webpage (http://www.uq.edu.au/equity) for further information and points of contact if you require additional support.

This role is a full-time position; however flexible working arrangements may be negotiated.

Accessibility requirements and/or adjustments can be directed to hr.qbi@uq.edu.au