POSITION DESCRIPTION

Position Title: Research Assistant
Organisation Unit: Institute for Molecular Bioscience
Position Number: 3042405
Type of Employment: Fixed Term
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 (45), QS World University Rankings (48), Academic Ranking of World Universities (55), and the Times Higher Education World University Rankings (69). UQ again topped the nation in the prestigious Nature Index, and our Academic Ranking of World Universities result in the field of Life and Agricultural Sciences is 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.

Organisational Environment

The University of Queensland’s Institute for Molecular Bioscience, located on the main University campus, is Australia’s leading biosciences research institute. Established in 2000, the Institute is home to over 420 staff and is located in thriving Brisbane, a city consistently ranked as one of the world’s most vibrant and livable cities.

The Institute, ranked in the Top 20 globally for life sciences research, pursues a multidisciplinary approach to solving some of the world’s most serious challenges in the fields of health, disease and sustainable solutions for our cities, fuels and foods. The Institute is housed in a single building and is organized into technological platforms (Divisions) and research themes (Centres). The Divisions support state-of-the-art facilities including the Centre for Microscopy and Microanalysis, which houses new cryo-electron microscopes; the NMR facility containing 500, 600 and 900 MHz machines; the Mass Spectrometry Facility accommodating a wide array of instrumentation; suites for work with a variety of model organisms; a plethora of next generation DNA sequencing technologies and the southern hemispheres leading program in complex genetic traits. The Research Centres accommodate 36 groups using a combination of genomics, chemistry and cell biology to take life science discoveries from the genome to drug design and application in the areas of antimicrobial resistance, inflammation, pain, cardiovascular disease and rare and developmental diseases.

The quality of our internationally recognised researchers underpins our research excellence. Over the past five years, our group leaders have attracted nearly $250 M in research funding. They have leveraged funding from over 40 different national and international research sponsors including significant support from federal and state government sources. The success rate in federal funding schemes is amongst the highest in all of Australia. The accomplishment of our staff is reflected by the consistent contribution they make to the prestigious Nature science index and by the fact five are listed in the prominent 2018 Clarivate Highly Cited Researchers List.

A cornerstone of the Institute is the strong emphasis on ensuring our discovery science has impact by translating our research discoveries to meet industry, community and clinical needs. The Institute has generated more than 30 patent families and has spun out multiple companies. The impact of our work is illustrated by two biopharmaceutical companies founded in the Institute, Protagonist Therapeutics Ltd and Inflazome Ltd. The former company entered into a $1 B worldwide agreement to co-develop a drug for inflammatory bowel disease and the latter recently received $70 M to develop treatments for inflammatory diseases. Our ambition to strengthen our translational portfolio continues. For example, in the last 12 months researchers from the IMB:

• were part of a successful push to put endometriosis on the national agenda to improve understanding, treatment and support of this debilitating disease
• identified genetic factors contributing to the risk of developing diseases like endometriosis and motor neurone disease, advancing our understanding of these disorders on a global scale
• discovered a new type of cell in the brain that mops up cellular waste and may provide protection against stroke and dementia
• discovered a small protein in spider venom that could prevent the devastating brain damage caused by stroke
• discovered we could shrink brain tumours using existing breast cancer treatments
• found a promising potential treatment for breast cancer that blocked cancer spread and improved survival rates in models
• discovered a molecular trigger for inflammation that could lead to new treatments for rheumatoid arthritis, inflammatory bowel disease and neurodegenerative diseases
• furthered research in development of new medicines for treating inflammatory diseases, including allergies, by building molecular switches that can control immune response
• as part of a global team, identified a new gene behind a rare form of inherited childhood kidney disease
• combated superbugs by creating a new diagnostic, repurposing old drugs and continuing to crowdsource the next antibiotic
• developed the first new therapy in over 30 years to be used successfully in patients to treat antibiotic resistant infections
• helped an Australian family-owned company create the first mass-produced organic insecticide from peptides found in the Butterfly Pea plant
• initiated a program to use algae to produce clean water, livestock feeds, foods, fuels and medicines

IMB’s research outcomes are protected and commercialised by UQ-owned technology transfer group UniQuest.

Information for Prospective Staff

The Institute recognises and values equity and diversity, and encourages applications from any individual who meets the requirements of this position irrespective of gender, sexuality, race, ethnicity, religion, disability, age or other protected attributes.

IMB strives to provide an inclusive working environment, and along with the University is committed to supporting staff with family and caring responsibilities by providing policies, programs and initiatives to help balance work and family responsibilities.

Specific initiatives at IMB can be found at (https://imb.uq.edu.au/about/equity-and-diversity-imb)

Further 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

DUTY STATEMENT

Primary Purpose of Position

The successful applicant will join the Genome Innovation Hub (GIH) at IMB. The GIH is a major UQ initiative that aims to develop innovative approaches to advance technologies in cellular genomics across the university. The aim of the “Genome Innovation Hub” is to develop at UQ an experimental, technological and computational innovation hub focussed on the structural and functional analysis of genomes. This will involve implementing the most advanced and promising methodologies developed both at UQ and elsewhere; extending these techniques to address specific questions of interest to UQ researchers and assisting researchers to apply these techniques in the three key areas of health, agriculture and the environment. The successful candidate will be responsible for developing algorithms
and implementing tools and pipelines for analysis of predominantly single cell sequence data.

**Duties**

Duties and responsibilities include, but are not limited to:

- Design and implementation of robust software for analysis of genomics data including single cell sequence data.
- Developing and implementing approaches for testing and benchmarking novel algorithms.
- Carefully documenting all procedures and code.
- Setting up pipelines for single cell (and long read) analyses.
- Application of software and/or pipelines to data generated by the Genome Innovation Hub.
- Identifying opportunities for novel high-impact research.
- Maintaining awareness of broad capabilities and emerging tools in single cell and long read sequencing.
- Liaising with other members of the laboratory and with collaborators.
- Maintaining and supporting the GIH lab information system.
- Providing reports on projects for collaborators and GIH supervisors.
- Other duties as assigned by the GIH Operations Manager and academic directors.

**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 formal lines of reporting for this position are through the GIH Operations Manager and Professor Grant Montgomery (Director GIH), with day to day reporting to Dr Jessica Mar, academic lead of bioinformatics and computational biology for the GIH.
SELECTION CRITERIA

Essential

- A postgraduate degree in Bioinformatics or Computer Science; or an equivalent combination of relevant expertise, education and training.
- Experience in scientific programming and scripting, especially python and R.
- Experience with genome and/or transcriptome assembly.
- Familiarity with high performance computing.
- Background in development of open source software in bioinformatics.
- Experience in development, setup and application of single cell analysis software and pipelines.
- Meticulous attention to detail and rigorous time management skills with the ability to maintain detailed record keeping for multiple concurrent projects.
- A high level of communication skills to successfully communicate project progress (including written and verbal reports).
- The ability to work collaboratively with colleagues to successfully complete concurrent complex projects.
- High level of professional integrity, with sound organisational, problem-solving and methodological troubleshooting skills.
- The ability to maintain and support the GIH lab information system, or the ability to rapidly acquire the knowledge to do so.

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 1 year position.

Accessibility requirements and/or adjustments can be directed to (Aowei Campanu).