POSITION DESCRIPTION

Position Title: Postdoctoral Research Fellow - Theory and Computation of Nonequilibrium Systems

Organisation Unit: Australian Institute for Bioengineering and Nanotechnology

Position Number: 3049643

Type of Employment: Fixed-term, Full time

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 CWTS Leiden Ranking (32), the Performance Ranking of Scientific Papers for World Universities (40), the US News Best Global Universities Rankings (42), QS World University Rankings (47), Academic Ranking of World Universities (54), and the Times Higher Education World University Rankings (66). Excluding the award component, UQ is now ranked 45th in the world in the ARWU, and is one of the only two Australian universities to be included in the global top 50.

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 53,000-plus strong student community includes more than 16,400 postgraduate scholars and more than 17,000 international students from 135 countries, adding to its proud 260,000-plus alumni. The University has more than 6,600 academic and professional staff (full-time equivalent) and a $2.15 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+.

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.

Information for Prospective Staff

Information about life at UQ including staff benefits, relocation and UQ campuses is available online.

The University of Queensland Enterprise Agreement outlines the position classification standards for Levels A to E.

DUTY STATEMENT

Primary Purpose of Position

The Postdoctoral Research Fellow will carry out research that will contribute to development of algorithms for the simulation of nonequilibrium fluids. They will be part of a team aiming to develop a better understanding of nonequilibrium systems through theory development, simulation and study of nonequilibrium systems relevant to fields such as energy storage systems and polymer processing. A major goal of this research will be to develop and implement new theoretical and computational methods to allow the size and timescales of simulations of nonequilibrium systems to be increased.
Duties
Duties and responsibilities include, but are not limited to:

Research
- Conduct research that develops and implements new theoretical and computational methods for the simulation of nonequilibrium systems
- Develop scientific collaborations with other members of the group and assume a leadership role in theoretical and computational molecular science
- Conduct research, present reports on the work and publish scholarly papers
- Assist in the supervision and training of research higher degree students and undergraduate project students in this area
- Assist in the preparation of grant applications

Service and Engagement
- Be actively engaged in appropriate professional societies and the wider community.
- 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 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 Professor Debra Bernhardt.
SELECTION CRITERIA

Essential
- PhD in the area of chemistry, physics or chemical engineering
- Experience and understanding of simulation algorithms
- Demonstrated knowledge of the theory of nonequilibrium systems
- Highly developed skills and experience in nonequilibrium molecular dynamics simulations, scientific programming and data analysis
- Ability to work well in a team and to contribute to development of a collaborative and supportive research environment
- Evidence of contributions to research, including publications and application for external grants
- Excellent communication skills

Desirable
- Experience in development of algorithms for molecular dynamics simulations

Seminar
Applicants invited for interview may be expected to present a seminar and/or task in conjunction with the selection interview process.

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 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 recruitment@uq.edu.au.