POSITION DESCRIPTION

Position Title: Research Fellow

Organisation Unit: Centre for Mined Land Rehabilitation (CMLR)

Position Number: NEW

Type of Employment: Full time, Fixed term, initially 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 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 Sustainable Minerals Institute (SMI) is a world-leading research institute integrating the expertise of technical, environmental and social specialists to deliver responsible resource development across the life of mine. We are dedicated to finding knowledge-based solutions to the sustainability challenges of the global minerals industry, and training the next generation of industry leaders.

SMI is home to six research centres and a Centre of Excellence based in Chile. We have a strong track record in developing world leading solutions in exploration, mining, mineral processing, workplace health and safety, mine rehabilitation, social responsibility, water and energy.

At SMI, we are truly independent, objective and rigorous and our researchers have experience working across the research, government and industry sectors. We offer professional development training to many of our partners and can tailor courses to suit industry trends or company needs. We offer supervision to PhD students and are proud that our alumni are now in senior roles in resource companies and government organisations around the world.

SMI comprises seven major research Centers:

- WH Bryan Mining and Geology Research Centre
- Julius Kruttschnitt Mineral Research Centre
- Centre for Social Responsibility in Mining
- Minerals Industry Safety and Health Centre
- Centre for Mined Land Rehabilitation
- Centre for Water in the Minerals Industry
- International Centre of Excellence in Chile

The Centre for Mined Land Rehabilitation (CMLR) is one of the research centres within the Environment Centre pair within SMI. The CMLR collaboratively engages in a broad spectrum of environmental research and education activities for the mining and mineral processing industries and associated government departments, at both national and international levels. CMLR has core disciplinary strengths in the basic and applied biological, chemical and physical sciences, working at scales and technologies from the microbial to the catchment and regional. The majority of the research agenda is presently encompassed within the four key themes of Environmental Geochemistry, Landform Stability, Soil-Plant Systems, and Landscape Ecology, with complementary collaborative research programs currently in the areas of ecotoxicology and fauna ecology.

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

To undertake high quality research in the topic area of environmental biogeochemistry of trace elements in natural and mined environments, within the program of “Ecological Engineering of Mine Wastes”, in the SMI-CMLR. In particular, this position will be closely working with the industry-funded research projects to develop knowledge and technologies for rehabilitation of mine wastes (such as Pb-Zn tailings, acidic waste rocks, bauxite residues and polluting waste water). The person is expected to develop expertise in (geo)chemical modelling, organic-metal(loid) complexes and speciation in solid-solution interfaces, in relation to plant availability and uptake.

Duties

Duties and responsibilities include, but are not limited to:

Research and training

- Experimental development and design of key aspect of research activities within large industry-funded projects
- Developing advanced analytical methods and techniques in analysis of metal(loid)s, stable isotopes and organic ligands in a wide range of environmental samples including biological samples and mine wastes,
- Development of meta-data analysis capability and (geo)chemical modelling and speciation methodology and associated database in both solution and solid samples,
- Advanced skills in carrying out instrument analysis of environmental samples, such as ICP-OES/MS,
Conducting laboratory and glasshouse bioassay and bioincubation experiments to validate chemical speciation models,
Contribute to the development of new research ideas and research funding proposals and/or fellowships
Writing up findings for publications in reputed and high impact international journals in relevant subject areas
Participating in postgraduate training and supervision

Management
Assist with project management
Plan and conduct work at external sites including at remote mine locations
Support additional projects on aspects of relevant disciplinary knowledge and skills when required

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 the group leader Associate Professor Longbin Huang, in the SMI-CMLR.

SELECTION CRITERIA

Essential
PhD relevant to environmental biogeochemistry of elemental transport in terrestrial-aquatic continuum,
Demonstrated ability to develop research initiative and to conduct innovative research in biogeochemistry of mine wastes, such as bauxite residues,
Advanced skills in stable isotope analysis by operating sensitive ICP-MS and organic ligand characterisation by advanced IC or HPLC instruments, with high levels of quality assurance and control and the ability to process large dataset outputs,
Demonstrated ability to produce innovative research outcomes and publish in high impact and mainstream journals, in relevant research fields,
Ability to analyse complex experimental data by using statistical package,
Chemical analysis of solid and aqueous samples by advanced analytical instruments
• Excellent written and oral communication skills, including well-developed presentation and communication skills
• High level of interpersonal skills, including the ability to work collaboratively with colleagues, particularly from different disciplines, as well as with administrative and technical staff.
• Demonstrated ability to manage competing priorities and excellent time management skills.

Desirable

• Developing skills in microstructural analysis by using SEM and mineralogical analysis by using XRD in complex matrix through training and learning,
• Developing bioreaction experiments with mine wastes for understanding the speciation and fate of metal(loid)s using stable isotope tracing and/or chemical speciation,
• Experience in technical assistance and training to research high degree postgraduates
• Experience in interactions with industry

Seminar
Applicants invited for interview may be expected to present a seminar 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.

Accessibility requirements and/or adjustments can be directed to recruitment@uq.edu.au.