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PERSONAL STATEMENT

introduction

I am an archaeologist interested in human behavior, technology and ecology. My approach to these themes is motivated by models and methods from the evolutionary sciences. I seek to adapt these methods and models to better understand the human past. My main research activities include investigating questions of technological variation and ecological adaptation, cultural change and cultural transmission. I have a deep interest in mainland Southeast Asia and Australia, and fieldwork in these locations supplies the empirical content of my research. Fundamental to these explorations are my concerns for the social relevance and disciplinary integrity for archaeology.

I began my research career investigating questions about Australian Aboriginal hunter-gatherer adaptation and mobility during the Late Pleistocene and Holocene periods (Marwick 2002b), (2002a, 2005b). I analyzed stone artefact technology and developed new geoarchaeological methods for identifying variation in intensity and duration of site occupation for the inland Pilbara region of Western Australia. These methods were developed to address the general problem of robustly explaining past human behavior using archaeological deposits that have low densities of artefacts. Motivated by the potential of stone artefact and geoarchaeological analysis to investigate archaeological problems that are intractable with conventional archaeological approaches, I extended my empirical research into Southeast Asia. My dissertation research (Marwick 2008 into the relationship between stone artefact technological variation and local ecological conditions in Thailand was a driven by the question of how the ecological conditions of the seasonal tropics related to decisions people made to change their stone artefact technology or change their settlement locations in the tropics.

My research draws on three motives for working in mainland Southeast Asia. I am first motivated to understand the histories and adaptations of Middle and Late Pleistocene hominins in Southeast Asia. This is an extension of my Australian research, as these early colonists of Southeast Asia were probably ancestral to the first human occupants of Australia. My second motive is to understand how hunter-gatherers in Southeast Asia changed during the transition to domestication, a transition that did not occur in prehistoric times in Australia but has profoundly shaped modern Southeast Asian society. Finally, I am energized by the dual practical challenges of working in region where knowledge about human prehistory is sparse and

contributing to the development of local institutions and individuals that research, teach and promote the social relevance of archaeology.

In what follows, I will describe my research trajectory since arriving at the University of Washington in 2008 and explain how the characteristics that distinguish my research – namely, its philosophical engagement with scientific practice and its focus on improving judgment through social change – contribute to my teaching and service.

research trajectory

Emerging from my dissertation research has been a collaboration with a colleague from the Earth Sciences to construct a local palaeoclimate proxy from oxygen isotope values obtained from shell fish recovered from the same archaeological deposit as the stone artefacts. We published this study in *Quaternary Science Reviews* (Marwick and Gagan 2011). This proxy is the first oxygen isotope curve for mainland Southeast Asia which so far has been dependent on discontinuous pollen sequences for palaeoclimate data. Our oxygen isotope curve provides the first evidence of a major change in conditions from the Pleistocene to the Holocene, a finding consistent with evidence from similar records in China. A second extension from my dissertation has been a paper in the *Journal of Anthropological Archaeology* describing a modified behavioural ecological model (Marwick 2013) that resolves the apparent inconsistencies in the data from Thailand by proposed a novel general model of multiple optima.

In 2011 I extended this research to a

My plans to continue this work in Southeast Asia include an application in preparation with Thai and Australian colleagues for funds from the NSF to survey and excavate a rockshelter site in southern Thailand on the isthmus of Kra. I intend to submit this application in July 2010. This work will complement two submitted applications on which I am a co-PI for funding from the Australian Research Council to work on similar-aged sites in island Southeast Asia and northern Australia. The outcome of these Australian applications will be known in Dec 2010.

teaching

Describe your philosophy regarding the teaching and training of the next generation of scientists and, if appropriate non-scientists (for example, general education students or future K-12 teachers). Prepare a table that summarizes your teaching activity semester by semester (including course number, course title, number of students, and course evaluation information); acknowledge if the course is co-taught.

service

Prepare a table that summarizes your service contributions to the department, college & or university, and profession (including leadership roles and dates of service). Describe how your service contributions support the mission of your department and of your institution.