



International applicants welcome

Within the framework of the recently funded ARC DECRA Fellowship “The hobbit's tools and the evolution of human behaviour in Southeast Asia”, we are seeking an enthusiastic and highly motivated PhD student to commence a three-year interdisciplinary project at the [Centre for Archaeological Science, University of Wollongong](#) latest by July 2021.

Overview

As one of the most enduring archaeological materials, stone artefacts represent a key source of information for understanding the evolution of human behaviour over the past 3–2 million years. Archaeologists have increasingly recognised the importance of incorporating biomechanical information into the study of prehistoric stone tool technology. In particular, the hominin fossil record shows a range of skeletal variation in the hand, wrist and shoulder morphology that would have impacted the ways in which archaic hominins produced stone tools. Clarifying the relationship between hominin anatomy and the practice of stone knapping is thus critical for refining current interpretations of Palaeolithic stone tool technologies, as well as broader issues relating to the cognitive and cultural developments in human evolution.

Combining biomechanical modelling with experimental archaeology, this PhD project aims to develop a musculoskeletal model to simulate the stone knapping process, which will be used to examine the effects of variation in hominin wrist and hand morphology on stone tool production. This work will entail using OpenSim, MATLAB and other computer-based methods for biomechanical modelling, familiarising with the anatomical variation of archaic hominin wrist and hand structure, and conducting stone flaking experiments to translate model findings to archaeologically visible artefact attributes. This project will be carried out with specific reference to the known morphology of *Homo floresiensis* (dubbed the ‘hobbit’) and the stone artefacts associated with this small statured hominin.

The successful candidate should hold a first-class Honours or Master’s degree (or equivalent) in a relevant discipline (archaeology, biological anthropology, biomechanics) and have a keen interest in human evolution and interdisciplinary research. Preference will be given to applicants who have prior experience in computer science, biomechanics or human physiology. The PhD position will be supported by a full PhD scholarship from the University of Wollongong for three years.



Supervisors

- **Dr Sam Lin** (Centre for Archaeological Science, University of Wollongong) [\[profile\]](#)
- **Dr Manish Sreenivasa** (School of Mechanical, Materials, Mechatronic and Biomedical Engineering, University of Wollongong) [\[profile\]](#)
- **A/Prof Matthew Tocheri** (Department of Anthropology, Lakehead University) [\[profile\]](#)
- **Dr Thomas Sutikna** (ARC Centre of Excellence for Australian Biodiversity and Heritage, University of Wollongong) [\[profile\]](#)

How to apply

If you are interested in the position, please send **(i) a cover letter**, **(ii) a CV**, **(iii) a transcript**, and **(iv) the names and email addresses of two referees** to Sam Lin (samlin@uow.edu.au) by 26 March 2021. The top candidates will be invited for interview in early April 2021. **The start date for the PhD position must be 26 July 2021 at the latest.**