



THE UNIVERSITY OF
**WESTERN
AUSTRALIA**

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PhD Scholarship (fully funded): *Climate Change in the Deep Oceans*

We seek a PhD student with an excellent academic record and relevant qualifications to undertake research on ‘Climate change in the deep oceans’. The research will incorporate both deep-water coral geochemistry and ocean modelling to understand how the Southern Ocean has influenced past changes in global climate, and its future role in controlling ocean productivity and environmental change in a high CO₂ warming world.

A suite of geochemical applications (e.g. U-series dating, proxies for temperature, nutrients, and water mass tracing) will be utilised to reconstruct environmental changes occurring over different timescales in intermediate and deep waters within the SE Indian Ocean and Southern Ocean. The research will exploit a unique suite of recently collected subfossil and live deep-water corals from southwest Australian waters (R/V Falkor ROV expedition: <http://schmidtocean.org/cruises>).

Conditions: UWA will provide a fully funded PhD stipend of \$30,000 per year for 3 years (commencing 2021) with the possibility of an additional 6 months extension. A \$5000 support package is also provided consisting of a \$2000 laptop, and \$3000 to present research outcomes at ARC Centre of Excellence and international conferences.

Facilities: UWA has unrivalled analytical capabilities for analysing the chemical and microstructural compositions of biological archives. These encompass an elemental and isotope mass spectrometry facility incorporating a Clean Room, Q-ICPMS, HR-ICPMS, x2 MC-ICPMS and laser systems, together with several ion microprobe (SIMS, NanoSIMS), microRaman, and tomography platforms at the Centre for Microscopy, Characterisation and Analysis.

Research team: The successful candidate will join a world-class research team with strong national and international links (<https://www.coralcoe.org.au>) focused on reconstructing ocean-climate and nutrient dynamics using corals and ocean geochemical modelling (<http://oceanchange.com.au>).

Contact: For more details please contact Professor Malcolm McCulloch (Malcolm.McCulloch@uwa.edu.au). (Commencement before June 2021 preferred)