

JUNE 9TH & 10TH 2022

# 3RD EXPERIMENTAL ARCHAEOLOGY STUDENT SYMPOSIUM

University of Liverpool in partnership with EXARC

## ABSTRACT BOOKLET



# SCHEDULE

DAY 1 - THURSDAY 9TH JUNE - MORNING

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09:00 -10:00 - **Registration, Welcome & Introductions**

10:00 - **Keynote Speaker**

Prof. Aidan O'Sullivan & Dr. Brendan O'Neill

*University College Dublin, Republic of Ireland*

11:00 - **Session 1: Stone & Fire**

**Testing differential burning on bones: a preliminary experimental approach**

Goizane Alonso & Ruth Blasco

*Universidad de Burgos (UBU), Spain*

**Evaluating the effects of water transport in the development of post-depositional surface alterations on flint artifacts: an experimental approach**

Olivier Scancarell & Cristina Lemorini

*Sapienza Università di Roma, Italy*

**The Walk of Fire: understanding the implications of prehistoric pyrotechnology through experimental archaeology**

Bogden Manea, Vasile Opriș , Theodor Ignat & Cătălin Lazăr

*University of Bucharest, Romania*

**Burnt Tomb Objects: An Analysis of the Burning of Ancient Egyptian Objects from the Early Dynastic Tomb of Neith-Hotep**

Conor Lawlor

*University of Liverpool, UK*

# SCHEDULE

DAY 1 - THURSDAY 9TH JUNE - AFTERNOON

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13:00 - **Lunch**

14:00 - **Session 2: Reconstructing Technologies**

**Experiments in late Iron Age Pellet Mould Technology**

Jake Morley-Stone

*University of Liverpool, UK*

**Recreating Reflections: Mirror Production in Ancient Egypt**

Elizabeth Thomas

*University of Liverpool, UK*

**Living Prehistory and Experiential Education – How Effective Are Experimental Archaeological Techniques at Communicating Information For Children Aged 16 and Under?**

Ryan Gilkes

*Plymouth University, UK*

15:30 - 16:00 - **Break & Posters**

**Learning by making ancient Greek pottery: an experimental investigation on the productive process**

Francesca Tomei & Juan Ignacio Jimenez Rivero

*University of Liverpool, UK*

**Istori A Priweyth Kernowek: An object-biography of early Bronze Age Trevisker Ware**

Laura Miucci

*University College Dublin, Republic of Ireland*

17:00 - **End of Day 1**

# SCHEDULE

DAY 2 - FRIDAY 10TH JUNE

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09:00 - **Welcome**

10:00 - **Session 3: Bread & Food Production**

**The Nature of the Yeast: Bake like an Egyptian**

Iris Hoogeweyj

*University of Trier, Germany*

**The bread of life: an experimental approach to tannūr ovens,  
bread making and cooking in the Phoenician-Punic settlements of  
the Iberian Peninsula**

Penélope Martínez de los Reyes & Carmen Ramírez Cañas

*Universidad de Sevilla, Spain*

**Reconstruction of Roman Bread ovens from Doncaster Roman Fort**

Yvette Marks, Nicholas Groat & Matthew Lester

*University of Sheffield, UK*

12:00 - **Bus to the Experimental Archaeology Research and  
Teaching Hub (EARTH) at Ness Gardens**

13:00 - **BBQ & Activities at EARTH**

16:00 - **Bus back to the University of Liverpool**

17:00 - **End of Symposium**

# Testing differential burning on bones: a preliminary experimental approach

Goizane Alonso

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My name is Goizane Alonso Caño. I completed a bachelor's degree in Biology at Universidad del País Vasco and a master's degree in Human Evolution at Universidad de Burgos afterwards. I am especially interested in zooarchaeology and taphonomy and I am currently doing my PhD in that field.

Keywords: Middle Palaeolithic, fire-use, Neanderthal, experimental archaeology, burnt bones

## Abstract

The management of fire by human populations and its repercussion on hominin subsistence strategies are topics of particular interest to the scientific community. Burnt bones can provide valuable information, and as a consequence, several works on burning damage have been conducted during the last few years. However, there is still a need to build up a well-established body of knowledge, including the identification of a taphonomic pattern that allows recognising anthropogenic fire use on faunal remains. This study aims to contribute to this topic with the development of experimental protocols and referential databases, which will be subsequently applied to the Middle Palaeolithic site of Teixoneres Cave (Moià, Barcelona, Spain). Our preliminary experimental results suggest differential burning pattern determined from heat intensity and exposure time. With this study, we intend to show the usefulness of experimental archaeology to replicate past scenarios and dissecting archaeological palimpsests. This project is a starting point that aims to help establish bases for further research related to the Neanderthal fire-use.

# Evaluating the effects of water transport in the development of post-depositional surface alterations on flint artifacts: an experimental approach

Olivier Scancarello

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Olivier Scancarello is a prehistoric archaeologist with a main interest in African archaeology. In 2021 he finished a post graduate School of Archaeology at Sapienza University of Rome, and he is currently a visiting student at PACEA UMR 5199 at University of Bordeaux where he works on different aspects of lithic taphonomy and use-wear analyses. His research interests mainly focus on the Pleistocene to Holocene transition and on the cultural responses to environmental changes, especially from arid environments, lithic technology and taphonomy, raw materials exploitation, site formation processes and site integrity.



**Keywords:** tribology, flint artifacts, experimental archaeology, taphonomy, hydraulic transport

## Abstract

Tribology is an engineering science concerned with the study of physical systems of interacting surfaces in motion. Friction is generally responsible for the development of wear, defined as damages on solid surfaces caused by the gradual removal of material. Lithic artifacts, the most common archaeological record found at Paleolithic/Stone Age sites, are not exempted from those mechanisms. Wear on prehistoric lithic artifacts can be generated by the active use of tools (cultural process) and/or by post-depositional (natural) processes. Here we present an experimental approach aimed at assessing the effects of hydraulic transport of flint artifacts on the development of post-depositional surface alterations (PDSA), to better interpret archaeological contexts characterized by alluvial/colluvial sedimentological sequences, a very frequent condition in Paleolithic/Stone Age archaeology. It has been possible to observe and describe six PDSA that occurred at different stages of the experiment. Moreover, four variables that affected the PDSA have been identified: i) raw material; ii) time; ii) artifacts edges' thickness and iv) artifacts' density.

# The Walk of Fire: understanding the implications of prehistoric pyrotechnology through experimental archaeology

Bogdan Manea

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Bogdan Manea is a young researcher in the field of archaeological sciences, currently working within the Research Institute of the University of Bucharest (ICUB), ArchaeoSciences Division, Romania. He studies ceramic pyrotechnology in the prehistory of South East Europe, through experimental archaeology and archaeometry.



Keywords: experimental archaeology, pyrotechnology, prehistory

## Abstract

Throughout the years, experiments on prehistoric pottery firing installations have mainly addressed the use of multiple techniques for achieving different combustion atmospheres, thermal fluctuations (maximum temperatures/heating rate/soaking time/cooling rate), temporal data of the firing/fuelling, as well as the type/amount of fuel used. However, although the above mentioned research segments are extremely important, a more broader perspective analysis involving the human factor during building/using particular firing structures would play a key role towards better understanding the decision making behind the overall process of ceramic production, during prehistory. The current presentation provides the results of an experimental archaeology project undertaken at Sultana-Malu Roșu (Romania), which focused on reconstructing past behavior when building/using different types of pottery firing structures certified for the Chalcolithic period from Southeast Europe. The whole range of operations performed during the experiments will be discussed based on the recorded data relating to all the materials used (type/preparation/amount), the building process (construction/drying/repairs) and use of the reconstructed structures. Likewise, information relative to the operational sequences will be provided, concerning labor (individuals/sex/age) and the physical effort entailed. This work was supported by a grant of the Romanian Ministry of Education and Research, CNCS - UEFISCDI, project number PN-III-P4-ID-PCE-2020-2369, within PNCDI III.

# Burnt Tomb Objects: An Analysis of the Burning of Ancient Egyptian Objects from the Early Dynastic Tomb of Neith-Hotep

Conor Lawlor

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An archaeology undergraduate that has just finished my third year. My interests in Ancient Egypt and scientific analysis led me to focus my dissertation on what I'll present to you.

Keywords: Egypt, Fire, Experimental

## Abstract

Several objects were discovered to have been burnt in the Ancient Egyptian Early-Dynastic tomb of Neith-Hotep. This has been the topic of my undergraduate dissertation. The burning of these items has been analysed by first recreating this burning on many different pieces of slate at varying temperatures. Scientific tests were then conducted on this slate first, and later the burnt artefacts themselves. This was to determine the temperature that these artefacts reached while ablaze, the location of them in the tomb, and when this burning took place. This presentation would cover the process of creating the slate samples, the performance of the experiments on these samples and the artefacts, and the results and conclusions deduced from these experiments.



# Experiments in late Iron Age Pellet Mould Technology

Jake Morley-Stone

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4th Year PhD researcher at the University of Liverpool. Specialising in the Archaeological Sciences with a focus on the analysis of metallurgical residues. I studied many facets of ancient cultures during my undergraduate degree, before curating my studies to lab-focussed analytical pursuits.



Keywords: Methodology, Pellet Moulds, Late Iron Age, Production, Metallurgy

## Abstract

Many factors of the pellet production process, pellet that are presumed to have been used for coinage, are still unknown to us. This paper is a follow-up from the paper I presented at the previous EXARC conference, titled 'Experimental Investigations into Late Iron Age Pellet Mould Technology and the Deposition of Metallic Residues'. These previous experiments tested several factors of the pellet production process under lab conditions. Since then, I have conducted several experiments out at our experimental archaeology site testing a working method of production using equipment contemporary to the Late Iron Age period. The primary purpose of these experiments was to gauge the ease of the technological processes, the duration of a production and the scale of operations that could be achieved. In this paper I will present some of the methodological considerations I have made, the data from the experiments, and how these experiences and data are now informing my interpretations of the archaeological record.

# Recreating Reflections: Mirror Production in Ancient Egypt

Elizabeth Thomas

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I obtained my BA in Archaeology and Egyptology in 2018 from the University of Liverpool, then MSc in Archaeology from same university in 2020. I applied and was successful in obtaining PhD funding from the NWCDTP AHRC, to research the metallurgy of Ancient Egyptian mirrors. I am now in my second year.



Keywords: Artefact Analysis, Copper Alloys; Colour, Reflections

## Abstract

How were mirrors manufactured and what kind of reflection did the metal produce? What colour and how clear were the images? Essentially, how did the Ancient Egyptian elite see themselves? The combination of metallurgical analysis and experimental work presented here aims to shed light on some of these questions.

With the use of a novel minimally destructive sampling method called flat edge abrasion, analysis of mirrors from a range of UK museum collections using SEM-EDX has revealed the chemical composition and microstructure of the metal. The mirrors' provenance spans from the Old Kingdom through to the Late Period, allowing the manufacturing techniques used to produce them to be characterised and then tracked over time, showing when various developments occurred. Additionally, different surface treatments have been identified which will have varying effects on the type of reflection created, ranging from a coppery through to a silvery appearance. Ongoing experimental work based on these analyses aims to re-create the manufacturing sequence alongside the visual characteristics of the mirrors which will aid our understanding of how they originally functioned.

# Living Prehistory and Experiential Education: How Effective Are Experimental Archaeological Techniques at Communicating Information For Children Aged 16 and Under?

Ryan Gilkes

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Ryan Gilkes is a third-year BSc (Hons) archaeology student with Truro and Penwith college in partnership with the University of Plymouth. During the past year he has been running experimental archaeology cooking sessions with an outdoor education organisation.



Keywords: Outreach; Experiential Education; Living Prehistory; Experimental Cooking

## Abstract

Since the axing of GCSE Archaeology in 2004 and A-Level Archaeology in 2016, there has not been an avenue for pre-degree level education of archaeology within the UK's state school system. Archaeology and prehistory education has since been relegated to public engagement, community groups and Young Archaeologist Clubs (YACs). Experiential and outdoor education in Denmark has displayed the success of communicating insights into ecology through culinary preparation. This small-scale qualitative study seeks to assess the effectiveness of experientially educating archaeology to an audience of under-16s through experimental archaeology cooking techniques.

# Learning by making ancient Greek pottery: an experimental investigation on the productive process

Francesca Tomei

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I am a PhD candidate in Archaeology at the University of Liverpool and my research looks at pottery production in the Classical-Hellenistic Greek rural taskscape. I have participated in archaeological projects (commercial and research) in Italy, Greece and Turkey and I am currently working on an experimental archaeology project with Juan Ignacio Jimenez Rivero, independent pottery specialised in ancient pottery. I am strongly interested in crafts technology and agriculture in the Classical world.



Keywords: Greek pottery; productive process; practice; experience; making

## Abstract

This experimental project aims to investigate the productive process of Late Classical-Early Hellenistic Greek pottery from the selection of raw materials, clay processing, wheel-throwing, to kiln building and firing. The research is based on the archaeological evidence from the rural site of Sant'Angelo Vecchio in the chora of Metaponto in Southern Italy, and the replica of the vessels, mainly household plain and decorated wares, are made according to the archaeological drawings. The kiln plan is designed based on the average dimensions and technology of archaeologically excavated Greek kilns and the building process (eg., the adobe bricks making, the orientation of the stoking channel) along with the load and the firing technique are based on the ethnographic evidence of traditional potters from the Mediterranean area. Through the experiment, we understood the importance of the practice in the production process, from the selection of the raw materials to the wheel-throwing and kiln building, and in facing the challenges, such as Manchester climate constraints or the lack of archaeological documentation

# Istori A Priweyth Kernowek: Exploring early Bronze Age Trevisker Ware from Cornwall

Laura Miucci

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Laura Miucci is a trained field archaeologist, experimental archaeologist, potter, and researcher.

She graduated from the University of Kent with a BA in French and History, with a minor in Classics & Archaeology, before undertaking the MSc course in Experimental Archaeology and Material Culture, from University College Dublin, where she graduated with a 1:1 in December 2021.

She adores all things ceramics, and when not in the physical field, is currently furthering her experimental work on Bronze Age ceramics of Cornwall, as well as working with EXARC.



**Keywords:** Trevisker Ware; Ceramics; Craftsmanship; Cornwall; Bronze Age

## Abstract

This multi-disciplinary project explores early Bronze Age Cornwall, with particular reference to its ceramics. While Beakers and Food Vessels are used for comparative studies, the study focuses predominantly on Trevisker Ware: a regional pottery-type. In order to understand these ceramics in a more holistic manner, experiential and experimental archaeological methods are employed; the knowledge acquired by these methods contributes towards discussions of material culture in early Bronze Age Cornwall, as well as the materiality, and distribution patterns of early Bronze Age Trevisker Ware. Some of the experiences gained and the experiments undertaken in this project originally comprised the principal part of a Masters of Science dissertation, in which the author sought to further contextualise Trevisker Ware in the milieu of early Bronze Age Cornwall. By using experiential and experimental archaeology, the author aims to give a more expository object biography of Trevisker Ware. The results support the suggestion that early Bronze Age Trevisker Ware seemed to have been intrinsically linked with “Cornish” early Bronze Age identity.

# The Nature of the Yeast: Bake like an Egyptian

Iris Hoogeweij

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I was born in Zoetermeer in the Netherlands and first studied in Leiden, where I completed a BA in History, with Russian Studies as a minor subject (2016), and an MA in Ancient History (2018). I moved to Germany in 2019 and am currently doing a BA in Classical Archaeology and Egyptology at the University of Trier, while taking part in the excavations of the Rheinische Landesmuseum Trier.



Keywords: Ancient Egypt, New Kingdom, Bread, Yeast, Experimental baking

## Abstract

Bread was one of the most fundamental foodstuffs of the ancient Egyptians. But how did they bake it? There is an abundance of iconographic, literary, and archaeological sources on ancient Egyptian bread, such as small wooden models of bakeries, mummified bread, and “graphic novels” of millers and bakers in tombs. However, we still know very little of the actual baking process itself. Crucial questions, such as the origins of the yeast or the duration of the proofing, are still unsolved. Dough from ancient Egyptian emmer wheat does not proof as well as common wheat, and thus there have been claims that it could not be used in certain types of bread moulds. If the dough does not rise, an extended rising period is obviously not required, hence rendering the bread mould usage obsolete. Since previous experiments utilized store bought modern yeast, the aim of my experiment was to create a natural yeast starter in the way an ancient Egyptian could have done, use that to ferment the emmer wheat dough, and bake a bread loaf. In this process, I was supported by one of Germany’s best 500 master bakers, and the results were both a surprise and a success!

# The bread of life: an experimental approach to tannūr ovens, bread making and cooking in the Phoenician- Punic settlements of the Iberian Peninsula

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Penélope is a graduate student of Archaeology at the University of Seville, she is writing her MA dissertation on Experimental Archaeology as a member of the Ergasteria Project, and participates as a research fellow in an experimental project on taphonomic processes and cooking evidences conducted by the CSIC.

Carmen is a graduate student of Archaeology at the University, she is a collaborator of the Ergasteria Project and an intern at the CSIC, where she partakes in a project on geophysics. She is now writing her MA dissertation on Mediterranean coastal sanctuaries.



**Keywords:** Phoenician-Punic diet, Mediterranean diet, bread oven, tannūr ovens

## Abstract

The basis of the Phoenician-Punic diet were cereals, especially consumed as bread baked in tannūr ovens. For that reason, this research project presents the initial results of an experiment regarding the correct fabrication process, maintenance, and use of these structures. Archaeological evidence has allowed archaeologists to acquire a basic understanding of tannūr ovens, but a deeper insight requires resorting to Experimental Archaeology and Ethnographic studies. Therefore, this research project presents three experiments concerning different technical and functional aspects: how these ovens were built -use of local raw material, time management, fixed vs portable structures-; the cooking process -fuel and temperature management, food placement and cookware-; and maintenance requirements -daily care, ash deposits, detachment of inside coating, cleaning of food residues-. Consequently, meaningful data on time management and food processing patterns has been obtained. This is the first experiment of its kind conducted in the Iberian Peninsula. Therefore, it aims to overcome the traditional perspective that focuses archaeological research on the record left behind by the privileged elite. In contrast, this new line of research, on the rise in recent years, allows us to delve into issues related to the daily life of the Phoenician Punic communities in the Iberian Peninsula

# Reconstruction of Roman Bread ovens from Doncaster Roman Fort

Yvette Marks

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I have been a member of the Sheffield Archaeomaterials Research Group in the Department of Archaeology at the University of Sheffield since 2011 and during which I have lead and participated in a number of experimental archaeological reconstructions and experiments, from smelting iron and copper, to building and firing pottery kilns and baking bread. I am currently the Lab Manager and Teaching Technician for Archaeological Science for the Department of Archaeology at the University of Sheffield and I am completing my PhD as a staff candidate. I was the coordinator for the Experimental modules in my department from 2019-2021.



Keywords: experimental archaeology, bread, ovens, pyrotechnology, Roman Britain

## Abstract

During the spring semester of 2021, amidst a pandemic and navigating between online remote teaching and limited in person, socially distanced teaching, the experimental module at Sheffield joined in on the lockdown bread baking trend and took it to the next level. The practical sessions for the module, tested out theories of the reconstruction of the famous 'Panis Quadratus' loaf found carbonised at Herculaneum, with students tested different methods of forming, shaping and baking the bread, in their kitchens at home during lockdown. Then when face to face teaching resumed, the class took to the field to test two different proposed methods, for reconstructing the archaeological remains of a bread oven, from the Roman fort at Doncaster (dating to 79 AD). This paper presents the results of these experimental reconstructions.