POSITION DESCRIPTION

Position Title: Research Fellow
Organisation Unit: Australian Institute for Bioengineering and Nanotechnology
Position Number: 3042295
Type of Employment: Full time, Fixed-term for three years
Classification: Research Academic Level B

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.

Organisational Environment

The University of Queensland's Australian Institute for Bioengineering and Nanotechnology (AIBN) is a dynamic multi-disciplinary research institute dedicated to developing technology to alleviate societal problems in the areas of health, energy, manufacturing and environmental sustainability. AIBN brings together the skills of more than 450 world-class researchers complimented by an extensive suite of integrated facilities, working at the intersection of biology, chemistry, engineering and computer modelling. With a reputation for delivering translational science, AIBN conducts research at the forefront of emerging technologies, and has developed strong collaborations with leading members of industry, academia and government. AIBN goes beyond basic research to develop the growth of innovative industries for the benefit of the Queensland and Australian economies. Information about the Institute can be accessed on the Institute’s web site at http://www.aibn.uq.edu.au/.

AIBN is committed to supporting the career growth of female researchers and have a number of initiatives to support females in developing and achieving a fulfilling research career at the institute. For more information, please visit our AIBN Women in Science web site at http://www.aibn.uq.edu.au/women.

A newly established group, led by A/Prof Mar, centres on developing cutting-edge single cell bioinformatics methods to address questions in stem cell biology and human disease https://aibn.uq.edu.au/group-aibn/mar-group

The focus of the Mar lab is to understand how variability and heterogeneity in biological signals affect the regulation of cell phenotypes. Our approaches explore the link between variability at the transcriptional level, with other ‘omic data types, as well as integrating patient biometric data, drug responses, or other cellular markers. Since we are interested in modelling how attributes like robustness and plasticity affect cells, a big area of research for the group is in stem cell biology. A focus on understanding heterogeneity has led us to the exciting area of single cell bioinformatics where variability is a very important aspect for understanding cell phenotypes.

The Mar lab is also a member of the recently-formed UQ Centre in Stem Cell Ageing and Regenerative Engineering (UQ-StemCARE; http://www.aibn.uq.edu.au/uq-stemcare), located within the AIBN which brings together UQ’s leading researchers in stem cell biology, bioengineering, neural, vascular, and musculo-skeletal biology, genome biology, proteomics, bioinformatics, and clinical ageing-related research. As a bioinformatics group, the Mar lab collaborates widely with different researchers, and the postdoctoral fellow will be involved in StemCARE-related collaborations.

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 Research Fellow will be responsible for driving high impact research that centres on the statistical analysis of single cell RNA-sequencing data, as well as the development of novel bioinformatics methods for these types of data.

Duties

Duties and responsibilities include, but are not limited to:

Research

- Conduct research independently for a set of main projects, and collaboratively as a member of a team
- Specific research duties include the development of novel bioinformatics approaches and full testing and maintenance of software to ensure established rigor and reproducibility of these tools
- Apply existing computational pipelines and implement appropriate statistical analyses to different types of omics data that investigate a specific scientific question
- Identify sources of data sets, either through the public domain and/or collaborations that form the basis for projects that will help further the group’s research program
- Make significant contributions to publications arising from research in the group, including in the form of peer-reviewed publications and conference presentations
- Maintain familiarity with the scientific literature and to actively support other members of the group to understand and follow the scientific literature as well

Service and Engagement

- Actively participate in the communication and dissemination of research arising from the group at multiple levels, including laboratory, institutional, national, and international.
- Apply for external funding opportunities, either collaboratively or independently, depending on the mechanism to promote the group’s research.
- Co-supervise postgraduate research projects and provide training and mentorship to more junior staff in the group
- Contribute to collaborations that support and build the group’s research program
- 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
- 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 Group Leader, A/Prof Jessica Mar.

SELECTION CRITERIA

**Essential**

- A PhD in computational biology, bioinformatics, biostatistics, or a related field
- Applied research experience in a domain from the biomedical sciences, e.g. stem cell biology, cancer biology, genetics of human disease, or development biology.
- Contributions to peer-reviewed publications, including first author publications, and applications to external grant programs
- Demonstrated ability to design, conduct, and interpret statistical analyses of omics data independently, and to drive research towards productive endpoints.
- Excellent programming skills in R and/or Python
- Experience working with next generation sequencing data, especially single cell RNA-sequencing data
- An effective and productive scientist who can engage in team work with clear and attentive communication skills

**Desirable**

- Experience with integrative omics analysis
- High performance computing skills
- Knowledge in Bayesian statistics

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.

Accessibility requirements and/or adjustments can be directed to the contact person listed in the job advertisement.