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Brief Summary

I received BSc and MSc degrees from Free University Berlin (Germany) in 2014 and 2017, respectively and started my PhD at Curtin in 2018. I am applying geochemistry and geochronology to track the evolution of tectonics and its repercussion on biogenic and atmospheric processes through the Earth's history. A number of fundamental changes is evident from the geologic record at the Archean-Paleoproterozoic transition. My current research focuses on one of these secular changes: the Proterozoic oxygenation of Earth's atmosphere, termed the Great Oxidation Event. The rise of atmospheric oxygen drastically impacted our planet's surface and played a crucial role in the evolution of life. While the timing of the onset of the Great Oxidation Event is well constrained at the near surface of the Earth its cause remains highly controversial and its link to the deeper lithosphere is poorly understood. My project encompasses U-Pb geochronology, in tandem with multiple sulfur, oxygen and hafnium isotope geochemistry of a global sample set. The combination of these methods provides a powerful tool in establishing a clear link between the Earth's atmospheric and biologic processes to the deep Earth at this time of major changes in Earth history.

Education:

BSc and MSc at Free University Berlin (Germany)

Research interests:

Isotope geochemistry, geochronology, secular changes in geochemistry and tectonics at the Archean-Paleoproterozoic boundary

Thesis title:

Linking atmospheric oxygenation and the deep Earth

Supervisors: Dr Chris Spencer & Associate Professor Chris Kirkland