POSITION DESCRIPTION

Position Title: Associate Professor / Professor of Water Resources & Gas Development

Organisation Unit: UQ Centre for Coal Seam Gas (Onshore Gas), The Faculty of Engineering, Architecture and Information Technology

Position Number: 3024188

Type of Employment: Full time, Fixed Term for 5 years

Classification: Academic Level D or E. Level of appointment will be dependent upon 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 (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 $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 – UQ Centre for Coal Seam Gas (Onshore Gas)

Queensland has a strong resource-based economy and is a hub for national and international companies exploring for and extracting coal seam gas (CSG) and other unconventional energy sources. The CSG industry in Queensland is an important and significant development in the Australian natural resources sector, with 6 LNG trains running that will export some 1500 petajoules of energy per year from the Bowen and Surat Basins.

Rapid expansion of the industry led to a fluid policy and regulatory environment in the early stages of the development as the Queensland State and Australian Commonwealth Governments have moved to facilitate the LNG industry's planning and development of infrastructure and operations to extract and export gas. This has been accompanied by community activism around the potential impacts of CSG developments on water resources, environmental amenity and future land use. Local governments were also active in pushing for more resources and regulatory support to deal with the pressures that rapid growth is placing on physical and social infrastructure.

The Centre for Coal Seam Gas (CCSG) was established in December 2011 by UQ in conjunction with major Queensland coal seam gas (CSG) companies. It conducts and supports research and education relevant to the onshore gas sector. Led by the Centre Director, the Centre is managed by a core team who oversees its operations. Central to the team are five professorial research chairs who cover the areas of geoscience, petroleum engineering (two chairs), groundwater and social performance. The Centre also provides independent advice on policy or business-relevant matters, leadership on scientific and technical issues as well as strategic planning.

The Centre draws on the extensive research and educational capabilities across UQ’s schools and institutes and collaborates with industry and research organisations, nationally and internationally. The Centre provides a coordinated access point to disciplines such as economics, business, petroleum engineering, geosciences, water, ecology, sustainability and social sciences.

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.

For more information about the Centre, please visit: https://ccsg.centre.uq.edu.au
Research Program

A key aspect of the research program will be integration with other scientists and engineers across UQ within the Faculty of Engineering, Architecture and Information Technology, Sustainable Mineral Institute, Faculty of Science, UQ Business School, and School of Earth and Environmental Sciences. These collaborations are integral to the Centre’s multi-disciplinary research program concerning the hydrological/hydrogeological context of CSG production and the treatment and utilisation of coal seam water. Another key aspect will be the translation of research for broader public understanding and interaction with external stakeholders on water-related concerns.

The research program will include modelling and data analysis components that consider relationships between gas and water production, the hydraulic connectivity of aquifers (both coal seam and agricultural), surface water and groundwater interactions, the spatial and temporal variations, the movement of shallow gas, implications for surface movement, the treatment and use of coal seam water, the management of salt and the impacts of CSG extraction on economic, social and environmental assets.

The research program will be expected to link closely with industry to develop:

- risk-based methodologies for assessing project development including quantifying the cumulative impacts of CSG water extraction on regional and local aquifer systems;
- adaptive management methodologies for the Australian onshore gas industry through improved understanding of impacts on water resources that takes into account the changing policy and regulatory environment;
- an improved understanding of gas development impacts and benefits such as shallow gas migration, water level decline, water quality degradation, surface movement, water utilization and groundwater resource delineation;
- new methods and options for water treatment, utilisation, disposal and aquifer reinjection of coal seam water, water treatment plant brine and salt;
- site rehabilitation methodologies that protect surface and groundwater systems.

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 Professor of Water Resources & Gas Development is a key leadership role within the UQ Centre for Coal Seam Gas (UQ-CCSG). The role will manage and continue to develop world-class applied research programs on the impacts of unconventional and coal seam gas (CSG) extraction on groundwater and surface water resources (including social, environmental and economic impacts, their risks and adaptive management strategies). They will provide strong leadership for research staff and ensure international level education for postgraduate students in the UQ-CCSG, and those from other UQ schools and centres, particularly those who are engaged in Centre-funded research.

Duties

Duties and responsibilities include, but are not limited to:

Research

- Encourage, initiate and coordinate collaborative research related to your area of expertise across University, national and international levels
- Maintain and expand the world-class water research program in the UQ Centre for Coal Seam Gas and provide leadership in promoting and integrating this research with the industry and government, and within UQ.
- Develop an independent research program relevant to the strategic directions of the Centre and secure external research funding
- Responsible for executive management of the research program budget and work program to ensure cost-effective delivery of quality research outputs.
- Maintain an outstanding record of research publishing in international journals, other appropriate refereed publications and conference publications
- Prepare research reports and presentations for sponsors, and ensure a high standard of reporting by all staff and students in the research group
- Provide leadership in science communication with the public, industry, government and non-government stakeholders
- Work with the Centre Director to shape the Centre’s strategic research agenda; Represent and promote the Centre in leading academic and research forums

Teaching and Learning

- As a ‘Research focussed’ position there is no formal requirement for undergraduate teaching. However it is encouraged that you actively seek teaching opportunities.
- Supervise Honours and PhD students and create an exciting and challenging intellectual environment to attract high quality students
- As required, participate in development and delivery of water related teaching programs and continuing professional education courses
- Provide specialist expertise for undergraduate courses, including development and delivery of courses where appropriate

Service and Engagement

- Make a strong contribution to the governance of the centre, including mentoring less experienced staff and facilitating growth of the necessary skills within the Centre and research teams across the University.
• Foster the Institute’s relations with industry, government departments, professional bodies and the wider community with a focus on the onshore gas industry to support research initiation, carriage of projects and transfer/uptake of outcomes.

• Foster a dialogue on water issues in the onshore gas industry and the more effective management of impacts and opportunities at the local and regional scale with industry, government departments, professional bodies and the wider community.

• Contribute to national and international research initiatives through research collaboration with other institutions, participation on advisory bodies/committees, and leadership roles in relevant professional bodies.

• Any other duties as reasonably directed by the Centre Director

**For Appointment at Level E**

Duties as listed above in addition to the following:

• Take on the role of Centre Deputy Director and provide senior leadership of the water related research programs

• Show professional leadership and engage with the community and industry

• Attend and actively participate in Centre Committees as required, and represent the Centre where necessary

**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 Director, UQ Centre for Coal Seam Gas and manages a number of multi-disciplinary research projects involving researchers from across multiple UQ Schools and Centres and on occasion external collaborators.
SELECTION CRITERIA

**Essential**

- PhD qualification, or equivalent, in a discipline area related to water or environmental science with application in the CSG or petroleum industry; or equivalent level of experience and/or training/education.
- Demonstrated expertise in managing complex research programs to deliver high quality outcomes within budget and approved timeframe and ability to conceptualise and develop new research initiatives.
- Demonstrated expert knowledge and significant research/modelling experience (industry or academia) in one or more areas of water, hydrogeology or environmental engineering/science (with application to the extractive resources industry).
- Demonstrated success in attracting external research funding from institutional and commercial sources.
- Demonstrated capability to form, manage and lead a diverse group of high calibre research staff and students, fostering a cooperative team environment, supporting multiple disciplines and delivery of project outputs and outcomes.
- Demonstrable network of contacts and collaboration experience in the relevant profession and/or industry,
- Demonstrated experience in supervision of postgraduate research students
- An international reputation in water resources & gas development science as demonstrated by published papers in highly rated journals, committee membership of prestigious professional organisations, invitations to deliver keynote addresses and/or chair major national and international forums.
- Excellent interpersonal and communication skills, both oral and written.
- Experience in using an integrated approach to addressing the societal impacts of resource operations and development.

**Desirable**

- Experience working in or with the extractive resources industry, or a track record of close collaboration with the resources industry
- A track record in sustainability-related research relating to the resources sector.
- Experience developing and delivering post-graduate or undergraduate teaching courses and/or industry training courses

**For Appointment at Level E**

Criteria as listed above in addition to the following:

- Demonstrated ability to attract significant external research funding from institutional and commercial sources
- Demonstrated ability to lead multi collaborative national and international research projects
- Demonstrated ability to bring together diverse disciplines and organisations to share knowledge and learning and work collaboratively

**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 (http://www.uq.edu.au/equity) for further information and points of contact if you require additional support.

This role is a full-time position.

Accessibility requirements and/or adjustments can be directed to the contact person listed in the job advertisement.