

# UNSW@ADFA

CANBERRA • AUSTRALIA

## PhD Scholarship

“Quantum Computing”

UNSW@ADFA, Canberra, Australia

Stipend: \$25,000 per annum [tax free]

---

A PhD position is available in the UNSW@ADFA quantum optics laboratory in the area of experimental quantum optics. The PhD project will be in the area of experimental coherent-state quantum computing. A PhD stipend of \$A25,000 per annum and tuition-fee remission scholarship worth approximately \$A40,000 per annum is available to suitably qualified applicants. Exceptional candidates may be eligible for a further top-up scholarship.

Coherent-state quantum computing is a relative new approach to optical QC. The logical basis states are coherent states (multi-photon states that exhibit classical optical coherence) that can be created deterministically from well-stabilised lasers. Such states are non-orthogonal, but can serve as qubits under appropriate conditions.

Coherent-state quantum computing experiments will require quantum optics outside the realm of coincident measurement techniques and involve real-time quantum control, thus providing new techniques of direct relevance to other optical quantum computation schemes. Successful completion of this project will contribute to the development of an alternative optical quantum computation scheme that may be more amenable to scale-up than other schemes.

The Canberra campus of the University of New South Wales is located at the Australian Defence Force Academy (ADFA). ADFA is located in an Australian bushland setting less than five kilometres from the city centre and the Canberra airport.

The UNSW@ADFA campus has a large and comprehensive library, state-of-the-art computing facilities, well-equipped and modern laboratories and a concessions area which includes a hair salon, a University Cooperative Bookshop, financial institutions, a 24-hr ATM and the ADFA Cafe. A modern gymnasium and sporting facilities are available to staff. A Muslim prayer room is also available on campus.

Canberra is a modern city just under 100 years old, chosen as Australia’s national capital in 1908 as a diplomatic solution when both Melbourne and Sydney wanted the role. Its name comes from the local Aboriginal word “Kamberra” meaning “meeting place”. As Australia’s capital city, Canberra is the focal point for activities and events that affect and influence the nation. It is the home of Federal Government and the public service, a focus for business and industry, home to the international diplomatic community, a place of study or just a great place to live.

For more information on the details of the project, contact Elanor Huntington at [e.huntington@adfa.edu.au](mailto:e.huntington@adfa.edu.au). Information on how to apply for admission, fees, scholarships and living in Canberra can be found at:

<http://www.unsw.adfa.edu.au/student/future/research.html>

Screening will commence on 15 September and continue until the position is filled.