POSITION DESCRIPTION

THE UNIVERSITY OF MELBOURNE

School of Physics
Faculty of Science

POSTDOCTORAL RESEARCH FELLOW IN QUANTUM COMPUTING – FORD ALLIANCE PROJECT

POSITION NO	0058951
CLASSIFICATION	Level B
SALARY	$110,236 - $130,900 p.a (pro-rata if part-time)
SUPERANNUATION	Employer contribution of 17%
WORKING HOURS	Full-time (1.0 FTE)
BASIS OF EMPLOYMENT	Fixed-term contract for 2 years.
OTHER BENEFITS	http://about.unimelb.edu.au/careers/working/benefits
HOW TO APPLY	Online applications are preferred. Go to http://about.unimelb.edu.au/careers, select the relevant option ('Current Staff' or 'Prospective Staff'), then find the position by title or number.
CONTACT FOR ENQUIRIES ONLY	Professor Lloyd Hollenberg Tel +61 3 8344 4210 Email lloydch@unimelb.edu.au *Please do not send your application to this contact*

For information about working for the University of Melbourne, visit our website:
about.unimelb.edu.au/careers

Acknowledgement of Country

The University of Melbourne acknowledges the Traditional Owners of the unceded land on which we work, learn and live: the Wurundjeri Woi Wurrung and Bunurong peoples (Burnley, Fishermans Bend, Parkville, Southbank and Werribee campuses), the Yorta Yorta Nation (Dookie and Shepparton campuses), and the Dja Dja Wurrung people (Creswick campus).

The University also acknowledges and is grateful to the Traditional Owners, Elders and Knowledge Holders of all Indigenous nations and clans who have been instrumental in our reconciliation journey.

We recognise the unique place held by Aboriginal and Torres Strait Islander peoples as the original owners and custodians of the lands and waterways across the Australian continent, with histories of continuous connection dating back more than 60,000 years. We also acknowledge their enduring cultural practices of caring for Country.

We pay respect to Elders past, present and future, and acknowledge the importance of Indigenous knowledge in the Academy. As a community of researchers, teachers, professional staff and students we are privileged to work and learn every day with Indigenous colleagues and partners.

Position Summary

The School of Physics is seeking to appoint a Research Fellow in the area of quantum computing, supported by the Ford Alliance Program and the IBM Quantum Hub at The University of Melbourne. The Research Fellow will be expected to undertake high-level research in the application of quantum computers to mobility space optimisation problems, engaging with the Ford quantum computing team, and with the IBM Q Hub at the University of Melbourne (QHub). The Research Fellow will also be expected to engage with research students at MSc and MPhil/PhD levels. The University of Melbourne provides a wide range of opportunities for exciting research collaborations, and the Research Fellow will be encouraged to develop collaborative links within the School as well as externally, in line with the strategic direction of the School of Physics.

The appointee will be based at the University of Melbourne Parkville campus and work under the supervision of Prof Lloyd Hollenberg.

1. Key Responsibilities

1.1 RESEARCH AND RESEARCH TRAINING

You are expected to significantly contribute towards the research effort of the team and to develop your research expertise with an increasing degree of autonomy.

- Contribute to and publish academic papers and other scholarly outputs to a high academic standard in accordance with the research expectations of the University of Melbourne.
- Actively coordinate and/or participate in research seminars and conferences to disseminate research findings as opportunities arise.
- Contribute to the preparation, or where appropriate individual preparation of research proposal submissions to internal or external funding bodies as relevant

- Undertake administrative functions and obligations primarily connected with the staff member's area of research.
- Contribute to, and assist in the co-supervision and training of research students primarily at postgraduate level.
- Engage with relevant professional and industry bodies and stakeholders to foster collaborative partnerships.
- Demonstrate initiative and conduct independent research in a team-based context
- Undertake other research activities as required.

1.2 TEACHING AND LEARNING

- Contribute to teaching, training, scientific mentoring and supervision of students.

1.3 LEADERSHIP AND SERVICE

- Effective demonstration and promotion of University values including diversity and inclusion and high standards of ethics and integrity.
- Actively contribute to School activities such as Open day to promote student engagement.
- Assist in the IT administration for the QHub.

1.4 OTHER DUTIES

- Perform other tasks as requested by the supervisor or the Head of School.
- Actively participate in the University Professional Development Framework.
- Ensure an up-to-date record of University compliance courses, such as, but not limited to, Appropriate Workplace Behaviour, PDF for Staff and Supervisors, OH &S training courses.
- Occupational Health and Safety (OH&S) and Environmental Health and Safety (EH&S) responsibilities as outlined in section 4.

2. *Selection Criteria*

2.1 ESSENTIAL

- A PhD or equivalent in a relevant area of quantum computing.
- A demonstrated aptitude for research in relevant areas, commensurate with experience and opportunities.
- Demonstrated ability to prepare research reports and manuscripts for publication.
- Excellent communication skills, both written and oral, in English.
- An ability to work closely with a team towards a common goal, and independently on specific problems and outcomes including the ability to work to a schedule and meet pre-agreed deadlines.
- A willingness to fully participate in all activities of the research team and appropriate activities of the School of Physics.
- Integrity and an ethical approach including the ability to operate fairly and consistently within organisational values.

- Demonstrated ability to develop, administer and see through to completion appropriately designed research projects with limited supervision.
- High-level organisational and time-management skills and a demonstrated capacity to bring projects to timely completion.
- Demonstrable skills in initiative and commitment to achieving scientific goals.
- Demonstrated ability to work with people from diverse cultural backgrounds.

2.2 DESIRABLE

- Research experience in practical quantum computing on noisy intermediate scale quantum devices.
- Experience in assisting with supervision of students undertaking undergraduate or higher degree research projects.

2.3 OTHER JOB-RELATED INFORMATION

- Occasional work out of ordinary hours, travel, etc.

3. *Equal Opportunity, Diversity and Inclusion*

The University is an equal opportunity employer and is committed to providing a workplace free from all forms of unlawful discrimination, harassment, bullying, vilification and victimisation. The University makes decisions on employment, promotion, and reward on the basis of merit.

The University is committed to all aspects of equal opportunity, diversity and inclusion in the workplace and to providing all staff, students, contractors, honorary appointees, volunteers and visitors with a safe, respectful and rewarding environment free from all forms of unlawful discrimination, harassment, vilification and victimisation. This commitment is set out in the Advancing Melbourne strategy that addresses diversity and inclusion, equal employment opportunity, discrimination, sexual harassment, bullying and appropriate workplace behaviour. All staff are required to comply with all University policies.

The University values diversity because we recognise that the differences in our people's age, race, ethnicity, culture, gender, nationality, sexual orientation, physical ability and background bring richness to our work environment. Consequently, the People Strategy sets out the strategic aim to drive diversity and inclusion across the University to create an environment where the compounding benefits of a diverse workforce are recognised as vital in our continuous desire to strive for excellence and reach the targets of Advancing Melbourne.

4. *Occupational Health and Safety (OHS)*

All staff are required to take reasonable care for their own health and safety and that of other personnel who may be affected by their conduct.

OHS responsibilities applicable to positions are published at:

http://safety.unimelb.edu.au/topics/responsibilities/

These include general staff responsibilities and those additional responsibilities that apply for Managers and Supervisors and other Personnel.

5. Other Information

5.1 SCHOOL OF PHYSICS

www.physics.unimelb.edu.au/

The University of Melbourne's School of Physics is one of Australia's leading Physics Schools. It has achieved this status through the high quality of its research and teaching programs. The School offers a wide range of physics subjects to undergraduate and postgraduate students, and performs research in the following areas: Astrophysics, Atomic, Molecular and Optical Physics, Experimental Condensed Matter Physics, Experimental Particle Physics, Materials Science, Physical Biosciences, Theoretical Condensed Matter Physics and Theoretical Particle Physics.

The School of Physics hosts the following ARC Centre of Excellence groups:

- ARC Centre of Excellence for Dark Matter Particle Physics (CDMPP)
- Melbourne nodes of the ARC Centre of Excellence for Gravitational Wave Discovery
- ARC Centre of Excellence in All Sky Astrophysics
- ARC Centre of Excellence for Quantum Computation and Communication Technology (CQC^2T)

The School also plays a major role in the Australian Synchrotron research program, and in the development of the Stawell Underground Physics Laboratory.

Currently some 30 academics, 51 research-only staff, more than 95 postgraduate students and 72 associates supported by 23 professional staff make up the School of Physics. The School additionally hosts an Australian Laureate Fellow, 5 ARC Future Fellows, and 4 ARC Discovery Early Career Researcher. Skilled technical staff operate, maintain and develop complex instrumentation and equipment to support the teaching and research activities of the School. The School is located in the David Caro building on the Swanston Street boundary of the University campus. The Head of School and majority of the Professional staff are housed on the ground floor of the building to act as the first point of contact for students, staff and visitors.

5.2 FACULTY OF SCIENCE

http://www.science.unimelb.edu.au

Science at Melbourne is a global leader across fundamental and impactful scientific research and education. Science begins with curiosity, and we are dedicated to understanding the universe from the level of sub-atomic particles to the solar system. We aim to be leaders who positively impact the community locally and globally, addressing major societal issues from climate change to disease. Our discoveries help build an understanding of the world around us.

Our strength is our breadth of expertise. We are the second largest faculty in the University comprising seven schools: Agriculture, Food, Forest & Ecosystems Sciences, BioSciences, Chemistry, Geography, Earth & Atmospheric Sciences, Mathematics & Statistics, Physics and Veterinary Science.

This depth of knowledge positions the faculty to better understand, explore and impact our world and humanity, within a truly comprehensive Faculty of Science.

We have more than 150 years of experience in pioneering scientific thinking and analysis, leading to outstanding teaching and learning and offer a curriculum based on highly relevant research. We aim to train students with the knowledge and intellectual flexibility to drive the industries of tomorrow and lead across all levels of society.

We offer a range of undergraduate, honours, graduate and research degrees; enrolling more than 11,500 undergraduate and 3,750 graduate students.

We are dedicated to delivering leading transformative educational outcomes, underpinned by research, and an inclusive and inspiring student experience.

Excellence comes in many forms and diversity of thought, perspective and disciplines is essential to deliver globally leading science. At the core of our success is our focus on an inclusive environment for all in our community. Our Faculty's focus on equity, inclusion and belonging is grounded in our endeavour to ensure we are best placed to advance research, teaching and serve diverse national and global communities.

As a Science community we sit across six of the University's seven campuses – Parkville, Dookie, Burnley, Creswick, Shepparton and Werribee. This reach provides us with a unique perspective that is beneficial to our teaching and research. It also means we can offer our students a greater variety of learning experiences and internships to engage with industry partners to solve real-world issues.

We are highly research focused, performing strongly in the ARC competitive grants schemes, often outperforming the national average. The Faculty of Science is also currently growing its competitiveness and standing in the NHMRC space.

The Faculty is custodian of the Bio21 Molecular Science and Biotechnology Institute, Office for Environmental Programs, Australian Mathematical Sciences Institute (AMSI), the Indigenous Knowledge Institute and home to numerous Centres.

5.3 THE UNIVERSITY OF MELBOURNE

Established in 1853, the University of Melbourne is a leading international university with a tradition of excellence in teaching and research. The main campus in Parkville is recognised as the hub of Australia's premier knowledge precinct comprising eight hospitals, many leading research institutes and a wide-range of knowledge-based industries. With outstanding performance in international rankings, the University is at the forefront of higher education in the Asia-Pacific region and the world.

The University employs people of outstanding calibre and offers a unique environment where staff are valued and rewarded.

Further information about working at The University of Melbourne is available at http://about.unimelb.edu.au/careers.

5.4 ADVANCING MELBOURNE

The University's strategic direction is grounded in its purpose. While its expression may change, our purpose is enduring: to benefit society through the transformative impact of education and research. Together, the vision and purpose inform the focus and scale of our aspirations for the coming decade.

Advancing Melbourne reflects the University's commitment to its people, its place, and its partners. Our aspiration for 2030 is to be known as a world-leading and globally connected Australian university, with our students at the heart of everything we do.

We will offer students a distinctive and outstanding education and experience, preparing them for success as leaders, change agents and global citizens.

We will be recognised locally and globally for our leadership on matters of national and global importance, through outstanding research and scholarship and a commitment to collaboration.

We will be empowered by our sense of place and connections with communities. We will take opportunities to advance both the University and the City of Melbourne in close collaboration and synergy.

We will deliver this through building a brilliant, diverse and vibrant University community, with strong connections to those we serve.

The means for achieving these goals include the development of the University of Melbourne's academic and professional staff and the capabilities needed to support a modern, world-class university. Those means require a commitment to ongoing financial sustainability and an ambitious infrastructure program which will reshape the campus and our contribution to the communities we engage with. This strategy, and the priorities proposed, is centred around five intersecting themes; place, community, education, discovery and global.

5.5 GOVERNANCE

The Vice Chancellor is the Chief Executive Officer of the University and responsible to Council for the good management of the University.

Comprehensive information about the University of Melbourne and its governance structure is available at http://www.unimelb.edu.au/governance