

PhD scholarship: using liquefied lacustrine tephra to evaluate paleoseismicity



THE UNIVERSITY OF
WAIKATO
Te Whare Wānanga o Waikato

PhD scholarship in Earth Sciences: characterising and using liquefied lacustrine tephra layers to evaluate paleoearthquakes and seismic hazard in the Hamilton lowlands

Background: We are seeking a PhD student to join our project “Earth-shaking insight from liquefied volcanic-ash (tephra) layers in lakes”. The project is led by Professor David Lowe. We aim to map, characterise, and use liquefied tephra layers in lake sediments to investigate paleoseismicity and to evaluate earthquake hazards for the Hamilton lowlands (including for Hamilton City) in northern New Zealand. Our previous research has shown that shallow lakes aged 20,000 years in the lowlands contain tephra layers that in some cases are liquefied because, we propose, of intense shaking on nearby faults.

Project for PhD student: The PhD project will involve (1) lake coring; (2) interpreting CT and micro-CT images of liquefaction of tephra layers in lake cores; (3) developing methods to characterise the liquefied tephra layers (tephra seismites) quantitatively in 3D (geometric morphometrics); (4) analysing spatial patterns of the seismites; and (5) evaluating paleoseismicity and hazards in and beyond Hamilton.

Funding and location: The PhD student is fully funded by the Marsden Fund for three years: enrolment and other fees are covered and a tax-free scholarship (stipend) of NZ\$27,500 per annum is provided. The candidate will be based at the University of Waikato in Hamilton, New Zealand.

Eligibility criteria:

Candidates must have a research-based masters or honours degree in geosciences, preferably with a background in sedimentary or volcanic geology, geo-computing, or paleoseismology. GIS experience could be an advantage. Potential candidates must meet the University of Waikato's [PhD eligibility criteria](#) (including IELTS requirements).

The position is open to domestic and international applicants currently based in New Zealand as well as applicants beyond New Zealand. Please be aware that the New Zealand Government has placed restrictions on entry to New Zealand, which may impact on overseas applicants (i.e. those not currently domiciled in New Zealand).

Application documents required:

- A cover letter explaining how your experience makes you suitable for this role
- CV
- Two academic references

Contact and email address for applications:

For further information and enquiries, please contact Dr Tehnuka Ilanko, School of Science/Te Aka Mātuatua, University of Waikato, Hamilton, New Zealand tehnuka.ilanko@waikato.ac.nz

Closing date:

25-March-2021