



**UNSW**  
SYDNEY

# Nuisance and Harmful Algae Science-Practice Partnership

## Algal Taste and Odour Production in Water Reservoirs

*School of Civil and Environmental Engineering*

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Australian water utilities report seasonal taste and odour (T&O) events in their catchments and drinking water reservoirs. These T&O compounds are usually produced by bloom-forming photosynthetic algae that live in the raw water. For example, some algae are known to produce geosmin and MIB, which give water an undesirable earthy and musky smell that needs additional treatment (such as pre-oxidation or pre- or post- carbon treatment) prior to water distribution. This project aims to discover the wide variety of T&O compounds that algae produce so that we may devise appropriate water treatment strategies. The student will analyse algae and water samples from drinking water reservoirs at the time of confirmed T&O events. Gas chromatography-mass spectrometry coupled with olfactory analysis (GC-MS/O) will be used to identify, characterise and quantify T&O compounds. Over time, the student will build up a comprehensive database of the environmental conditions responsible for algal blooms in drinking water reservoirs, the algal species responsible for T&O production and the properties of the T&O compounds produced.

The **Nuisance and Harmful Algae Science-Practice Partnership (NHASP)** with Melbourne Water (<http://www.algae.unsw.edu.au/>) is a multi-party initiative that seeks to more effectively manage algal blooms by introducing smart surveillance and evidence-based, cost-effective policy and asset design for the benefit of the Melbourne region and Australia.

The successful candidate will join the NHASP program. The candidate should have a background in either civil, chemical or environmental engineering (or similar), a demonstrated aptitude for undertaking laboratory/field work, have excellent communication skills and will be expected to interact regularly with industry partners. The student needs to be successful in securing their own primary scholarship via a **Research Training Program (RTP)** or equivalent (<https://research.unsw.edu.au/graduate-research-scholarships>). A secondary top-up scholarship (\$5000) may be available for exceptional applicants.

Further information on the project and scholarship may be obtained from **Prof. Richard Stuetz** (email: [r.stuetz@unsw.edu.au](mailto:r.stuetz@unsw.edu.au)). Applications should be submitted (including a cover letter, academic transcript and CV) to Prof Stuetz at UNSW Sydney.

