



POSITION DESCRIPTION

Position Title:	Postdoctoral Research Fellow
Organisation Unit:	School of Mathematics and Physics
Position Number:	3039599
Type of Employment:	Full time, Fixed term for up to 3 years.
Classification:	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://uniquet.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 Physics is located in the School of Mathematics and Physics in the [Faculty of Science](#). The Discipline is internationally recognised for its research excellence, and hosts a number of world-class research centres. In the recent Excellence in Research for Australia 2015 assessment, the University of Queensland was rated “well-above world standard” in *Physical Sciences* and *Quantum Physics*. Details of the research interests of academic staff may be accessed on the School’s web site at <http://www.smp.uq.edu.au/>

The University of Queensland and the School of Mathematics and Physics is proud to support a major research effort in quantum physics. It leads the ARC Centre of Excellence for Engineered Quantum Systems (Prof. Andrew White) and is a node of the ARC Centre of Excellence for Quantum Computing and Communication Technology. The atomic, molecular, and optical physics faculty is one of the largest in Australia. The advertised position is in the atomic theory group of Dr. Jacinda Ginges. Other AMO/quantum theorists at UQ include Dr. Michael Bromley, Prof. Tom Stace, Prof. Matthew Davis, Prof. Karen Kheruntsyan, Dr. Joel Corney, Dr. Ian McCulloch, and Prof. Ben Powell. AMO experimental programs at UQ include ultra-cold gases (led by Professor Halina Rubinsztein-Dunlop with Dr. Tyler Neely and Dr. Mark Baker) and quantum optics (Prof. Warwick Bowen).

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

To carry out research in atomic theory aligned with the Australian Research Council grant “Heavy atoms and ions and precision tests of fundamental physics” awarded to Dr. Jacinda Ginges. This will involve the development of atomic many-body methods and computer codes at the forefront of precision theory for heavy atoms. Applications will be made to fundamental and applied problems, including precision searches for new physics beyond the standard model, superheavy elements, and atomic clocks.

Duties

Duties and responsibilities include, but are not limited to:

Research

- Develop research program by contributing ideas and conducting research in precision atomic theory for heavy atoms
- Develop atomic many-body methods and computer codes
- Develop an established record of publication in international peer-reviewed journals
- Work with colleagues and postgraduates in the development of joint research projects
- Present research at national and international meetings
- Actively participate in collaboration with researchers in applications for external research funding

Teaching and Learning

- Assist in the supervision of postgraduate and undergraduate students

Service and Engagement

- Perform a range of administrative functions in the School of Maths and Physics
- 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.
- 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 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 Dr Jacinda Ginges, School of Mathematics and Physics

SELECTION CRITERIA

- Applicants will have (or be in the process of obtaining) a PhD in theoretical atomic physics or related discipline
- Strong background in quantum mechanics and demonstrated capacity to carry out research in atomic structure theory
- Demonstrated high-level analytical and computational skills
- Demonstrated research productivity evidenced by publications in high-quality journals
- Demonstrated ability to conduct research independently and collaboratively
- High-level verbal and written communication skills
- Ability to interact well with colleagues, staff, and students
- Background in many-body theory and relativistic quantum mechanics (*desirable*)
- Demonstrated supervision skills at a postgraduate level (*desirable*)

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.

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