



POSITION DESCRIPTION

Position Title:	Postdoctoral Research Fellow – Soil Science
Organisation Unit:	Centre for Water in the Minerals Industry (CWIMI) – Sustainable Minerals Institute (SMI)
Position Number:	3076378
Type of Employment:	Full time, Fixed-term
Classification:	Research Academic Level A

THE UNIVERSITY OF QUEENSLAND

The University of Queensland (UQ) is one of Australia's leading research and teaching institutions. For more than a century, we have been bringing together outstanding educators, researchers and innovators – across a range of disciplines – to inspire the next generation and to advance ideas that can benefit the world.

Today, UQ is [ranked among the world's leading universities](#) and we are consistently recognised as one of the top 5 universities in Australia.

Each year, we teach around 55,000 students across 6 faculties, located at our 3 beautiful campuses at St Lucia, Herston and Gatton – as well as online. We aspire to broaden the knowledge and skills of these students, so that they're equipped to achieve their professional goals and make a positive contribution to our society, and the world.

The University is also home to 8 research institutes and more than 100 separate research centres with an interdisciplinary community of more than 1500 researchers, who have come to UQ from all over the globe. This outstanding community of researchers is continuing to build upon UQ's long and proud tradition of discovery science, invention, innovation, translation, and commercialisation.

At UQ, we recognise that our people are our greatest asset. As such, we seek to recruit innovative people who are passionate about helping us to advance our mission and broaden our impact.

Our culture is built on the things that we value most highly – the pursuit of excellence; creative and independent thinking; honesty and accountability; mutual respect and diversity; and providing support for our people. Through the promotion of these values, we're creating a culture that encourages our people to bring their very best, authentic self when they come to work at UQ.

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 Centres:

- 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

Information about the Institute may be accessed on the Institute's web site at <http://www.uq.edu.au/smi>.

Centre for Water in the Minerals Industry (CWIMI) supports the sustainable management of water in the minerals sector. The team contributes to solving the engineering, environmental and social challenges of water management and engages with a wide range of research organisations and stakeholders in Australia and internationally. The Centre's research is funded principally by selected mining companies who are committed to sustainability performance.

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

A Postdoctoral Research Fellow will focus their efforts on developing their expertise and emerging research profile in their discipline. At this level the incumbent will be supported and guided by more senior academic staff with the expectation of an increasing degree of autonomy over time.

The role will contribute to characterising soil chemical and physical properties, quantification and modelling water and solute transport in soil and soil like materials (e.g., mine waste, tailings and waste rocks) and conducting field and laboratory experiments.

The role will also contribute to the standard daily requirements of research activities such as database management, communicating with clients, the delivery of written reports, presentations to clients and the preparation of scientific papers.

Duties

Duties and responsibilities include, but are not limited to:

Research

- Provide Soil Science expertise on research projects undertaken by CWiMI
- Conduct field experiment as well as laboratory experiment in relation to soil chemistry and soil physics research topics
- Conduct fieldwork within Australia, and conduct laboratory work for characterising soil chemical and physical properties
- Contribute to conceptualising and conducting soil hydro-geochemical numerical models
- Communicate and develop relationships with industry partners, government departments and consultancy firms
- Contribute to the delivery of projects and the preparation of project reports
- Publish scholarly papers in high quality journals
- Work with colleagues and postgraduate in the development of joint research projects and contribute to the development of new research proposals

Teaching and Learning

- Contribute to supervision of Honour student and Higher Degree by Research students (as appropriate).

Service and Engagement

- Begin to develop external relationships with industry, government departments, professional bodies and the wider community.
- Contribute to the processes and administrative functions that enable the research teams to effectively management projects
- Contribute to activities that benefit the organisational unit, including participation in decision-making and serving on internal committees.
- Any other duties as reasonably directed by the supervisor or Centre Director

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

This role will involve travel to field sites within Australia for short periods of time (e.g., 3-10 days) to collect soil and plant samples. These sites are in mountainous areas that require a good level of physical fitness.

Organisational Relationships

The position reports to Dr Mandana Shaygan, Research Fellow, CWiMI.

SELECTION CRITERIA

- PhD (or will shortly satisfy the requirements of a PhD) in Soil Science or a closely related discipline area.
- Research experience in areas such as: the transport of water and solutes in porous media (e.g., soil, mine waste, tailings and waste rocks); its quantification; and/or the interaction between water, soil and plants.
- Experience in the installation and operation of soil sensors (e.g., soil moisture and soil water potential sensors) as well as the measurement and monitoring of soil physical and chemical properties and processes in the laboratory and the field.
- Demonstrated ability to conceptualise, run and evaluate soil hydro-geochemical numerical models and interpret their outputs.
- Ability to acquire experience in using HYDRUS-1D, HYDRUS-2D and HYDRUS-PHREEQC.
- Experience in working with large datasets and with mathematical software such as Mathematica, MATLAB, R, or experience in coding.
- High level written and oral communication skills with the ability to represent the research team effectively, both internally and externally with diverse research teams and industry partners.
- Track record of publication of research findings in peer reviewed journals and conferences.
- Ability and willingness to travel to field sites (within Australia and in mountainous areas) for a short time frame (e.g., 3-10 days) and collect soil and plant samples.
- A current manual driver's licence for required travel.

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.