



2018 YCCSA SUMMER SCHOLARSHIP PROJECT SUBMISSION

This form is for prospective project supervisors to submit their projects to be included in the YCCSA Summer Scholarships Programme for 2018.

It is the purpose of the YCCSA Summer School that any projects submitted are novel and interdisciplinary in nature.

Date	
Supervisors' Names and Departments / Affiliation and Contact Email	<p><i>Penny Spikins (Archaeology), Barry Wright (Health Sciences), Calvin Dytham (Biology)</i></p> <p>Penny.spikins@york.ac.uk</p> <p>Barry.wright1@nhs.net</p> <p>Calvin.Dytham@york.ac.uk</p>
Project Title	Healthcare provisioning and human evolutionary success
Project Description	<p>The significance of certain forms of collaboration, altruism and risk sharing to human evolutionary success have been appreciated for some time, thanks to ecological comparisons with other species. Wolves hunt together and share food for example, and meerkats parent collaboratively so we can understand how such behaviours work, and models of these behaviours exist. However healthcare provisioning in archaic and earlier species of human has been largely ignored (indeed any care for the injured is often seen as enigmatic weakness), an oversight which is at least partly due the uniqueness of healthcare provisioning to human ancestry. Remarkably there are no models of the significance of healthcare provisioning to survival.</p> <p>This project would create the first agent based model of healthcare provisioning and its significance to human groups in the distant evolutionary past. There is good evidence for the emergence of care for the ill and injured from around 1.6 million years ago and detailed records of patterns of care and survival by the time of archaic species such as Neanderthals (living 300,000 to 40,000 years ago) within whom such care is widespread for example. Almost all Neanderthals suffered a serious traumatic injury before adulthood for example, and all recorded cases of serious injury show recovery attributable to care (through practices such as immobilisation and providing food and water). The model would take advantage of a unique database of evidence for injury and recovery in archaic humans collected as part of the Templeton Foundation funded 'Hidden Depths' Project.</p> <p>In modern hunter-gatherers healthcare has a significant impact on improving mortality and we hypothesise that this was also true in human groups in the distant past. Indeed survival in some environments where hunting of dangerous prey was the main form of subsistence may have depended on healthcare. An agent based model would allow us to address some of these questions, such as by</p>

	<p>addressing the level of hunting risk at which healthcare provisioning becomes essential to group survival.</p> <p>The student would be expected to be involved in the publication of the results.</p>
Required Skills	Programming skills, preferable with some experience with dynamic or agent-based modelling
Supervision and Collaboration Arrangements	<p>The whole supervisor team will be actively involved. Penny Spikins (as the primary supervisor) will be available throughout the summer. Barry and Calvin will also be available to provide advice and defined meetings during this period. We three academics from very different departments already collaborate to successfully supervise a (NERC ACCE) PhD student (environmental variability and human cognitive variation) though we have not collaborated previously in research. We would both meet with the student in person and use for example google docs to coordinate progress and provide advice.</p>
Project Dates	The summer school runs for 9 weeks, starting on Monday, 09 July 2018 and finishing on Friday, 07 September 2018.
Other Information	<p>This project demands a unique interdisciplinary approach combining archaeology, healthcare and biological modelling, which we are able to provide. The project also has unique access to a database of injury and recovery in archaic skeletal material collected through the Templeton Foundation 'Hidden Depths' project.</p> <p>The results of the project are likely to be highly publishable and may have implications for our wider cultural perspectives on healthcare provisioning.</p>
References	<p>Spikins, P., Needham, A., Tilley, L and Hitchens, G. in review. <i>Calculated or caring? Neanderthal healthcare in social context</i>, submitted to World Archaeology</p> <p>Spikins, P., 2015a. <i>How Compassion Made Us Human: The Evolutionary Origins of Tenderness, Trust and Morality</i>, Barnsley, UK: Pen and Sword.</p> <p>Spikins, P., Rutherford, H. & Needham, A., 2010. From hominity to humanity: the prehistory of compassion. <i>Time and Mind</i>, 3, pp.303–325.</p> <p>Sugiyama, Lawrence S. 2004. <i>Patterns of Shiwiari health insults indicate that provisioning during health crises reduces juvenile mortality</i>. In <i>Socioeconomic Aspects of Human Behavioral Ecology</i>, 379–402.</p> <p>Sugiyama, Lawrence S., and Richard Chacon. 2000. Effects of Illness and Injury on Foraging among the Yora and Shiwiari: Pathology Risk as Adaptive Problem. In <i>Human Behavior and Adaptation: An Anthropological Perspective.</i>, edited by N. A. Chagnon, L. Cronk, and W. Irons, 371–95. New York : Aldine de Gruyter.</p>

When complete, please email the form to sarah.christmas@york.ac.uk