

THE UNIVERSITY OF MANCHESTER

SCHOOL OF EARTH, ATMOSPHERIC AND
ENVIRONMENTAL SCIENCES**Post-doctoral research associate: Marine
Geology and Geophysics**

Applications are invited for a post-doctoral research associate in Marine Geology and Geophysics to investigate pelagic sediments of the equatorial Pacific Ocean in seismic reflection data.

Paleoceanography aims to unravel information on the state of the oceans from the pelagic sediments deposited on the ocean floor, but the record is complicated. In popular perceptions, pelagic sediments accumulate by particles falling vertically to deposit simply draping their underlying basin topography and their properties therefore reflect their overlying water columns. However, our work on the equatorial Pacific region with seismic data and that of others with radiogenic isotopes such as Th^{230} suggests that their accumulation can be far less regular. At an abyssal hill scale, sediments drape or preferentially fill basins, as might be expected from gravity-driven transport. At a larger 50-100 km scale, their accumulation also varies significantly, suggesting varied effects of carbonate dissolution and particle transport by currents, processes that could strongly affect paleoceanographic information inferred from cores. The origin of this variability lies in how the physical and chemical state of the ocean has changed throughout the Neogene but is very poorly understood.

This project will allow a researcher to tackle the issue of how pelagic sediments accumulate and their implications for paleoceanography. The results will integrate with the on-going science being carried out on sediment cores and geophysical logs collected during recent expeditions 320 and 321 of the Integrated Ocean Drilling Program. The main dataset to be studied comprises new high-resolution seismic reflection data collected on *R/V Roger Revelle* in 2006, jointly funded by the UK's NERC and the USA's NSF. Those data, along with seismic data collected during previous expeditions of *R/V Washington*, now provides information on pelagic deposits across a region of the central Pacific more than 3000 km across, allowing variability to be analysed across a vast range of scales.

Appointment will be for 17 months. Informal enquiries can be made to Dr Neil Mitchell (neil.mitchell "at" manchester.ac.uk). Application details are available from the University's website (post EPS/10072) or through the following link:
<http://www.manchester.ac.uk/aboutus/jobs/research/vacancy/index.htm?ref=170966>