POSITION DESCRIPTION

Position Title: Postdoctoral Research Fellow
Organisation Unit: School of Earth and Environmental Sciences
Position Number: TBC
Type of Employment: Full time, Fixed Term – 2 years
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 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

The School of Earth and Environmental Sciences is part of the Faculty of Science and is located on the St Lucia campus (Brisbane) of the University. It has 104 academic staff, and 23 administrative and technical staff. There is a large contingent of research appointments and the School has been active in establishing a range of adjunct positions in order to promote engagement with leaders in government and the professions.

SEES hosts world-class facilities which include a state-of-art planning studio, GIS computer laboratories, sample preparation facilities and a complex analytical infrastructure that includes radiogenic and stable isotopes, major and trace element geochemistry, noble gas geochemistry and geochronology, coal petrology and organic geochemistry, geomicrobiology and fluid inclusion facilities. (see https://sees.uq.edu.au/research/analytical-facilities for details).

A recently built geomicrobiology laboratory provides culturing facilities for aerobic and anaerobic microorganisms, including a co2 anaerobic chamber, a photosynthetic growth chamber, fluorescence microscopy, and sample preparation for SEM and TEM analyses of bacteria-mineral interactions. In addition, the School maintains close links with the Centre for Microscopy and Microanalysis, a Major National Research Facility that provides access to electron microscopes (SEMs and TEMs), electron microprobes, X-ray diffractometers, nano-SIMS, surface analysis capabilities, and a host of other modern analytical instrumentation.

Further information and details on the research interests of academic staff in the School of Earth and Environmental Sciences can be found on the web at http://www.sees.uq.edu.au/.

The Postdoctoral Fellow will be part of Dr Eve McDonald-Madden’s lab within SEES. The lab is a diverse group of researchers that focusses on improving environmental decision-making in complex systems. The lab uses novel techniques from decision science, mathematics, artificial intelligence, network theory and economics to incorporate complexity such as the social context of decisions, the complexity of interacting species and the uncertainty faced by decisions makers. Our group's work spans all forms of environmental decision-making, including population management, organisational and government reporting, the management of interacting species, ecosystem services, and conservation planning. Our research has advanced conservation decision science and contributed to current scientific debates through the development of innovative methods for solving globally significant environmental problems.

Dr McDonald-Madden is also a founding member of the Centre for Biodiversity and Conservation Science (CBCS) at the University of Queensland, which houses the ARC Centre for Excellence for Environmental Decisions and the NESP Threatened Species Recovery Hub. The Centre is home to 10 of the world’s best conservation scientists and is globally recognised for its work on environmental decision science. The postdoctoral fellow will be part of and benefit from the large network of researchers and students within CBCS. For more information please see https://cbcs.centre.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

DUTY STATEMENT

Primary Purpose of Position

To engage as a Postdoctoral Research Fellow to support Dr Eve McDonald-Madden’s Future Fellowship project titled “Where’s the beef? A systems approach to taming a global emerging wicked environmental problem.” The candidate will investigate application of novel methodologies to model beef supply and demand at a global scale to analyse the impacts of different policies on the environment and society.

Project Summary

This project aims to build systems models of local environmental impacts of beef production coupled with models of global beef trade to analyse production and policy scenarios. Demand for beef is increasing dramatically, particularly in Asia. Beef is the food commodity with the largest ecological footprint, and increased production will have globally significant impacts on land and water resources, biodiversity, and climate. The scale of these impacts depends on where and how cattle production occurs. Outcomes of this research include a framework for projecting regional and global ecological impacts of domestic cattle production policies, allowing informed decisions that consider and benefit environmental and socio-economic values.

This project will equip governments, the livestock industry and the environmental non-profit sector with a framework for informing production of the food commodity with the largest ecological footprint; beef. Novel insights into the global impacts of cattle production and trade, will enable such groups to tackle rising demand while avoiding perverse outcomes from local environmental policies. Improving the sustainability of beef will benefit the global environment and the people it supports.

Duties

Duties and responsibilities include, but are not limited to:

Research

- Identify trends in beef production and consumption.
- Build national and global level systems models of beef production.
- Undertake optimization procedures for reaching global demand with minimal environmental and social impacts.
- Analyse future scenarios of supply and demand.
- Build a framework for value trade-offs and solution negotiations.
- Conduct research and publish in high quality journals.
- Make presentations to team members and the wider research community on current projects.
- Contribute to training, scientific mentoring and effective supervision of honours and higher degree by research students.
• Develop effective timelines and milestones based on goals of the research and development program.
• Develop research proposals for emerging grant opportunities.
• Be responsible for and communicate this information to the Supervisor.
• Work closely with and maintain strong communication with project stakeholders.
• Work effectively with other staff and students.

**Service and Engagement**
• Foster the School’s relations with industry, government departments, professional bodies and the wider community.
• Attend School based meetings and Seminars.
• 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 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 Dr Eve McDonald-Madden. This project is a partnership between UQ and the University of Minnesota (Professor Stephen Polasky).

**SELECTION CRITERIA**

**Essential**
• PhD in the area of maths, engineering, economic modelling, systems modelling, ecological modelling, or a closely related discipline.
• Demonstrated research experiences on quantitative modelling with a focus on complex systems.
• Track record of publications in this field in high-quality outlets.
• Experience in liaising and collaborating with external agencies to develop cooperative research initiatives.
• Ability to work collaboratively with colleagues and stakeholders but also able to work independently and use initiative.
• High level inter-personal and communication skills.

Desirable
• Experience with modelling at a global perspective.
• Experience with economic models, trade models, or agricultural models.
• Experience with optimization.
• Experience with game theory.

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; however flexible working arrangements may be negotiated and contract lengths negotiated accordingly.

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