POSITION DESCRIPTION

Position Title: Research Fellow in Cosmology with DESI
Organisation Unit: School of Mathematics and Physics
Position Number: UQ Jobs 505351
Type of Employment: Full time, Fixed term, for 5 years
Classification: Academic Level B or C

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 (45), QS World University Rankings (48), Academic Ranking of World Universities (55), and the Times Higher Education World University Rankings (69). UQ again topped the nation in the prestigious Nature Index, and our Academic Ranking of World Universities result in the field of Life and Agricultural Sciences is 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 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. Details of the research interests of academic staff may be accessed on the School's web site at http://www.smp.uq.edu.au/

Information about the Faculty of Science may be found at http://www.science.uq.edu.au/.

Physics is one of the University of Queensland’s top 30 research strengths, and the School of Mathematics and Physics is proud to support a significant research effort in astrophysics. In the most recent Excellence in Research for Australia 2015 assessment, the University of Queensland received the top rating of “well-above international standard” in the category 02 Physical Sciences, as well as in the sub-category 0201 Astronomical and Space Sciences. We also have research strengths in quantum physics, condensed matter physics, and biophotonics and laser science.

The School of Mathematics and Physics has a total of 110 full-time academic staff members, and 21 professional staff who provide professional, technical and administrative support. The School teaches a comprehensive undergraduate program in physics, as well as performing service teaching for students of engineering and the life sciences. There is also an extensive postgraduate research program, which currently has more than one hundred Research Higher Degree students enrolled.

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

We seek an outstanding cosmologist who will take a leadership role at the University of Queensland working with the Dark Energy Spectroscopic Instrument (DESI) as part of Professor Tamara Davis’ ARC Laureate Fellowship. This is a high-level research fellowship of five years duration.

The candidate will ideally have experience in doing cosmology with large galaxy surveys (spectroscopic or photometric), and have interests in large-scale structure, baryon acoustic oscillations, weak gravitational lensing, strong gravitational lensing, gravitational waves, or other topic related to cosmology. They should have a vision for what can be done with DESI data and how they would like to contribute.
The candidate will have access to the substantial resources of the ARC Laureate Fellowship, and would be invited to help drive the direction of the group, including selection and co-supervision of other postdoctoral fellows and PhD students.

The successful candidate will have the opportunity to participate in undergraduate teaching, if they would like to, and to supervise undergraduate and postgraduate research students. Ample travel funding will be available.

We are simultaneously advertising for a postdoctoral fellow to work with the Dark Energy Survey (DES). Please let us know if you would be interested in being considered for both positions.

Duties

Duties and responsibilities include, but are not limited to:

Research

- Lead a cosmology research program within the DESI collaboration.
- Conduct research and publish scholarly papers.
- Work with colleagues and students in the development of joint research projects.
- Secure research funding by applying for national and international grant schemes.
- Build and manage internal, national, and international collaborations.
- Build a research profile and participate in the collegial environment of the wider astrophysics community.

Teaching and Learning

The candidate is expected to:

- Supervise research students at honours and postgraduate level.
- Provide support for colleagues during absences.

In addition, the candidate will have the opportunity, but not the obligation to:

- Teach undergraduate and postgraduate courses in physics and related programs.
- Develop new course material, and improve existing course material.

Service and Engagement

- Participate in outreach activities.
- Contribute the the running of the group through helping to organise talks, journal clubs, visitors, conferences, etc…
- Contribute to initiatives they feel passionate about, such as promotion of Science Technology Engineering and Maths (STEM), or equity and diversity initiatives.
- 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 the Head of School of Mathematics and Physics.
SELECTION CRITERIA

**Essential**
- A PhD (or equivalent) in astrophysics or a related area.
- A proven track record in the field of cosmology.
- Demonstrated ability to lead research projects.
- A strong publication record relative to opportunity, and the capacity to develop competitive external grant applications. A level C appointment should have a record of obtaining and successfully managing significant external research funds as a named chief investigator.
- Demonstrated ability or potential to mentor Research Higher Degree students. A level C appointment will have supervised Research Higher Degree students with demonstrated outcomes.
- Demonstrated ability or potential to establish effective relationships and to represent and promote the discipline of physics at a university and wider community level, including industry, government and professional bodies.

**Desirable**
- Experience within large astrophysics collaborations.
- Demonstrated capacity or potential to develop successful collaborative research project links and professional contacts.

Applicants should include a statement addressing how they meet each of the selection criteria with their application.

**Seminar**

Applicants invited for interview will be expected to present a research seminar in conjunction with the selection interview process.

**Research statement**

The application should include a brief outline of the research program you plan to implement at the University of Queensland, written in a way that is accessible to non-specialists.

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.

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