

## PhD Research Project

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### From Greenhouse to Icehouse: Reconstructing Paleogene to Neogene vegetation and climate change of East Antarctica

Institution: Northumbria University

Dept/School/Faculty: School of the Built and Natural Environment

PhD Supervisor: Dr U Salzmann

Application Deadline: 27 April 2012

Funding Availability: Competition Funded PhD Project (Students Worldwide)

The transition from "Greenhouse-" to "Icehouse Earth" during the early and middle Tertiary geological period, ca. 50-20 million years ago, was one of the most significant steps in large-scale global environmental change. Climate model simulations and proxy data suggest that decreasing carbon dioxide concentrations in the atmosphere and/or tectonic changes were the main driving forces for a cooling trend impacting global sea levels, biotic evolution and the initial onset of Antarctic glaciation. The main goal of this PhD project is to reconstruct the highly sensitive polar vegetation and climate during the greenhouse to icehouse transition which is of great relevance towards better constraining future global climate change and its underlying mechanisms. The proposed study will focus on pollen analysis of Oligocene samples from marine cores taken offshore Wilkes Land, East Antarctica, during the successfully accomplished international Integrated Ocean Drilling Program (IODP), Expedition 318. The results will be compared with complementary analyses from terrestrial and marine records from the Tasman Sea. The interpretation of pollen proxies and reconstruction of vegetation and climate history will be supported by results from other biological and chemical studies provided by project partners. The analyses will also be integrated into a new synthesis of global palaeobotanical proxy data from literature and compared with state-of-the-art Hadley Center climate model simulations. The project is multidisciplinary and the successful candidate will be actively involved in a very lively international research network with other universities, including Utrecht (Netherlands), Frankfurt (Germany) and Leeds (UK). Some knowledge in Palynology would be desirable and an understanding of Palaeoecology and global climatic change over the last 65 million years would be advantageous. Co-Supervisors are: Dr. John Woodward (University Northumbria) and Prof Joerg Pross (University Frankfurt, Germany).

Enquiries regarding this studentship should be made to

Dr Ulrich Salzmann; [ulrich.salzmann@northumbria.ac.uk](mailto:ulrich.salzmann@northumbria.ac.uk) ; Ph: +44 (0)191 2273874

Applicants should hold a first or upper second class honours degree (in a relevant subject) from a British higher education institution, or equivalent. Students who are not UK/EU residents are eligible to apply, provided they hold the relevant academic qualifications, together with an IELTS score of at least 7.0. You should apply using the University's Research Application Form, available via the link on this page. Applications should be submitted to:

Ms Jem Pendlington

School of the Built and Natural Environment

Wynne Jones 202

Northumbria University

Ellison Place

Newcastle Upon Tyne

NE1 8ST

tel: +44(0)191 243 7234

email: [bn.research.students.enquiries@northumbria.ac.uk](mailto:bn.research.students.enquiries@northumbria.ac.uk)

Funding Notes:

The studentship includes a full stipend, paid for three years at RCUK rates (figure for 2012/13 is 13,590 pa) and home fees.