

Annemieke Milks, MM, MSc, PhD

email: annemieke.milks@gmail.com
Orcid: <https://orcid.org/0000-0003-0779-6200>
Twitter: @AnnemiekeMilks

Nationalities: Netherlands, USA

Languages: English, French

Research Interests

My research is centred on the archaeology of Pleistocene humans, and in particular, subsistence behaviours and technologies. My expertise is in hunting technologies focussing specifically on the use of wood and my work has gained international media coverage and engagement with a wide audience. My most recently published article has had a particularly significant impact, in the top 5% of all research outputs ever tracked by Altmetric (<https://nature.altmetric.com/details/54477949#score>). I am passionate about communicating archaeological research to the wider community and publishing Open Access. Since 2009 I have collaborated on excavations and analysis of materials from archaeological sites in Spain, France, Jersey, Germany and the UK, and conducted experimental work in collaboration with Cranfield Defence and Security (Defence Academy of the UK) and Loughborough University.

Education

- 2018 PhD** (awarded March 2018) *Lethal Threshold: The Evolutionary Implications of Middle Pleistocene Wooden Spears*, UCL Institute of Archaeology
Supervisors: Dr. Matt Pope, Dr. Louise Martin
Examiners: Dr. Nick Ashton, Prof. Marie Soressi
- 2010 MSc (Distinction)** Palaeoanthropology & Palaeolithic Archaeology, UCL Institute of Archaeology and Department of Anthropology
- 2002 MM** Violin Performance, Carnegie Mellon University
- 2000 BM** (*summa cum laude*), Violin Performance, University of Michigan
-

Publications

Published

Milks, A. 2019. Skills shortage: A Critical Evaluation of the Use of Human Participants in Early Spear Experiments. *EXARC Journal*, 2019/2. <https://exarc.net/issue-2019-2/ea/skills-shortage-critical-evaluation-use-human-participants-early-spear-experiments>

Milks, A., Parker, D., Pope, M. 2019. External ballistics of Pleistocene hand-thrown spears: experimental performance data and implications for human evolution. *Nature: Scientific Reports*, 9:820. <https://www.nature.com/articles/s41598-018-37904-w>

Milks, A. 2018. Making an Impact. *Nature: Ecology & Evolution* 2: 1057–1058. <http://dx.doi.org/10.1038/s41559-018-0600-9>

Milks, A., Champion, C., Cowper, E., Pope, M., Carr, D. 2018. Speere im Einsatz! Nachbauten der Schöninger Holz Waffen im Experiment. In Terberger, T., Böhner, U., Hillgruber, F., & Kotula A. 300.000 Jahre Spitzentechnik – der altsteinzeitliche Fundplatz Schöningen und die ältesten Speere der Menschheit. Theiss Edition AiD.

Milks, A., Champion, C., Cowper, E., Pope, M., Carr, D. 2016. Early spears as thrusting weapons: Isolating force and impact velocities in human performance trials. *Journal of Archaeological Science: Reports*, 10: 191-203. <https://doi.org/10.1016/j.jasrep.2016.09.005>

Milks, A., Dinnis, R., Pope, M. 2016. Morpho-metric Variability Of Early Gravettian Tanged "Font-Robert" Points, And Functional Implications. In Iovita, R., & Katsuhiko, S. (Eds.) *Multidisciplinary Approaches to the Study of Stone Age Weaponry*. New York: Springer. Chapter 9, 135-146. <http://doi.org/10.1007/978-94-017-7602-8>

Pope M., Dinnis R., Milks A., Toms P., Wells C. 2013. A Middle Palaeolithic to Early Upper Palaeolithic succession from an open air site at Beedings, West Sussex. *Quaternary International*, 316: 14-26. <http://dx.doi.org/10.1016/j.quaint.2013.06.027>

In Preparation

Milks, A., Parfitt, S., Pope, M. (In Prep). Assessing the horse scapula fragment from Boxgrove GTP 17 Unit 4B: experimental and morphometric approaches.

Milks, A. (In Prep). The use of wooden spears in hunting and violence: a meta-ethnography.

Funding and Awards

Awarded

- 2019 Wenner-Gren Foundation** \$19,560 Fieldwork grant for project:
Hand-thrown spears: Ballistics, accuracy and learning to hunt among BaYaka Congo Basin foragers (Co-PI with Sheina Lew-Levy, University of Cambridge)
- 2019 Leakey Foundation**
Hand-thrown spears: Ballistics, accuracy and learning to hunt among BaYaka Congo Basin foragers (Co-PI with Sheina Lew-Levy, University of Cambridge)
- 2016 Armourers and Brasiers Gauntlet Trust** £500 grant for PhD experiments
- 2016 Crowdfunded grant on platform experiment.com** £1120 by 14 backers
<https://experiment.com/projects/did-our-ancestors-use-wooden-spears-as-hand-thrown-hunting-weapons>
- 2016 UCL Institute of Archaeology** £1350 Grant for fieldwork, research or placements
- 2015 European Human Behaviour and Evolution Association** €459 Student Research Grant
- 2013-2016 Arts and Humanities Research Council** £15,600 per annum PhD research studentship
- 2010 UCL Institute of Archaeology Master's Prize** In recognition of outstanding performance in MSc and in particular the dissertation
- 2000 Fellowship Student Carnegie Mellon University**, full tuition scholarship
- 1999 Juanita Weddige Scholarship** \$10,000

Conferences and Invited Talks

Integrating experimental archaeology, ballistics, and morphometric analysis to understand the earliest hunting weapons. February 27, 2019. **UCL Institute of Archaeology Palaeolithic Seminar Series: Diversification in Human Evolution Studies.**

Assessing hand-delivered wooden spears as effective hunting weapons using experimental, archaeological, and ethnographic evidence. September 15 2018, **Podium presentation. 8th Annual meeting of the European Society for Human Evolution. Faro, Portugal.**

Tough and Bendy: Wood as a raw material for the earliest and longest-serving weapons. September 7, 2018, **Podium presentation. 24th Annual meeting of the European Association of Archaeologists Session 774, The missing woodland resources: approaches to the technological use of plant raw materials. Barcelona, Spain.**

The effectiveness of wooden spears as hunting weapons. June 13, 2018. **Invited talk for University of Cambridge, Biological Anthropology Seminar Series.**

Sticks and Stones may break these bones: Experimental approaches to identifying the use of wooden hunting spears during the Middle Pleistocene and beyond. June 4, 2018. **Podium presentation. 18e Congrès de l'UISPP, Session XIII-3 Integrating Ballistics into Archaeology. Paris, France**

Multidisciplinary research evaluating the use of wooden spears as hunting weapons. December 8 2017 **Invited talk for Dialoge zur Pleistozänen Archäologie Römisch-Germanisches Zentralmuseum. Monrepos, Germany**

Middle Pleistocene 'hunting lesions': experimental approaches to an archaeological puzzle. April 2016 **Poster for Society for American Archaeology 81st Annual Meeting. Orlando, USA**

Scratches, scrapes and splits: marks and breaks on the earliest weapons. January 2016 **Podium presentation for Unravelling the Palaeolithic, University of Southampton.**

Experimental and ethnographic research on wooden spears: how studying human performance, design and use-wear can aid in understanding function. June, 2015 **Invited talk, Schöningen Annual Working Group meeting, Schöningen, Germany.**

Human performance trials: spear thrusting and throwing. March 28, 2015 **Podium presentation for Experimental Approaches to the Palaeolithic and Mesolithic, Lithic Studies Society conference, University of Reading**

Speared or Spared? Interdisciplinary Experimental Research evaluating the lethality of Middle Pleistocene weapons. February 19, 2015. **Invited talk at University of Oxford, Palaeolithic and Quaternary Seminar Series (PalQuat)**

'Northern European evidence cited for Middle Pleistocene wooden spear use. September 2014. **17th World Congress, UISPP**

Fieldwork, Experimental research, and lab work

- 2013- Multi-phase experimental programme undertaken for PhD research**
2016 Collaborative experimental work involving human performance trials, ballistics experiments and actualistic replication. Multidisciplinary work involving collaborations with colleagues at Cranfield Defence and Security at the UK Defence Academy, Loughborough University, Royal Centre for Defence Medicine, and Institute of Filipino Martial Arts
- 2016 Menez-Dregan (France)** excavation and post-excavation assistant for Middle Pleistocene marine cave site
- 2013 Ice Age Island (Jersey)** excavation and archival work, Magdalenian open-air site
- 2010- Data processing and entry for lithics collection**, British Museum, Franks
2011 House. Handling Palaeolithic artifacts, digitising data for database, archival work.
- 2010 Experimental research for MSc dissertation** ballistic experiment focused on performance of Gravettian tanged points as weapon tips
- 2009- Experiment assistant** Assistant to Prof. Ignacio de la Torre in the
2010 organisation, recording and execution of experimental programme replicating pounding activities using raw material from Olduvai Gorge, Tanzania
- 2009- Laboratory assistant** Assistant to Prof. Ignacio de la Torre in lithics
2010 finds processing, data entry and database management (Access), lithic analysis and refitting, photography
- 2009- Buendia Rockshelter (Spain)** Magdalenian rockshelter
volunteer for excavation, post-excavation, and analysis
- 2009- Tidemills excavations, Bisopstone, Sussex.** Volunteer excavator.
2010

Public Engagement

<https://theconversation.com/why-the-neanderthals-may-have-been-more-sophisticated-hunters-than-we-thought-new-study-98870>

<https://www.nrc.nl/nieuws/2018/02/05/houten-graafstokken-en-hefbomen-van-neanderthalers-teruggevonden-a1591091>

<http://www.theverge.com/2016/1/20/10798042/ancient-violence-warfare-nature-study-kenya-nataruk>

Guest blog posts

<http://www.dayofarchaeology.com/3d-printing-and-archaeology/>

<http://www.dayofarchaeology.com/experimental-archaeology-bones-stones-and-spears/>

Selected Teaching Experience

- 2015-present** **Prehistoric music session organiser, UCL Prim Tech**
Design, organise and deliver annual sessions of the experimental manufacture of Palaeolithic musical instruments.
- 2015-2017** **Post Graduate Teaching Assistant, UCL** to Dr. Mark Lake for *Archaeology in the World*. Duties included assisting the lecturers in organising and running discussion sessions, assisting in the structuring of new course content, including the use of new platforms such as Campus Pack, assisting students in setting up blogs, formative feedback and second marking.
- 2016** **Handling Nerves: Tips and tricks to optimise speaking for academic and public presentations UCL.** Organised and ran training session for fellow research students
- 2014-2015** **Turnitin Advisor, UCL Institute of Archaeology**
Aided staff and students with online Turnitin system and updating course information on Institute's web pages.
- 2014** **Guest Lecture, UCL Institute of Archaeology**
Humans as predators: the role of weapons in human evolution, Masters course: The Archaeology of Early Human Origins
- 2014** **'Researching and writing up your Masters dissertation'**
UCL Institute of Archaeology SAMS workshop
- 2013-2014** **Post Graduate Teaching Assistant, UCL** to Prof. Cyprian Broodbank for *World Archaeology*. Duties included planning, organizing and running bi-weekly tutorial sessions, artifact handling, hosting lectures in Prof. Broodbank's absence, marking essays, running Moodle for course.

Organising committees

- 2013-present** Co-organiser of research network Archaeology of Human Evolution, UCL
- present** Member of organising group for Experimental Archaeology Course (Prim Tech), UCL
- 2017** Organising committee member UKAS conference, secured and coordinated conference and exhibition sponsorship
- 2016** Member of the organising committee for Morph16 conference at UCL Institute of Archaeology
- 2012** Co-founded 'Evolutionary Weapons Research Group' and co-organized workshop, May/June 2012 and pilot experiment at UCL and Cranfield Defence and Security

Member: Lithic Studies Society, European Society for the Study of Human Evolution, European Human Behaviour and Evolution Association

Skills

Languages:

French (advanced reading, writing and speaking skills), Italian, Spanish (intermediate reading skills, basic writing and speaking skills). German (beginner reading and speaking skills)

Writing and Editing Skills:

- Grant writing: writing grants for multiple awards throughout PhD research
- Copyediting UCL *Papers of the Institute of Archaeology*
- Peer-reviewer: regular reviewer for multiple journals including *Nature: Ecology & Evolution*, *Journal of Archaeological Science* and *Archaeometry*
<https://publons.com/author/1372528/annemieke-milks#profile>
- Newsletter Editor for charity (NCT Eastbourne) write, edit, produce and distribute a 36 page colour/b&w mixed A5 newsletter quarterly for the charity

Computer software:

3D scan editing openware: MeshLab

3D modeling software: SketchUp Pro

Statistics software: R, SPSS

Blogging platforms: Wordpress, Campus Pack

Photo/imaging software: Adobe Photoshop CS6, Lightroom 4, Adobe Illustrator

Database systems: (Access, Excel)

PDF management and bibliographic software: Papers

Student administration: Moodle, Turnitin, Silva Content Management System

High Speed Video: Imatek Phantom Cine Viewer

Microscopic analysis and imaging:

proficient user of DinoLite USB microscope, Scanning Electron Microscope (Hitachi 3400N VPSEM)

Archaeological materials:

Finds processing, lithic analysis, data entry, basic skills in photography and lithic illustration. Section drawing, planning. Dino-Lite digital microscope.