



THE UNIVERSITY
OF QUEENSLAND
AUSTRALIA

POSITION DESCRIPTION

Position Title:	Postdoctoral Research Fellow
Organisation Unit:	Queensland Brain Institute
Position Number:	3032439
Type of Employment:	Full Time, Fixed Term for 2 years
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 Performance Ranking of Scientific Papers for World Universities (43), the US News Best Global Universities Rankings (52), QS World University Rankings (47), Academic Ranking of World Universities (55), and the Times Higher Education World University Rankings (65). UQ again topped the nation in the prestigious Nature Index and our Life Sciences subject field ranking in the Academic Ranking of World Universities was the highest in Australia at 20.

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 50,000-plus strong student community includes more than 13,000 postgraduate scholars and more than 12,000 international students from 144 countries, adding to its proud 240,000-plus alumni. The University has about 7,000 academic and professional staff and a \$1.8 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://uniquet.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. QBI has state-of-the-art core facilities for super resolution microscopy, flow cytometry, molecular genetics, histochemistry and behavioural testing. Access is also available to an advanced imaging facility, including 16.4T MRI, 9.4T MRI (with cryoprobe), 7T MR-PET and microPET/CT for animal imaging, and 7T, 3T and PET/CT for human imaging, housed in the Centre for Advanced Imaging.

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

Large-scale infra-slow synchronous network has been identified in mammalian brain at the resting state which implicates the spontaneous organization of the brain. However the neural basis and function of these resting-state networks are largely unknown. The primary purpose of the position is to determine learning-dependent neuroplasticity of the resting-state networks and its relationship with synaptic plasticity, neurophysiology and behaviour using rodent models. We will use functional MRI to track the plasticity of functional networks after behavioural trainings, and then validate the findings using chemo-/opto-genetic manipulations together with calcium imaging. This will require extensive behavioural experiments, stereotaxic surgery and *in vivo* imaging on ultrahigh field 9.4T animal MRI and fluorescent microscopy.

Duties

Duties and responsibilities include, but are not limited to:

- Conduct research and experiment to understand resting-state functional connectivity, neurophysiology and behaviour 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.

Other

Ensure you are aware of and comply with legislation and University policy relevant to the duties undertaken, including:

- 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 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 A/Prof Kai-Hsiang Chuang.

SELECTION CRITERIA

Essential

- PhD in the area of *neuroscience, biomedical engineering, medical physics, or related fields*.
- Demonstrated expert knowledge and experience in animal fMRI, fMRI data analysis using SPM or FSL, and programming language (Matlab or C/C++ and shell script).
- Experience in *in vivo* optogenetic study and/or calcium recording are preferable.
- Excellent attention to detail.
- Demonstrated organisational ability and good record-keeping skills.
- Self-reliance and motivation.
- High level interpersonal skills.

- Excellent verbal and communication skills.
- Initiative and problem solving skills.
- Awareness of laboratory safety, occupational health and safety protocols.
- Evidence of a contribution to research, including successful external grant applications.
- Ability to work collaboratively with colleagues.

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 the contact person listed in the job advertisement.