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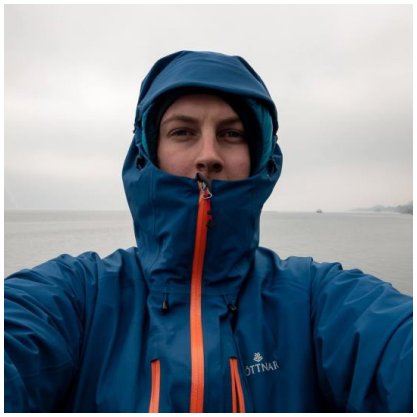

Brief Summary

My PhD focuses on developing and implementing a robust analytical toolbox that can be applied to the exhumation history of the Western Gneiss Complex (WGC), Norway one of the largest surface expressions of high pressure and ultra-high-pressure metamorphism. Much debate exists on the method/s that allowed the exhumation of the WGC primarily centred around the existence or lack of large crustal structures that may point to one of two exhumation mechanisms. At present the spatial distribution of data makes it difficult to explore for subtle temporal and pressure temperature variations. These may give vital clues on the structure of the WGC, allowing determinations to be made about the mechanism/s of exhumation.

I aim to explore at a terrane scale for these subtle variations using a number of new techniques largely centred around recent advances in collision cell LA-ICP-MS using triple quadrupole mass spectrometers. This development allows for rapid collection of isotope systematics such as Lu-Hf in garnet and Rb-Sr in mica that was only previously possible through a lengthy isotope dissolution process. I will also collect spatially varied U-Pb rutile data that along with the aforementioned Rb-Sr in mica will provide different time constraints on the exhumation. Recent developments in elastic geothermobarometry using Raman spectroscopy of enamoured quartz inclusions in garnet will also be key to this thesis, allowing the gathering of *pressure-temperature* information from samples that lack the required mineralogy to make them candidates for conventional thermobarometry or phase equilibria modelling.

Education: BSc Applied Geology, MRes Earth and Planetary Science (Curtin)

Research interests: (U)HP metamorphism, thermobarometry, geochronology, isotope geology

Thesis title: A window into the Earth: Deep crustal processes within the (ultra) high-pressure Western Gneiss Complex

Supervisors: Prof. Chris Clark, A/Prof. Tim Johnson, Dr. Kai Rankenburg

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