

18 October 2021

PhD position: Tracking stable isotope fractionations in Archean Banded Iron Formations

We are seeking an enthusiastic and highly motivated student to undertake a fully-funded PhD project investigating novel stable isotope fractionations (Nd, Zn) in banded iron formations. This PhD project is part of larger ARC funded project on 'Linking continental emergence and climatic evolution on the Early Earth'.

Sustained continental emergence (i.e. above sea-level) was a pivotal moment in Earth's history. However, the question of when this happened and how much continental crust was initially emergent in the past remains poorly constrained. Therefore, biologic and atmospheric evolution is intimately linked to poorly understood changes in the solid Earth. This PhD project will involve laboratory experiments to simulate the formation of Fe-oxides and carbonates from seawater and trace the chemical and isotopic effects of this process. Given that stable isotope fractionation occurs during oxide and carbonate formation, this work is imperative to be able to accurately interpret the variations observed in natural banded iron formations.

We are looking for a candidate with a background in geoscience and a strong theoretical understanding of geochemistry. The ideal candidate would have previous experience in wet chemistry, clean laboratory geochemistry and/or mass spectrometer experience, although having all these skills is not essential. The candidate will be based at James Cook University in Townsville, Australia, under the supervision of Dr Alex McCoy-West and Prof Paul Dirks. The Advanced Analytical Centre at JCU contains a suite of world-class research facilities in geochemistry. Of direct relevance to this project, it houses the Isotropics Geochemistry Laboratory, a newly installed anoxic chamber, a ThermoFisher Neptune MC-ICP-MS, and a triple-quadrupole iCAP-TQ.

Candidates should submit to alex.mccoywest@jcu.edu.au a complete CV (including academic transcripts) and a letter containing the following information - motivation for applying, research interests and experience, and the name and contact details of two or more academic referees. Please do not hesitate to contact me for further information. This opportunity for a fully-funded PhD position is independent of normal application deadlines. Applications received on or before **30th Nov 2021** will be considered. The successful applicant will be expected to take up the position no later than the 1st of April 2022.

Dr Alex McCoy-West
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