POSITION DESCRIPTION

Position Title: Research Officer
Organisation Unit: Institute for Molecular Bioscience
Position Number: 3018991
Type of Employment: Full time fixed term for 12 months
Classification: Research Academic 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 $11 billion+ (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 (IMB) is a leading global life sciences research institute committed to improving quality of life through research. IMB was established in 2000 as UQ’s first research institute and is the cornerstone of one of the largest bioscience research precincts in Australia.

The Institute is home to more than 450 researchers, postgraduate students and support staff from more than 40 countries who work in partnership with their academic, industry and clinical colleagues around the world to advance knowledge in areas including pain, rare diseases, inflammation, superbug infection, cardiovascular disease, environmental research, drug discovery and development, cancer, diabetes and obesity, and reproductive health. Our mission is to drive the bioeconomy and create better health; our vision is to be a life sciences institute with global impact.

By investigating how we grow and develop at the genetic, molecular, cellular and organ levels, IMB researchers can better understand the development processes and pathways involved in human and animal health and disease. The institute also has the technical capacity to translate its new knowledge into drugs, diagnostics and technologies to more effectively prevent, detect and treat disease; and pursue opportunities in a range of biotechnology applications for health, industry and the environment.

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

Details of the research interests of the Institute may be accessed on the Institute’s website at: http://www.imb.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 successful applicant will use advanced molecular modelling techniques, molecular dynamics, computational methods and novel software to discover and rationally design modulators of protein-protein interactions, GPCRs and ion channels. The applicant will also have intimate knowledge of MAIT cells and antigen protein presentation and trafficking.
**Duties**

Duties and responsibilities include, but are not limited to:

**Research**

- Conducting molecular dynamic simulations on protein-protein interaction complexes such as MHC1-related protein and T cell receptor interaction to study the molecular basis of the activation of inhibition mechanism. This requires knowledge of protein-protein interactions, hot spot analysis, interaction energy calculations, and relevant insights in adaptive immunity.

- Conducting computer aided hit-to-lead structure-based ligand design of potent and selective enzyme inhibitors and small molecule modulators of membrane proteins such as GPCRs. This requires strong knowledge and experience in protein structure analysis, molecular model construction, ligand docking and protein-protein interactions. The applicant should also have published computational chemistry in relation to design of biased ligands for GPCRs.

- Conducting structure based drug design of selective and potent human and parasitic HDACs. This requires knowledge of protein-ligand interactions and medicinal chemistry to collaborate with synthetic chemists for the rationale design of novel drug leads that possess excellent drug-like properties for further development into pre-clinical candidates.

- Liaising with other members of the laboratory and providing computer modelling support to their research projects, either directly or through training of other researchers in computational techniques.

- Preparation of data for reports to other researchers, for publication in high quality international journals, and for presentation to investors.

- Supervising junior staff and students and contribution to the smooth running of a busy and productive 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 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, Professor David Fairlie.
SELECTION CRITERIA

**Essential**

- Ph.D in molecular modelling, computational chemistry, biochemistry, immunology.
- Experience in all of the following:
  - Molecular modelling
  - Ligand docking
  - Virtual screening
  - Molecular dynamics simulations
  - Enzyme assays
  - GPCR functional assays
  - Hit-to-lead development using in silico and structural methods
  - Ability to achieve international benchmark standards of excellence in research.
  - Demonstrable enthusiasm for overall aims of the project.
  - Ability to work independently but in the context of a busy communal laboratory.
  - Sound organisational and problem-solving skills.
  - Ability to communicate well and work collaboratively with team colleagues.

**Qualification Verification**

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

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The University of Queensland values diversity and inclusion.

Applications are particularly encouraged from Aboriginal and Torres Strait Islander peoples. For further information please contact our Australian Indigenous Employment Coordinator at: atsi_recruitment@uq.edu.au

Applications are also encouraged from women.

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