POSITION DESCRIPTION

Position Title: Senior Research Assistant
Organisation Unit: Queensland Brain Institute
Position Number: 3040372
Type of Employment: Fixed term, full time for 12 months
Classification: Hew Level 6

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://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.

QUEENSLAND BRAIN INSTITUTE

Established in 2003, QBI (www.qbi.uq.edu.au) is housed on the St Lucia campus of UQ. It is home to more than 450 staff and students, including 41 group leaders, working across a range of disciplines, focused on discovering the fundamental mechanisms that regulate brain development and function in health and disease.

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.

QBI has state of the art neuroimaging and computing facilities
- 64-channel EEG system
- TMS system
- High performance computing infrastructure of 1200 cores, 5TB of RAM, 400TB of solid state disk assisted storage and a 10GbE + Infiniband connected cluster network
- High performance storage infrastructure 1PB of HSM disk, tape and enterprise SSD/NAND flash devices. The high performance disk (400TB) is capable of moving 4.5GB/sec of internal IO.
- Virtualization cluster running latest VMware ESX i4.1 series hypervisor
- Networking infrastructure 10Gbit/sec between all core switching with GbE switching to every desktop and device in QBI

THE CENTRE FOR ADVANCED IMAGING

The Centre for Advanced Imaging (CAI) is a strategic initiative of The University of Queensland, reflecting the growth in biotechnology, biomedical and materials research requiring advanced imaging capabilities. As a leading imaging research facility in Australia, and one of a handful in the world, CAI brings together the skills of a critical mass of researchers and 'state-of-the-art', world- or Australian-first research imaging instruments.

NMR, EPR, MRI, PET, CT and optical imaging are now key platform research technologies for studying the structure and function of biomolecules and living organisms, from proteins to the human.

CAI conducts research across the spectrum from development of new imaging technologies, analysis of molecular structure, synthesis of MRI and PET biomarkers targeting fundamental biological processes to studies of major diseases, such as neurodegenerative disorders, cancer and cardiovascular disease, affecting a range of organ systems, through to imaging economically significant agricultural animals and plant material, minerals and construction materials.

Further details on the Centre for Advanced imaging and the research interests of its staff can be found on CAI’s website http://www.cai.uq.edu.au/

Computational Cognitive Neuroscience Laboratory
Our research, led by Dr Marta Garrido is theoretically driven by ideas of Predictive Coding, a computational framework that posits the brain is a predictive, efficient and adaptive machine. The main goal of the group is to understand how the brain’s circuitry implements these mechanisms, which enable us to make predictions about future events as well as learn about, and adapt to, the contingencies of a novel environment. Along with our work on typical cognition in healthy human individuals, our mission is to contribute to the understanding of mental illness, in particular to those conditions where predictive processes and brain circuitry are disrupted such as in schizophrenia and anxiety. To pursue this endeavour we use a combination of computational modelling, machine learning and brain imaging techniques such as magnetoencephalography (MEG), electroencephalography (EEG), and magnetic resonance imaging (MRI).

For more information on the lab please visit the our website.

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](http://www.uq.edu.au/current-staff/working-at-uq)

DUTY STATEMENT

Primary Purpose of Position

We are seeking a highly motivated Senior Research Assistant to join our team. The successful applicant will have a strong background in analytical tools for neuroimaging data, signal processing and computational modelling.

The RA position will assist Dr Marta Garrido with data collection and analysis of electroencephalographic (EEG), magnetoencephalographic (MEG), and Magnetic Resonance Imaging (MRI) data recorded in healthy individuals and patients with mental health disorders. Projects may involve:

- Acquisition and analysis of EEG/MEG/fMRI/DWI data
- Implementation of novel statistical analysis and computational modelling approaches
- Preparation of manuscript for publication

Duties

Duties and responsibilities include, but are not limited to:

Primary responsibilities:
- Analysis of data generated at QBI, by collaborators, or in the public domain
- Preparation of results for publication
- Contributing to the research environment
- Presentation of results in lab meetings
- Attendance at lab meetings and institute seminars
- Displaying a good work ethic
- Administrative aspects that underlie scientific research
- Development of timelines in discussion with line manager
- Record-keeping
• Collaboration with other group members, and as part of national and international colleagues

**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 [Dr. Marta Garrido](mailto:m.garrido@uq.edu.au).

**SELECTION CRITERIA**

**Qualifications**

*Essential*

- BSc in neuroscience, computer science, mathematics, psychology, statistics, physics, engineering, or related field with relevant experience.

**Knowledge and Skills**

*Essential*

- Knowledge of the principles of EEG, MEG, and fMRI.
- Knowledge of computer programming.
- Knowledge of statistics.
- Knowledge of machine learning.

**Experience**

*Essential*

- Experience in the analysis of neuroimaging data (M/EEG and/or fMRI).
- Past track record in neuroimaging related research.

**Personal Qualities**

*Essential*

- Good attention to detail.
- Demonstrated organisational skills
- Good record-keeping skills.
- Self-reliance and motivation.
- Good interpersonal skills.
- Good verbal and communication skills.
- Ability to work collaboratively with colleagues.
- Initiative and problem solving skills.
• Ability to meet deadlines.

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.