

PhD Scholarship: Fluid migration and accumulation modelling of buried volcanic systems

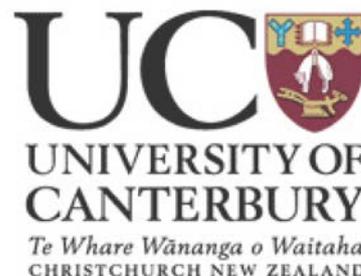
Closing Date for Applications: 01/12/2017

University: Department of Geological Sciences, University of Canterbury, Christchurch, New Zealand

Stipend: \$NZ25,000 p.a. plus fees (presently ~\$NZ7,200)

Post Duration: 3 years starting 2018

Supervision: Andy Nicol (Principal Supervisor, UoC), Darren Gravley (UoC), Alan Bischoff (UoC) and Karsten Kroeger (GNS).



Project Summary

This scholarship is part of the Research Project "Potential to Discover Hydrocarbons Associated with Buried Volcanoes" funded by 2017 Endeavour Fund - Smart Ideas, MBIE New Zealand. The project will investigate how fluids migrate and accumulate in volcanic systems using seismic reflection data, wells and outcrops from New Zealand sedimentary basins and analogue volcanoes. Petroleum migration and accumulation modelling will be constructed using a range of software, including Schlumberger PetroMod and RMS Roxar. Empirical reservoir-scale 3D geocellular models will be constructed to replicate the geometries and fluid-flow properties of the main architectural elements of volcanic systems to a resolution of individual cells of 30x30x20 m. These models will improve understanding of the potential of volcanic systems to host economical resources such as hydrocarbons. The PhD will place the student in a strong position to work within the energy industry and conduct further research.

Key Duties and Responsibilities

- To investigate the three-dimensional architecture of volcanic and sedimentary deposits that compose volcanic systems, including size, geometry, vertical and lateral distribution and architectural elements.
- To modelling geometrical and petrophysical properties of volcanic and enclosing sedimentary rocks.
- To help maintain a seismic reflection dataset.
- To be member of a research group focusing on GeoEnergy resources, working closely with Canterbury University staff and post-graduate students.
- To actively engage in the dissemination of the research results, in particular the preparation and submission of research papers to high impact international journals, and reports.
- Working in interaction with petroleum and geothermal industry companies would also be desirable.

Candidate Requirements

- BSc (Hons) or MSc with First Class Honours or equivalent high GPA in geology with emphasis in seismic reflection interpretation and basin analysis.
- Training essential in seismic interpretation software such as Petrel, SeisWorks, and Kingdom or similar.
- Desirable experience in reservoir modelling.
- A high standard of written and spoken English. Applicants for whom English is not their first language, or who have not undertaken their degree studies with English as the language of instruction, must attain a satisfactory English language test score (TOEFL or IELTS) before they will be able to meet enrolment requirements at the University of Canterbury.

Applications for this PhD Scholarship:

Interested applicants should submit a detailed CV, including an academic transcript, a letter detailing their interest and suitability for this project, and the names and contact details of two academic referees. For more information on the department see www.geol.canterbury.ac.nz. All applications and further enquiries regarding this project should be directed to Alan Bischoff (alan.bischoff@pg.canterbury.ac.nz) or Andy Nicol (andy.nicol@canterbury.ac.nz).

The application deadline is 1st of December 2017. The successful applicant may commence the project immediately following this, subject to study visa requirements. Expected start date is 1st of February 2018.