10 December 2025

MSc Scholarship (available immediately)

Project name: “Towards accurate quantification of New Zealand’s methane emissions from waste and agriculture”

Overview

Aotearoa New Zealand is committed to drastically reduce its greenhouse gas emissions. This includes methane (CH_4) emissions from waste and agriculture. However, our ability to accurately measure current emissions, as well as to verify emission reductions, is not sufficient. We recently developed new technology to measure CH_4 emissions from waste and agriculture with great accuracy, using continuous CH_4 analysers mounted onto mobile platforms such as drones and cars. This technique has already been deployed at multiple sites across Aotearoa New Zealand, demonstrating excellent performance. Future work will include deployment at specific wastewater treatment systems (industrial, rural, and agricultural) as well as on measurements of emissions from ruminants (dairy cows), with a specific focus on Māori businesses and operations. Improved knowledge of local CH_4 emissions enables operators to make better informed mitigation decisions, and to meet emissions reduction targets. Overall, this will inform facility and farm operators, as well as industry developing emissions mitigation techniques, and improve national reporting of greenhouse gas emissions.

About this MSc opportunity

We are looking for a highly motivated MSc candidate to join our international team to quantify CH_4 emissions from specific wastewater treatment plants or dairy farms. This project is a collaboration between Earth Science New Zealand (formerly NIWA), Lincoln University and the University of Auckland. The successful candidate will have an undergraduate degree in environmental science, agricultural science, engineering, chemistry, geology, physics, or closely related discipline. You will be conscientious, detail oriented, hard-working, eager to do field work, and have a positive can-do attitude. Supervision will be provided by Dr Peter Sperlich (Earth Science NZ) with further support from either Dr Naomi Wells (Lincoln University) or Prof Dr Naresh Singhal (University of Auckland), depending on the focus of the MSc study and place of enrolment.

You will be enrolled at Lincoln University or the University of Auckland, depending on the focus of the study. Our instruments can be equipped with sensors for other greenhouse gases. This will enable us to expand our observation portfolio beyond this project.

Entry Requirements

Applicants must have an Honours or BSc degree, undertaken in English, in a related field such as environmental science, agricultural science, engineering, chemistry, meteorology, physics, or closely related discipline. The candidate must be health and safety conscious and willing to undertake campaigns of intensive field measurements throughout Aotearoa New Zealand, as well as laboratory work and data processing. Candidates with experience of working with large data sets will be preferred.

Scholarship details

To provide financial support for 12 months of this MSc, the successful candidate will receive a stipend of NZ$22,000, including tuition fees, excluding costs associated with field work. There is some flexibility with the starting date, but ideally as soon as possible after 12th of January 2026.

Location

The student will be based in Wellington, Christchurch/Lincoln, or Auckland.

Application process

To apply for this opportunity, please submit the following documents to Dr Peter Sperlich (peter.sperlich@niwa.co.nz):

- A letter outlining your motivation for applying for this MSc opportunity (maximum 2 pages).
- Your comprehensive CV, highlighting your achievements and relevant experience.
- Contact details for at least two referees.
- Academic transcripts may be requested to demonstrate your educational background and eligibility for this opportunity.

Review of applicants begins as soon as possible and will continue until the vacancy is filled. Peter Sperlich will let you know whether you have been shortlisted for this vacancy and will advise you of the next steps.

Interviews will be conducted either in person or via video conferencing. Upon approval from a selection committee, the successful applicant will be guided through the full Masters enrolment application at the respective University.

Key contacts

Dr Peter Sperlich, email: peter.sperlich@niwa.co.nz, phone: 021-067-2686

Dr Rupert Craggs, rupert.craggs@niwa.co.nz

Dr Naomi Wells, naomi.wells@lincoln.ac.nz

Prof Naresh Singhal, n.singhal@auckland.ac.nz