



**UNSW**  
SYDNEY



## **SCIENTIA PHD SCHOLARSHIP – Applications close 12 July 2019**

### **Atmospheric transport of microplastics and deposition on the South Pacific**

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School of Civil and Environmental Engineering / School of Chemical Engineering  
School of Biological, Earth and Environmental Sciences  
UNSW Sydney*

Airborne particles play a critical component of Earth System behaviour, affecting atmospheric, oceanic, biological, terrestrial and human systems. This project will conduct the first ever investigation into the long-range atmospheric transport and deposition of microplastics. This project will investigate the atmospheric transport of plastic particles and their deposition rates in the South Pacific in Fiji, the Solomon Islands, Australia, and elsewhere. Microplastic and nanoplastic particles pose unquantified risks to human health, the environment and the integrity of natural food chains yet are ubiquitous in our environment. Microplastic particles have been identified in remote locations far from urban centres, including Antarctica, the Mariana Trench and the Great Australian Bight, due to long-distance river/ocean transport. Atmospheric transport of dust, derived from the world's deserts, is known to occur over thousands of kilometres across oceans and continents. Airborne and atmospheric transport of microplastics has been observed but not at the scale of this research project.

This research spans UNSW's Faculties of Engineering and Science and is being undertaken alongside an existing collaborative research partnership. The research partners are Fiji National University, the University of Oxford, the Queensland University of Technology and the University of Queensland with the support of the Fijian Government, the Solomon Islands Government and the World Health Organisation.

The successful candidate will play an engaged and interactive role with the consortium and have both exceptional research and communication skills. The candidate should have a background in either environmental engineering, geography or science (or similar), and a demonstrated ability to conduct field work and laboratory analysis. Demonstrated experience in microplastics would be beneficial but not required in lieu of field and laboratory experience/interests. Experience or interest in the use of remote sensing technologies would be advantageous but not essential.

UNSW's Scientia Program offers an annual stipend of \$41,000 per year plus full fee coverage for 4 years. In addition to this the PhD candidate will receive \$10,000 per year for career building and to support international research collaborations. Please see <https://www.scientia.unsw.edu.au/scientia-phd-scholarships> for full details, FAQs and Guidelines. This very competitive program is for candidates with a strong commitment to making a difference in the world.

The ideal candidate will be curious and possess a demonstrated willingness to apply a breadth of skills in order to answer the research question. They will have the ability to work across scales of investigation and effectively connect results from the field and laboratory to the broader regional and global processes. The ideal candidate will thrive as part of a multidisciplinary team and under the broader project partnership of atmospheric dust and urban air quality investigation being set up in the Pacific. The ideal candidate will have excelled in previous academic studies in either science or engineering and have worked with microplastics or other contaminant analysis in either water or soil samples. They will possess a demonstrated ability in and/or a willingness to learn new technical skills and undertake a mixture of field, laboratory and numerical modelling lines of investigation.

Further information on the project may be obtained from **Dr. Andrew Dansie** ([a.dansie@unsw.edu.au](mailto:a.dansie@unsw.edu.au)) and <https://www.scientia.unsw.edu.au>.