



UNSW
SYDNEY



PhD Scholarship - \$50,000 per year Quantum Technology in Space (3-year project)

**UNSW Sydney, Australia
In collaboration with NASA, Goddard Space Flight Center**

Quantum technologies deployed in space offer up a paradigm shift for many fields in Engineering and Science including Earth Observation, Global Positioning Systems, Telecommunications, Exo-planet Searches, and Astrophysics. NASA is interested in all of these applications.

In this 3-year PhD project, you will be tasked with exploring the use of quantum technology, such as quantum entanglement, as a means to enhance next-generation equipment that NASA may deploy in future systems. Quantum entanglement is the so-called “spooky-action-at-a-distance” in which separated quantum systems are intrinsically and instantaneously linked no matter how far apart. It is a quantum-only aspect of Nature, and its potential use in many fields is just starting to be explored. A particular focus of this project will be on the potential use of quantum entanglement, and other quantum technologies, in next-generation detectors and observational platforms that provide for enhanced sensing capabilities.

This project offers the PhD candidate the opportunity to enter an exciting and emerging technology frontier that is positioned at the interface of advanced quantum physics and space-based technology. This three-year PhD Scholarship is sponsored in part by the **NASA Goddard Space Flight Center** (Baltimore) and **Northrop Grumman Corporation** (Baltimore). Although the PhD candidate will be based at UNSW, Sydney he/she should be prepared to spend several weeks per year visiting and collaborating with NASA, Goddard in Baltimore, USA.

The candidate must be an **Australian Citizen** before the commencement of the PhD and is expected to hold the equivalent of a First-Class Honours degree in Engineering or Physics. No prior experience in quantum physics is required – just the ability to learn new theoretical concepts quickly. The salary given with this scholarship will be approximately **AUD \$45,000 per annum** and based on the successful award by UNSW of a Domestic Research Scholarship and a \$16,000 per annum top-up scholarship supplied by Northrop Grumman. In addition to a stipend, approximately **\$5,000 per annum** will be made available to the successful candidate for travel to the United States and International Conferences. UNSW will cover all tuition fees.

Further Information: Contact: UNSW PhD Supervisor: Professor Robert Malaney, Email r.malaney@unsw.edu.au, Tel +61 2 9385 6580.