



Fully funded PhD opportunity in Geoarchaeology

Location

Centre for Archaeological Science (CAS), University of Wollongong, Wollongong, NSW, Australia.

The Position

Applications are invited for a fully funded PhD position within the Centre for Archaeological Science (CAS), University of Wollongong (UOW). The successful candidate will join a multi-disciplinary project that is seeking to generate new data related to the Late Pleistocene colonisation of Asia and Australasia by modern humans (*Homo sapiens*) and other archaic hominins present in the region at this time. This forms part of the Australian Research Council (ARC) Laureate Fellowship project led by Prof. Richard 'Bert' Roberts, 'Out of Asia: unique insights into human evolution and interactions using frontier technologies in archaeological science'. To address important questions concerning the origins of our species we are developing a number of innovative archaeological science techniques, focussed on combining archaeo-chemical, geochronological and geoarchaeological research strands.

The geoarchaeological component of this project is focussing on spatially-resolved data acquisition at the micro-scale, linking on-site indicators of environmental change to the wider dynamics of the Quaternary landscape and climate systems. We are interested in how hominins interacted with the environments in which they lived, and the directionality of these interrelationships. Archaeological sediments are laid down and post-depositionally modified through the complex interplay between a broad range of geomorphic and anthropogenic processes. These processes leave behind diagnostic signatures that can be sought and identified at the micro-scale, allowing for additional dimensions of data to supplement more traditional field and laboratory techniques. The position will involve overseas fieldwork at archaeological sites in Southeast Asia, and an intensive, laboratory-based analytical research program.

Specific topics within the wider remit of the project might include:

- Micromorphological signatures of tropical environmental change recorded in cave and rockshelter sediment sequences in humid tropical environments
- The application of micromorphology in tandem with FTIR and Raman spectroscopy to reconstruct the depositional and post-depositional histories of archaeological sites
- The geoarchaeology of human dispersals: reconstructing past environments and human behaviour to elucidate the nature and context of the colonisation of Sunda and Sahul by *Homo sapiens*

The Institution

CAS was established at UOW in 2010 to develop, integrate and apply modern scientific techniques to answer fundamental questions about human evolution and the analysis of material remains of past human life and activities. CAS is affiliated with the School of Earth & Environmental Sciences (SEES), bringing together researchers drawn from the physical, chemical, biological and geological sciences in partnership with science-based archaeologists. This means that there is plenty of scope to interact and collaborate with experts from across the Earth Sciences, and indeed PhD candidates are encouraged to do so. Geoarchaeology at CAS is led by Dr Mike Morley and Prof. Paul Goldberg, with whom successful candidates would work closely during their PhD program.

At CAS we have world-class laboratory facilities, including a fully equipped optical microscopy facility, a geoarchaeology and sedimentology laboratory, and an FTIR and Raman spectroscopy unit. Our multi-disciplinary team allows for potential collaboration across a wide range of fields of expertise.

The Candidate

The candidate will have a first class undergraduate degree (preferably an Honours degree) in Archaeology, Archaeological Science, the Earth Sciences, or a related discipline, and a proven track record of publication. A postgraduate qualification, although not strictly essential, would be highly desirable. Candidates that can prove high levels of proficiency acquired outside of higher education (e.g. in commercial consultancy) will also be considered.

The successful applicant will be fully committed to conducting independent and original scientific research, and will be expected to disseminate this research in peer-reviewed international journal papers and conference

presentations, as well as in their final PhD thesis. The PhD candidate will be encouraged to undertake training in relevant analytical techniques. The candidate must be willing to conduct overseas fieldwork, often in challenging environments.

Funding

The value of this ARC Laureate scholarship is AUD \$31,296 per annum.

Availability

Both domestic and international prospective candidates are welcome to apply.

Application deadline

31 July 2015, for start as soon as possible in 2015.

Selection Criteria

All applicants will be equally considered and evaluated based on their education background, research and/or working experience.

Application details

If you believe that you meet the criteria outlined above and would like to apply for this position please contact Dr Mike Morley by email in the first instance, including a CV and covering letter, to arrange an informal discussion about the project and the PhD research.

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For more information about CAS:

<http://cas.uow.edu.au/index.html>