



Open PhD Position in Geochemistry (Paleoclimate)

Title

How does Earth's natural thermostat really work?

Supervisor

Terry Isson (University of Waikato – Tauranga Campus)

Description

Processes within the globally coupled carbon and silica cycles is believed to have regulated the evolution of Earth's climate. Yet we have a limited understanding of the kinetics and specific feedbacks that have allowed for long-term stability, runaway greenhouse/icehouse intervals, and baseline shifts in global temperatures. The goal of this project is to improve our understanding of how the global carbon-silica cycle regulates climate on Earth. Of particular interest, is the global balance of silicate weathering (a CO₂ sink) and the formation of authigenic silicate minerals (a source of CO₂). This project will combine field work, with mineralogical, elemental and isotopic (traditional and non-traditional) analysis with statistical and modelling methods. Intervals of investigation may include any of the following: (1) the long-term evolution of Earth's climate; (2) mass extinctions (e.g., the end-Permian extinction); (3) constraining the most elusive fluxes within the modern-day global carbon cycle budget. Overall, there is room for the selected candidate to lead the way in shaping the project and overall thesis. Kindly contact me with any questions at tisson@waikato.ac.nz.

Prior experience

Prior experience in any of the following fields: isotope geochemistry (or other), geology, aqueous chemistry, global biogeochemical cycling, box modelling, carbon cycling is highly valued.

As part of your application package, kindly include:

1. CV (including 2-3 referee information)
2. Cover Letter (this may include: a description of why you want to undertake a PhD; how your previous experiences have prepared you for the research project that you are applying for; what your passions are within or outside of academia)

Applications will be accepted beginning 12th January until the position is filled (March 2024).

Kindly email your application to: tisson@waikato.ac.nz