POSITION DESCRIPTION

Position Title: Postdoctoral Research Fellow/Research Fellow
Organisation Unit: Advanced Water Management Centre
Position Number: NEW
Type of Employment: Full-time, Fixed term for 3 years
Classification: Level A or Level B (depending on qualifications and experience)

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 (60). 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 Advanced Water Management Centre (AWMC) is an internationally recognised centre of excellence in innovative water technology and management. The Centre has established an outstanding worldwide reputation in urban water management and related fields. An award winning multidisciplinary team delivers practical technological solutions underpinned by fundamental scientific discoveries.

The Centre has six interlinked programs namely next generation urban water technologies, integrated urban water management, sewer corrosion and odour management, nexus of urban water, health and environment, resource efficient agri-industry and environmental biotechnology. Collaborative linkages with industry are strong. Solutions developed by the Centre have yielded quantifiable benefits in the order of hundreds of millions of dollars to the Australian water industry and other sectors. At the same time, the AWMC has an outstanding academic publication record, publishing on average over 100 papers a year in high quality journals including the most prestigious multidisciplinary journals including Nature and Science, and top discipline journals such as Water Research and Environmental Science and Technologies.

The AWMC has approximately 100 staff and students including 35 academic and research staff and more than 50 research students. The Centre has well-established process, microbiology and analytical labs. The direct collaboration with industry partners has also led to the creation of several field facilities including the Innovation Centre at Queensland Urban Utilities’ Luggage Point Sewage Treatment Plant, supporting technology demonstration at larger scales and under practical conditions.

The Centre 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. The Centre 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.

Information about the Centre may be accessed on the Faculty’s web site at http://www.awmc.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

Prof Zhiguo Yuan, Director of the Advanced Water Management Centre, has recently been awarded an Australian Laureate Fellowship project. This project aims to develop a suite of leading-edge platform biotechnologies for the microbial production of liquid chemicals using methane as feedstock. The project will substantially advance the fundamental science behind anaerobic bioconversion of methane, and develop and demonstrate highly innovative engineering processes to enable efficient and economically viable methane conversion.

This position is a member of a multi-disciplinary team that will be established. A high-calibre researcher is sought to undertake omics research including genomics, proteomics, transcriptomics, metabolomics and genome scale modelling, and meta-omics, which aims to gain a fundamental understanding of the key microorganism(s) involved in methane bioconversion and their metabolic pathways employed by these organisms.

Duties

Duties and responsibilities include, but are not limited to:

Research
- Use state-of-the-art sequencing techniques for analysis of microbial communities in reactor systems.
- Perform experiments on pure and mixed culture systems to determine cell function using omic and meta-omic approaches (metagenomics, metatranscriptomics and metaproteomics).
- Provide support on outputs associated with (meta) omics analyses, including multi-omics integration
- Assist in providing bioinformatics support and training of other researchers in bioinformatics
- Assist in the preparation of grant applications
- Conduct research and publish scholarly papers.

Service and Engagement
- Perform a range of administrative functions in the School
- Contribute to the processes that enable the academic team to manage the work of the School, including participate in School decision-making and serve on School committees
- Foster the School's relations with industry, government departments, professional bodies and the wider community.
- Participating in project management and draft project reports
- Any other duties as reasonably directed by your supervisor

For appointment at Level B
All the above in a higher capacity, in addition to:
- Contribute to supervision of honours and postgraduate students
- Participate in the coordination of different research themes in the project
- Play a proactive role in the preparation of grant applications

**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 the Centre Director.

**SELECTION CRITERIA**

**Essential**
- A PhD degree in genomics or bioinformatics, molecular microbiology, or microbial physiology.
- Demonstrated knowledge in the area of (meta)omics analyses and bioinformatics, including DNA assembly, binning, taxonomic and function annotations, etc.
- Knowledge of microbial ecology, molecular microbiology, microbial physiology and microbial biofilms
- Experience in bioinformatics for analysis of sequence data
- Experience in the study of complex microbial processes, such as for determining metabolic pathways, cell energetics and ecosystem function
- Demonstrated experience with R, Java, Matlab, Python, Linux
- Experience in techniques of anaerobic microbiology
- Ability to rigorously design experiments and to perform experiments under well-controlled conditions and perform in-depth critical data analysis
- Ability to work collaboratively with colleagues in a multidisciplinary team
- Track record of high quality publications

**Desirable**
- Experience with operating laboratory scale reactors, and methods to analyse performance
• Knowledge of biological reactor operation and molecular microbiology

**For appointment at Level B**

**Essential**

• Demonstrated ability in effective supervision of Honours and Research Higher Degree students
• A minimum of 2-year postdoc or equivalent research experience with excellent performance

**Desirable**

• Experience in working in a multi-disciplinary research environment
• Evidence in successful external grant applications

**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.**

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.