

PGRAS
MMXVI

**POST-GRADUATE
RESEARCH ARCHAEOLOGY
SYMPOSIUM 2016**

19th - 20th May 2016

UNIVERSITY OF
Southampton

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The PGRAS 2016 Committee would like to thank very warmly Dr Andrew Jones, our PGR Representative; Dr Stephanie Moser, head of the Archaeology department, and our keynote speaker; Miss Stephanie Evelyn-Wright, who designed our logo this year; the 2015 Committee; and all our chairs and volunteers for your invaluable help. Many thanks for all your contributions!

The PGRAS 2016 Committee:

Eveline Kiki Kuijjer

Samantha Field

Christianne Fernée

Emilia Mataix Ferrándiz

Caroline Armstrong

Núria Garcia Casacuberta

VENUES

Presentations: Avenue Campus, building 65, Lecture Theatre B

(behind the Cafeteria)

Wine reception: Building 65A, Atrium

Cake sale, book sale, charity donations, photo contest:

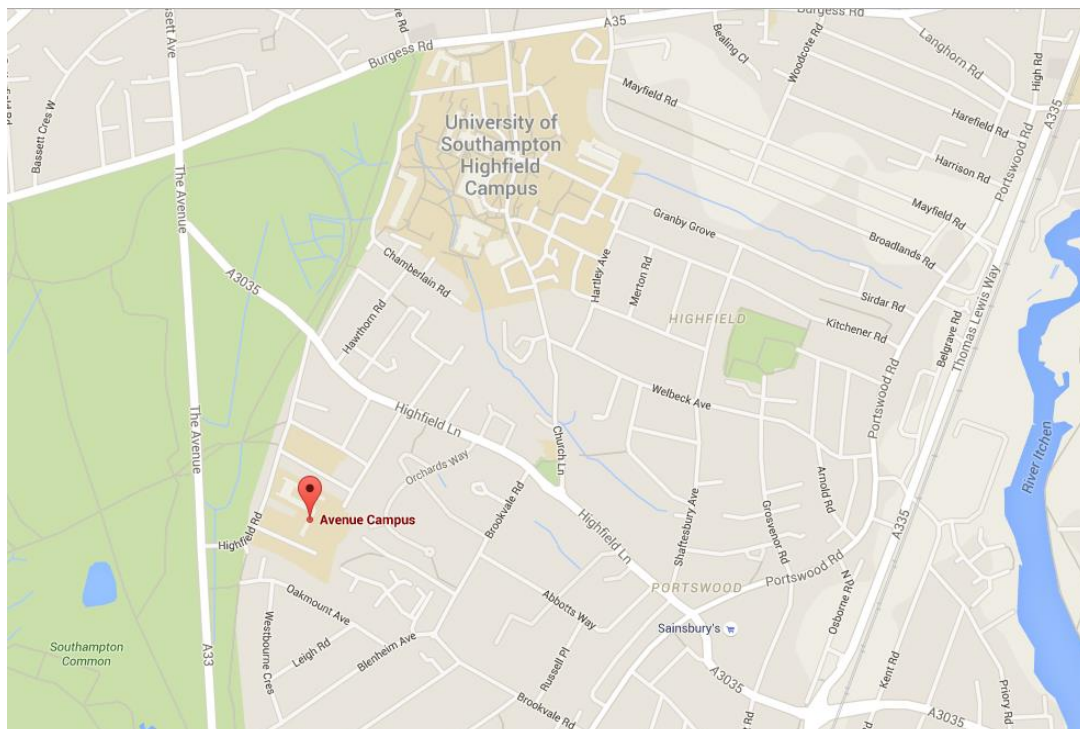
corridor in front of Lecture Theatre B

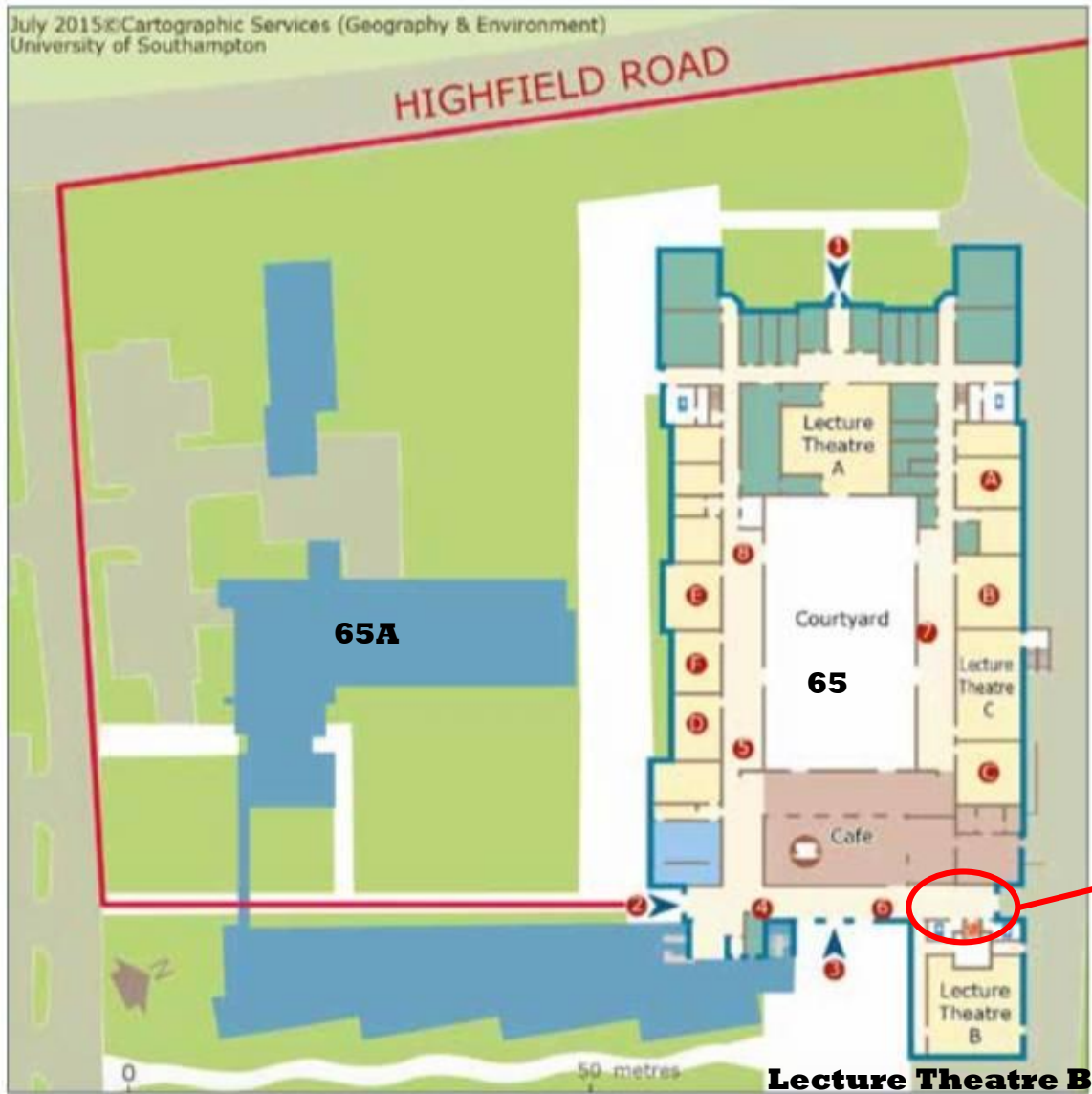
All the benefits of the cake and book sale are destined for charity. The charity chosen this year is **Smile, Support & Care**, which provides much needed support to families with disabled children and young adults across Hampshire and West Sussex. For more information, please visit their website: www.smilesupport.org.uk.

Getting there:

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Avenue Campus
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Directions:

BUS: Avenue Campus is two miles from Southampton Central. Unilink bus: U2B

CAR: Southampton is 75 miles (120km) from London. The M3 and M27 provide fast, direct access to the city.

From the M3: Exit at junction 14 (Southampton A33).

From the M27: Exit at junction 5 (Southampton Airport).

Postcode for satnav: SO17 1BF

Visitor parking: The closest Pay and Display parking is at Highfield Campus, accessed from University Road, a short walk from Avenue Campus.

TIMETABLE

Thursday the 19th of May, 2016 (LT B)

Introduction		
09:30 – 09:40	Dr Andrew Jones	Opening Address
Session 1		
Chair: Dr Andrew Jones		Make your move!
09:40 – 09:55	SHAIKH, Zeeshan A.	ANCIENT NAVIGATION IN THE ERYTHRAEAN SEA: A General overview
09:55 – 10:10	POTTS, Dave	Network Analysis of Roman Transport Routes in the Roman Mediterranean
10:10 – 10:25	TSAKANIKOU, Peny	“Turned the Sea into Dry Land”: an alternative reading of the Lower Palaeolithic archaeological data from the Aegean region and the implications for hominin movement and occupation history
10:25 – 10:35	Discussion	
10:35 – 10:50	Break	
Session 2		
Chair: Kiki Kuijjer		Material talks for a material world
10:50 – 11:05	BASONBOL, Abdullah	A Comparative Study of South Arabian Pottery before Islam (500 B.C. – 600 A.D.)
11:05 – 11:20	HOGGARD, Christian	A Jack of all blades? Exploring Neanderthal technological variability through “morpho-potentials” and a techno-functional perspective
11:20 – 11:35	CHITTOCK, Helen	Pattern and Purpose in Iron Age East Yorkshire: The Itineraries of Plain and Decorated Objects
11:35 – 11:50	DILLEY, James	A well-made spear is worth three
11:50 – 12:05	OSINGA, Elizabeth	Ceramic challenges in the countryside of Northeast Jordan
12:05 – 12:15	Discussion	
12:15 – 13:15	Lunch break	
Session 3		
Chair: Kate Rogers		Environments for dialogues
13:15 – 13:30	CASCINO, Roberta	Settlements of the ager Veientanus. Preliminary data on South Etruria Survey
13:30 – 13:45	HOLGUIN, Leah	Hydrosocial Dynamics of the Mongolian Gobi
13:45 – 14:00	DHOOP, Thomas	Thirthing Storms and Medieval History: Correlating historical sources with environmental proxy records using micro-XRF studies of sediment cores
14:00 – 14:15	PEDROTTI, Felix	The nature of the Po River: The geological and anthropogenic life of a delta
14:15 – 14:25	Discussion	
14:25 – 14:40	Break	

Session 4	Chair: Sammy Field	Tell us a story, Jackanory
14:40 – 14:55	ROGERS, Kate	Shooting Archaeologists
14:55 – 15:10	TYLER-JONES, Matthew	The Apotheosis Moment
15:10 – 15:25	DIXON, Charlotte	Miniaturising boats: the value of models
15:25 – 15:40	BRUGGER, Peter	The Problem of the Pot
15:40 – 15:50	Discussion	
15:50 – 16:00	Break	
Closing night		
16:00 – 17:00	Prof Stephanie Moser	Keynote Address
17:00 – 19:00	Wine reception – B65A, Atrium	

Friday, 20th of May, 2016 (LT B)

Session 1	Chair: Christianne Fernée	To be or not to be: that is the question
09:30 – 09:45	EVELYN-WRIGHT, Stephanie	Studying Impairment and Disability in 1st-4th century AD burial contexts – my progress so far
09:45 – 10:00	FIELD, Samantha	The First Step in Reassessing the use of Dental Wear for Determining Age at Death
10:00 – 10:15	ARMSTRONG, Caroline	Long-Term History of Barton-Upon-Humber.
10:15 – 10:30	FLORES MUNOZ, Julieta	Overcoming singularity of the Nahuas in Veracruz: exploring the space
10:30 – 10:45	STARK, Sarah	'I Won't Grow Up': Early Childhood at medieval Wharram Percy
10:45 – 10:55	<i>Discussion</i>	
10:55 – 11:10	<i>Break</i>	
Session 2	Chair: Núria García C.	Re-building the conceptual scene
11:10 – 11:25	MAILLEUR, Stéphanie	Roman ports' architecture studies from the perspective of the iconographic evidence
11:25 – 11:40	BYE-JENSEN, Peter	Taking a closer look
11:40 – 11:55	CRAWFORD, Katherine	Religious Activity within the Cityscape of Ostia
11:55 – 12:10	HUSSEY, Adam	"Architectural Experience" in Holcombe Villa.
12:10 – 12:20	<i>Discussion</i>	
12:20 – 13:20	<i>Lunch break</i>	

Session 3	Chair: Dr Andrew Jones	Illustrations of yesterday
13:20 – 13:35	ROWE, Trevor	Augmented Reality in Archaeology As A Tool For Interpretation
13:35 – 13:50	FERNÉE, Christianne	Like Pulling Teeth: Using microCT to understand the causes of changes in tooth size and morphology in Britain
13:50 – 14:00	<i>Discussion</i>	
14:00– 14:30	<i>Break</i>	
Session 4	Chair: Caroline Armstrong	Theories of everything
14:30 – 14:45	CUTHBERTSON, Cory	Interpreting Palaeolithic Cognitive and Linguistic Ability from Lithic Variability
14:45 – 15:00	GARCIA CASACUBERTA, Núria	Choice for case study 1: the Alexandrian emporion
15:00 – 15:15	EVANS, Merlin	The Dominant beast: Animality and Human Origins
15:15 – 15:30	MATAIX FERRANDIZ, Emilia	In search of lost trade. <i>Scripta commercii</i> , Roman law, and Mediterranean ports
15:30 – 15:40	<i>Discussion</i>	
15:40 – 15:55	<i>Break</i>	
Session 5	Chair: Emilia Mataix F.	A sea of memory
15:55 – 16:10	MURRAY, Micheal	Underwater Laser Scanning in Maritime Archaeology; Phase I and II Case Study Results
16:10 – 16:25	GARRANDES, Carlos	Renegotiating human-sea relationships
16:25 – 16:40	KUIJER, Kiki	Exploitation of prevailing winds and currents by the earliest known seafarers, reaching and colonising Australasia c. 50,000 years ago
16:40 – 16:55	EL SAFADI, Crystal	An Alternative Representation of the Maritime Space-Time of the Levantine Basin
16:55 – 17:10	MAHAL, Ammandeep	England and the Atlantic World: Planters, Colonies, Ships and 17 th Century Expansion
17:10 – 17:20	<i>Discussion</i>	
Conclusion		
17:20 – 18:00	<i>Awards, conclusion</i>	
	<i>To the pub!</i>	

ABSTRACTS

(In the order of the presentations)

Thursday sessions:

1. Make your move!

SHAIKH, Zeeshan A.

Ancient navigation in the Erythraean Sea: A General overview

Archaeological findings from sites along the Egyptian Red Sea coast, such as Myos Hormos and Berenike, have shown that there was a well-established ongoing trade and navigation activities in the Erythraean Sea during Roman times. The impact of these navigation activities can be seen as far as East Africa and Southern India. Much has been written regarding their trading relationships, the commodities they traded and the trade routes they used but hardly anything is known about the actual voyages they undertook. What navigation methods and skills they used to undertake such voyages, especially in the absence of the most basic technology such as modern compass and Geographic Positioning System that was very much responsible for this early form of globalisation?

The research conundrum of this study is to address the very core activity of this established trade network by asking how ancient seafarers of the Erythraean Sea navigated. What were the different techniques, methods and skills ancient mariners used to navigate across the sea in order to carry out a trade? By using various ancient and modern sources from archaeological, historical, meteorological, natural and environmental and through multidisciplinary approach this study argues that the ancient sailors of the Erythraean Sea were competent navigators with remarkable experiential navigational skills that allowed them to cross the vast sea in the absence of modern technology. Along with providing a general overview of the thesis this presentation will specifically focus on the wind as one of the cue for ancient navigation and planning in the Erythraean Sea.

POTTS, Dave*Network Analysis of Roman Transport Routes in the Roman Mediterranean*

This project examines the application of GIS and network models to examine possible trading networks in Mediterranean using Roman port locations and seasonal data as a model.

In this paper I will outline my methods and initial results and illustrate the various aspects of my investigation by focusing on two of my case studies.

I will present my findings and place them in the context of my larger research question.

TSAKANIKOU, Peny*“Turned the Sea into Dry Land”: an alternative reading of the Lower Palaeolithic archaeological data from the Aegean region and the implications for hominin movement and occupation history*

The wider Aegean region holds a special place in the history of human movements due to its geographical positioning on a crossroad linking Europe, Africa and Asia. Unfortunately, the Lower Palaeolithic narrative for this specific region of the world has been surprisingly poor. There is a conspicuous gap in the archaeological record for the Lower and early Middle Pleistocene. The archaeological evidence is rare and fragmented, and often poorly dated with no secure chronostratigraphic context. This biased framework mainly reflects the active geomorphological processes that have been consistently transforming the Aegean landscape. The main focus of this research is to provide a better understanding of Lower Palaeolithic hominin movement and occupation patterns within this specific region and, consequently, within the changing landscape during the Early and early Middle Pleistocene. The ‘Aegean dry land’ hypothesis is the starting point in this quest. Recent paleolandscape reconstructions suggest that the largest part of, what is now the Aegean basin, was a terrestrial landscape prior to 500 Ka, and during glacials and interglacials until at least MIS 8. The archaeological implications of this hypothesis are thoroughly explored here in combination with paleoenvironmental, paleotectonic, paleogeographical and archaeological data from the area under study. Due to the problems inherent to resolution and accuracy in these models, and our reliance upon fragmented archaeological data of this region, this is

methodologically challenging, however I will explore the ‘complex topography’ concept, in combination with the GIS analysis, to suggest an alternative reading of the current evidence from the Aegean.

2. Material talks for a material world

BASONBOL, Abdullah

A Comparative Study of South Arabian Pottery before Islam (500 B.C. – 600 A.D.)

Pottery is one of the most numerous and durable archaeological artifacts collected during surveys and excavations, and it can provide significant evidence about human activities. Ceramics are likewise the most abundant archaeological materials at the site of Al-Ukhdu, which is located in the region of Najran in the south of Saudi Arabia along the border with Yemen, but no detailed modern study of material from this area currently exists. My research is concentrated on the pottery from the pre-Islamic period, in particular material discovered during the seven seasons of survey and excavation undertaken by Saudi Commission for Tourism and National Heritage, Antiquities and Museums Sector.

The aim of my study is to apply quantified ceramic data to social and economic questions concerning the occupants of pre-Islamic Al-Ukhdu. Specifically, how do assemblages from within and outside the town’s walled enclosure compare, and what might this indicate in terms of social activities and relationships, and urbanization? How was Al-Ukhdu connected in terms of traded pottery and resources for its manufacture? What does assemblage characterization and use alteration tell us about the interaction between people and pottery at this time? By these means we will hope to clarify the social and economic background of the society of pre-Islamic Al-Ukhdu.

HOGGARD, Christian

A Jack of all blades? Exploring Neanderthal technological variability through “morpho-potentials” and a techno-functional perspective

It is now generally recognised that, throughout the Middle Palaeolithic of Eurasia, Neanderthals were proficient in producing a variety of lithic artefacts, with varying (but most often predetermined) shapes, sizes, and form (i.e. size plus shape). The different morphological characteristics which these Neanderthal artefacts possess can be interpreted as desirable for specific activities given the suitability of its form e.g. the nature and shape of the cutting-edge and the degree of blank standardisation. Through this pseudo-Binfordian lens artefacts could be understood through their “morpho-potentials” (Terradillos-Bernal and Rodríguez-Álvarez, 2012), and working hypotheses, through an analysis of these artefact’s shape and form, can be constructed.

This presentation provides initial results into a morpho-potential analysis of the two types of technological blade strategies (i.e. stereotyped elongated products) seen throughout the Middle Palaeolithic: Levallois and Laminar blade production. These two strategies appear on an inter-/intra- context scale both concurrently throughout the Middle Palaeolithic, and in isolation of one another, from c.300,000-71,000 BP. Do these strategies therefore represent equifinal behaviour i.e. products achieving the same “means to an end”, or do they represent artefacts for specific behaviours and activities? Through univariate and multivariate (PCA, DFA, MANOVA) statistical analyses of traditional/lineal and geometric morphometric data initial results suggest that each technique features advantages over the other in their cutting-edge and form.

The future direction of how to analyse properties of lithic shape and form (e.g. Multiple Factorial Analysis of fourier-based outlines) are then finally discussed.

Terradillos-Bernal, M. and Rodríguez-Álvarez, X-P. (2012). “The Lower Palaeolithic on the northern plateau of the Iberian Peninsula (sierra de Atapuerca, Ambrona and La Maya I): a technological analysis of the cutting edge and weight of artefacts. Developing an hypothetical model”, *Journal of Archaeological Science* 39: 1467-1479.

CHITTOCK, Helen

Pattern and Purpose in Iron Age East Yorkshire: The Itineraries of Plain and Decorated Objects

Iron Age East Yorkshire is famous for its iconic Celtic Art objects. Weapons, chariot fittings and personal ornament, some intricately decorated with swirling La Tène style patterns, have been found in the region and its bordering counties, often as part of the unusual 'Arras culture' burial rite. The functions of most of these objects seem fairly straightforward, but what was the purpose of the decoration itself?

This paper invokes a phrase used by Cyril Fox in the title of his 1958 publication on Celtic Art; 'Pattern and Purpose', to think through this question. It will summarise the conclusion of a PhD project aimed at pursuing the reintegration of metalwork from Iron Age East Yorkshire with the wider archaeological record, in order to answer questions about the functions of decorated objects. A holistic study on the decoration (and plainness) of all types of objects from a sample of 30 sites has been used to produce statistics on exactly how many objects are patterned and on the relationship between pattern and purpose.

New data on the biographies, or itineraries, of selected objects will be used to explore this relationship in detail through examining the multiple, changing and intertwining functions of patterned and plain objects at different stages in their use-lives. The paper will conclude by offering an answer to the question: what did pattern do?

DILLEY, James

A well-made spear is worth three

The production of projectiles during the Aurignacian in Western Europe (40,000-35,000 BP) has received limited attention from an experimental perspective. No further beyond determining the production techniques of the antler points themselves and possible hafting systems. The use of osseous materials for projectile tips has been the subject of some research, but with no real attempt to build upon some of the concluding thoughts that

arose from using antler or bone over stone. The value of some of the raw materials used to manufacture complete projectiles has never truly been considered when referring to the Aurignacian. Such factors would have played a major role in seasonal hunting strategies if certain materials were unavailable during hunting movements. This research will aim to determine whether the focus of producing Aurignacian projectiles was strongly bias towards the longevity of all the parts that made them composite implements (e.g. osseous tip, wooden shaft, tar/resin mastic and organic binding), or towards the overall effectiveness of the completed tool. Usable wood for spear shafts would have likely been a very sparse luxury in NW Europe during MIS 3. It is quite possible shafts would have had to have been manufactured further to the south before use in hunting activities to the north. A further aim of this research will be to test replica composite Aurignacian spears using different material variables. This will demonstrate some of the advantages of using materials such as antler for spear tips. Observations will be taken during production using authentic tools, materials and methods. The flight and ballistic capabilities of the spears will also be tested. This will show whether osseous tipped spears required extra propulsion leverage such as from a spear thrower or ankyle.

OSINGA, Elizabeth

Ceramic challenges in the countryside of Northeast Jordan

My research is focused primarily on the large countryside town of Umm el-Jimal, located on the basaltic plateau in Northeast Jordan. The site was settled from around the mid-1st through the 8th century AD, and was a site of later activity in the Middle Islamic (c. 12th century) to the modern period. Excavations at a large domestic complex at the site yielded my primary stratigraphic and ceramic data.

At the previous two symposiums, I discussed my approach to the ceramics, summarised the stratigraphy from the three seasons of excavation and discussed my plans for a small regional survey of selected sites on the basaltic plateau. At this symposium, I will present two data sets: first, my quantification of the pottery from the 2014 excavations at Umm el-Jimal, with a discussion of the challenges of and responses to disturbed contexts; second,

the results of the regional survey, which presents the first detailed look at the changes in ceramic wares/fabrics over the time in the countryside of Northeast Jordan.

3. Environments for dialogues

CASCINO, Roberta

Settlements of the ager Veientanus. Preliminary data on South Etruria Survey

My research aims to answer questions about the nature of trade and commerce in the hinterland of Rome using the archaeological material. I have chosen to deal with the strip of land that extends between the Tyrrhenian coast and Rome. This area corresponds to the ancient Ager Veientanus (the territory dominated by Etruscan Veii). Regarding the chronology, I will focus my study on the period between the 7th c. BC and the 3rd c. BC. The amount of the archaeological material useful for my topic will be essentially pottery from various archaeological survey contexts, either published or unpublished.

With regard to the latter, my study are based on the pottery collected during the South Etruria Survey by John Ward-Perkins between the 1950s and 1970s, and stored at the British School at Rome. This survey covered a large part of the Rome's hinterland and collected a huge quantity of varied archeological material dating from prehistory to the early modern period.

I will present some preliminary data coming out from the study of settlements identified during the Ward-Perkins Survey.

HOLGUIN, Leah

Hydrosocial Dynamics of the Mongolian Gobi

Archaeology views social progression as a linear trajectory, where hunting and gathering and nomadic pastoralism are stepping-stones to sedentary lifestyles and agriculture. The Mongolian Neolithic contradicts this dominant narrative, especially in the South Gobi Desert where there is evidence of sedentary communities that utilized pottery, mortars, and

pestles. At some point during the Bronze Age, nomadic pastoralism was adopted as the dominant subsistence strategy and these sedentary communities were abandoned. This unexpected shift in subsistence strategy may have been related to profound environmental changes occurring at this time, and further examining this may help us to understand how human societies adapt to changing levels of uncertainty about resource availability. This presentation examines the hydrosocial landscape of the Ulaan Nuur paleo hydrological system in the Mongolian Gobi Desert, and explores how it compares to patterns observed around other hydrosocial landscapes of paleo hydrological systems across Mongolia.

DHOOP, Thomas

Thirthing Storms and Medieval History: Correlating historical sources with environmental proxy records using micro-XRF studies of sediment cores

It is a procedure archaeologists are particularly familiar with; two separate datasets are brought together with the expectation that through their synthesis a more comprehensive historical narrative will be produced. Yet, this does not always work out. Different spatial and temporal resolutions can throw a spanner in the works, causing datasets to not line up, or worse, they might appear to be contradicting one another. This paper will argue that this is not necessarily problematic. By ‘thirthing’ the problem and working in the space between the two datasets – in other words through practice – new insights can still be produced, perhaps eventually leading to synthesis, or perhaps not.

This idea will be demonstrated by attempting to correlate a high-resolution dataset, historical sources describing storms, with a low-resolution but long-term dataset, an environmental proxy record for storminess. The concept is explored in medieval Winchelsea (East Sussex, UK) where written sources describing storm events – in 1230, 1250 and 1288 – are correlated with the GISP 2 Greenland ice core record of NA^+ (sodium) concentrations between AD 1000 and 2000, an established proxy for storminess. This is done by subjecting a rhythmite sequence in a sediment sample, extracted from the ancient Winchelsea waterfront, to micro-XRF analysis using the ITRAX core scanner. The resulting geochemical proxy data is evaluated for indications of environmental change and in the process becomes

an instrument to think about the effects of dynamisms in storminess on coastal communities, but also (maritime) technologies, connectivity and attitudes towards the sea.

PEDROTTI, Felix

The nature of the Po River: The geological and anthropogenic life of a delta

The delta of the Po River represents a significant centre of Italian seafaring and cultural development. It is characterised by a complex maritime landscape, where human interaction, historical events and environmental changes were firmly interrelated. Hence the evolution of this delta plays a decisive part in broader historical and social developments. This presentation will trace the evolution of the Po delta and outline its development from a natural to anthropogenically controlled space.

The formation of the Po plain can be traced back to the late Neogene, when it was entirely submerged and open to the Adriatic Sea. Throughout the following Millennia the plain witnessed countless fluctuations in sea level, a trend further complicated by sedimentation processes, forming an 8000-Metre-thick deposit sequence. With relative stabilisation of sea-level change over the last 4000 years the Po and its deltas prograded out into the Adriatic. During this period its fluvial network bore witness to dynamic sedimentation processes and anthropogenic activity, dramatically altering the deltas behaviour and affordances to mariners.

The extent and nature of these developments means that if we wish to understand historical processes within the Po plain, first we need to reconstruct the theatre within which it took place.

4. Tell us a story, Jackanory

ROGERS, Kate

Shooting Archaeologists

Who calls the shots in archaeology documentaries – and why?

Archaeology documentaries have long been established as one of the main ways archaeology's publics access the material past. Archaeology documentaries pull millions of viewers, promote archaeological values and epistemologies, fund archaeological research, and act as recruiting mechanisms for the next generation of archaeologists. And yet despite thousands of diverse productions made over the past century, archaeology documentaries remain largely neglected by archaeological scholarship. This thesis investigates this paradox.

This study aims to characterise and problematize UK archaeology's relationship with UK documentary filmmaking. Uniquely this relationship is considered from the angle of film production as seen from an archaeological perspective.

Currently there remains in archaeology a striking lack of awareness of the long history and mutual influence that the discipline shares with documentary. Also there is an absence of systematically collected evidence detailing and critically examining archaeologists' roles in and attitudes towards archaeology documentaries. To fill this gap, I will generate and analyse three original datasets including: an online survey; a participant-observation case study; and an interview series – all exploring different aspects of this relationship. This new evidence will be contextualised historically and theoretically in order to locate UK archaeology's place within the media, and documentary's place within UK archaeology.

Ultimately by going behind the scenes of archaeology documentary productions, this thesis aims to put archaeologists' stories, values, concerns and hopes for archaeology documentaries "on the record".

TYLER-JONES, Matthew

The Apotheosis Moment

This presentation will survey the current state of digital heritage interpretation and especially the use location-aware technologies such as Bluetooth LE, NFC, or GPS. Most such systems deliver interpretation media to the device itself, over the air or via a prior app download. There is a danger that the screen of the device becomes a window that confines and limits the user's sensation of being in the place and among the objects that they have come to see. While this does enable the device to display interpretation that is both more relevant, and in some cases more personalised to the needs of the user, it also leads to a "narrative paradox". The more the media is tailored to the movements of the user around the site, the less coherent and engaging the narrative becomes. Story-games can show us how to create an experience that balances interactivity and engaging story, giving the user complete freedom of movement around the site while delivering the kernels of the narrative in an emotionally engaging order. Mobile digital technology has developed to a point where such an adaptive narrative is also possible in cultural heritage environments. However this presentation will show the real opportunity that digital technology now provides, to escape the confines of the device's screen. Instead, we can enable the environment itself to respond to the choices of the visitor, and deliver a truly personalised interpretation experience.

DIXON, Charlotte

Miniaturising boats: the value of models

Models of boats from different parts of the world are commonly found in ethnographic museum collections, yet they are considerably understudied and rarely displayed. This paper considers the potential of these intricately crafted objects as evidence for traditional boats and attempts to place them in their wider sociocultural contexts. By asking questions about their production and collection, as well as exploring physical attributes, this paper seeks to raise awareness of such objects and how they can be used in future studies of traditional boats to research boat types, construction techniques and cultural value.

Through the presentation of a particular group of models from Sri Lanka this paper will demonstrate how certain types of boats have been represented in model form more than others. In addition, the high level of detail found on models of outrigger canoes, or *oru*, will be discussed along with their representation in other iconographic forms, such as postcards. By focusing on *oru* the cultural value of these boats for local Sri Lankan communities will be considered, as well as their meaning and value for international collectors. In doing so, this paper uses a three tiered approach to reflect on the boats represented in model form; their connection with local cultures and model makers; and their significance for collectors and museums.

BRUGGER, Peter

The Problem of the Pot

This presentation shall consider the ability of 3D printed model replicas to prove complimentary in the interpretation of archaeological artefacts exhibited that are exhibited in a museum context.

For this we shall consider two questions: Would the museum replication of archaeology in order to allow for handling purposes prove an interpretive benefit? How can this interpretive addition be facilitated by 3D printed models?

With reference to recently collected original data, as well as contemporary case material, we shall see that these questions are not easily answered.

Friday sessions:

1. To be or not to be: that is the question

EVELYN-WRIGHT, Stephanie

Studying Impairment and Disability in 1st-4th century AD burial contexts – my progress so far

Academic discourse concerning disability in the past is a growing field, particularly in archaeology. An exceptionally rich, but in my opinion under-utilised, source of evidence comes from ancient burial contexts. Discussion of this material and disability is often split; Bioarchaeologists focus on the skeletal remains and pathologies evident, often using clinical data to infer suffering and helplessness. Mortuary archaeologists use the burial context as evidence of status and social attitudes towards the impaired person. Rarely are these two perspectives integrated. My aim is to develop a methodology that uses all aspects of the burial evidence available. An Osteobiography approach allows a skeleton to be studied in detail to gain some insight into an individual's life experiences. Markers such as osteoarthritic lesions, metabolic disease etc. can be compared across the broader population to see how typical an individual's experiences were. The overall perception gleaned from the skeletal remains can then be compared with that from mortuary archaeological data to see how representative the latter is of everyday experience. This can then offer discussion of an impairment's consequences on an individual's identity during that time. During this paper, I will present an update on the progress I have made so far, including some preliminary osteological results obtained from 3rd-4th century skeletal remains found at Alington Avenue in Dorset.

FIELD, Samantha

The First Step in Reassessing the use of Dental Wear for Determining Age at Death

In archaeological environments teeth are the most resistant part of the skeleton to degradation & decomposition. Throughout life, they experience continuous attritional wear and this rate of tooth wear offers potential for age assessment within a given population.

The most commonly method employed using dental wear for assessing adult ages in archaeological populations from Britain was produced by Brothwell (1963). This method was development using a poorly dated archaeological sample of unclear size and does not consider variation over time and dietary changes. However, alternative aging methods rely on preservation of fragile skeletal elements or are destructive, expensive or complex & time consuming to conduct. Therefore Brothwell's method of age estimation is still widely used in British skeletal studies.

The aim of this project is to explore how the Brothwell (1963) method of assessing age from occlusal tooth wear patterns can be refined, and improved upon, to increase reliability and precision. This presentation will discuss the first step of this process with the application of an ordinal scale and a qualitative measurement to a series of Anglo-Saxon specimens. It is thought that by making alterations and additions to the Brothwell scale the pattern of dental wear can be recorded more effectively, including observing wear patterns before dentine exposure is evident. The Mays et al. (1995) method for measuring tooth crown height will also be applied to the preliminary method as an attempt to quantify this wear.

ARMSTRONG, Caroline

Long-Term History of Barton-Upon-Humber

Barton-Upon-Humber lies on the southern bank of the Humber, in the north of Lincolnshire, England. Barton-Upon-Humber was, and still is, a small, quintessentially English town that went through gradual changes over the course of hundreds of years. Its population rose and fell at different points throughout history in connection to various changes in the social and political landscape.

A history of the town from the fifth century to the thirteenth century will be given. Due to its isolation and small size, there are few primary sources that directly address Barton-Upon-Humber. Thus, the narration will extrapolate from the many written sources from surrounding areas and the archaeological evidence from the town in order to posit how Barton-Upon-Humber was affected over the centuries by the incoming Anglo-Saxons, the formation of the kingdom of Lindsey, the introduction and spread of Christianity, the Viking invasions, and the eventual acceptance of English rule throughout England.

These are pivotal centuries in the formation of England, and the deeper understanding of towns such as Barton-Upon-Humber would be helpful in reconstructing the process whereby England came together under one ruler. To address the deficiency of written sources directly concerning Barton-Upon-Humber, future osteoarchaeological work will be suggested.

FLORES MUNOZ, Julieta

Overcoming singularity of the Nahuas in Veracruz: exploring the space

Space and its composition has been widely used but not fully explored within Mesoamerican Archaeological research. This has led to interpretations of the past that produce static historical discourses, and reinforce the idea of otherness, i.e. nationalisms. This research challenges the static historical discourse through the exploration of the way Nahuas in the Zongolica Mountain Range in Veracruz, Mexico, signify and re-signify their space. The Nahuas is a group highly implicated in the construction of Mexican national identity which evokes their movement in the prehispanic past. However, in Veracruz, the Nahuas have been dismissed from the historical discourse, and today they are subsumed under the persistent colonial practices. This presentation puts forth the result of four months of fieldwork in Mixtla de Altamirano, with a Nahua community located in the Zongolica Mountain Range.

STARK, Sarah

'I Won't Grow Up': Early Childhood at medieval Wharram Percy

Studies of juvenile development are limited by the prevailing methods used to analyze growth trajectories. This paper evaluates the interaction of size and shape of juvenile long bones and teases apart the process of growth and development. Growth is studied by size through linear measurements, while development is examined through shape by geometric morphometrics. This study assesses how geometric morphometrics can be applied to analyze and visualize growth trajectories in the long bones.

A dataset of femora (n=18), tibiae (n=18), and humeri (n=36) from 37 juveniles and adolescents ranging from infancy to twelve years old, was collected from medieval Wharram Percy. Three-dimensional models were created for each element by structured-light-scanning and linear measurements of length and metaphyseal width were recorded. Procrustes (GPA), was used to analyze 10 type I and II landmarks and 100 semi-landmarks.

Morphometric analysis revealed there is significant ($p=0.03$) difference between age groups for each element. Allometric growth of the humeri showed a steady increase until age 6 and then slowed growth until 12 years old. Interestingly, the femur and tibia showed opposite trajectories as these elements experienced stunted growth after weaning (ages 3-5) and then underwent accelerated growth from 6 to 12 years old. It's possible that the upper and lower limbs alternated periods of conservative growth as the children from Wharram Percy experienced poor health and environmental stress.

2. Re-building the conceptual scene

MAILLEUR, Stéphanie

Roman ports' architecture studies from the perspective of the iconographic evidence

Our knowledge of the architecture of Mediterranean ports under the Roman Empire relies mainly upon archaeology. However, the reality of most of buildings are still very unclear. Port iconography, quite abundant during the Imperial period and decorating various supports of art (coins, ceramics, mosaics, paintings etc.), can make an important contribution to the study of the architectural appearance of the main ports of the Mediterranean Sea. Indeed pictorial evidence are precious documents for our understanding of Roman ports as they can show us what no longer exists like the elevations of ports' buildings. The iconography is actually the only evidence of the tridimensionality of port's buildings because there usually remains only the foundation level of ports' structures. Nevertheless, the main issue of this work is related to the interpretation of the images. Indeed, it seems that artists make representations according to artistic conventions rather than recording reality. In order to go beyond the limitations of the pictorial evidence, we are developing a method of interpretation focusing on the language of imagery in ports' representation and the syntax of the different symbols characterising the port's landscape. Through this work, we are also analysing if the visual language corresponds to a standardisation and if a model exists (Portus? Alexandria?). Another important aspect of this work is to analyse as well the broadcast message and understand the connections between artistic forms and the ideological message (political and social meanings of Roman ports' representations?).

BYE-JENSEN, Peter

Taking a closer look

Causewayed enclosures are some of the most significant monuments in the Early Neolithic, with a distribution over most of Europe. A recent programme of radiocarbon dating has refined our understanding of the chronology of this important class of monuments in Britain (Whittle et. al. 2011), many sites having relatively restricted periods of use. However, the

precise character of the activities at these sites is still unclear: are they gathering places, mortuary sites, stock enclosures or defensive structures?

In this paper we will be taking a closer look on the phenomenon of monumentality at the micro scale.

My research focuses on use-wear analysis of the flint assemblages from the primary phases of a number of well excavated causewayed enclosures in southern Britain, as a way of identifying activities at these sites. The analyzed sites include: Etton, Staines, Windmill Hill, Hambledon Hill and Sarup (Denmark).

The reason for focusing on primary phases assemblages of the causewayed enclosures is due to these providing the best evidence for initial use of these sites. This project has produced results that will be partially revealed at the PGRAS conference 2016. This presentation will additionally explain the method utilized, the results, and prospects of further analysis.

This project is funded by the South West and Wales Doctoral Training Partnership (SWW DTP).

CRAWFORD, Katherine

Religious Activity within the Cityscape of Ostia

Religion was woven into the fabric of Roman daily activity, acting as an integral part of society. Despite its evident importance, its placement within the urban environment and how people interacted with religion on a daily basis remains less fully understood. Using Ostia, Rome's ancient port, as a case study, this paper considers the integration of religion by analysing the access and visibility of temples within the urban environment in terms of their location along processional routes. Despite an extensive number of studies pertaining to particular temples, there is currently no scholarship that considers Ostian religion upon the basis of temple placement and its relationship to the surrounding urban environment.

The applied methodology builds upon previous studies concerning urban construction, spatial studies, and movement within the city to explore how visibility and perception influenced the construction and placement of temples along processional routes used during religious festivals and processions. As processions were not static events, but constantly changing to adapt to different circumstances, temples provided an essential framework for the execution and display of religious rituals. Study of the spatial position of temples within Ostia provides insight towards the dynamic relationship that existed between religious spaces and the negotiation of ritual activities.

HUSSEY, Adam

“Architectural Experience” in Holcombe Villa

My research aims to understand how the Romano-British villa in Devon and Dorset functioned as a building by looking at it from an architectural, spatial and social perspective. I will take an integrated approach and assess all the aspects which make up the villa; building design, room and spatial layout, architectural and decorative adornment and archaeological evidence of activity. A specific focus of my work is on the decorative schemes used in these spaces; study tends to view these in a disjointed way but I wish to examine them (mosaics, painted wall plaster and architecture) as one body of evidence. Special attention will be paid to painted wall plaster which has currently received almost no analysis of any sort.

I will employ these indicators to suggest how people used and experienced these spaces, an idea known as “Architectural Experience”, how they moved through them and how they interacted within them. Through the concept of space – I will draw on architectural and social theories- I hope to understand how the villa operated as a place of living on a social level. I wish to highlight how villa was involved in the formation and assertion of their inhabitant’s social and cultural identities.

To undertake my research, as there has been limited publication of sites, I am returning to all the excavated materials. I have been working alongside a number of museums, who have been most forthcoming, in an attempt to examine and record all architectural and decorative villa fragments held in their respective collections. I will share my findings through public outreach.

I will highlight these issues in my presentation through a single case study: Holcombe Villa.

3. Illustrations of yesterday

ROWE, Trevor

Augmented Reality in Archaeology As A Tool For Interpretation

Despite the substantial growth in the field of computer simulations, the idea of augmented reality or, a live direct or indirect view of a physical, real-world environment whose elements are augmented by computer-generated sensory input such as sound, video, graphics or GPS data, is nothing new; however using augmented reality as an archaeological tool is.

By understanding the effects augmented reality could have on the archaeological process, archaeologists can have a better understanding on where the technology can best be applied to the field. There have been a few recent advancements with AR as an archaeological tool but unfortunately that is where the information ends, the impact of these advancements has not been assessed.

Taking a series of case studies devised around standard archaeological interpretation practice and analysing their outcomes against a strict set of criteria we can assess the affect of augmented reality on archaeological interpretation.

FERNÉE, Christianne

Like Pulling Teeth: Using microCT to understand the causes of changes in tooth size and morphology in Britain

Teeth are an ideal tool for modelling past environmental and cultural interactions. They are durable, a permanent repository for unique identifying features and outlasting other skeletal material. These characteristics are yet to be fully exploited and teeth have by no means been exhausted as a source of information. Hidden during life, tooth roots and the internal structure of the tooth have largely been ignored, despite offering a wealth of information. Whilst comparisons have taken place across populations, intra-dentition variation has often been assumed. Dental research has been hindered by the absence of tooth crown information that has been obliterated by wear, common in archaeological populations. Current investigations of environmental and cultural interactions largely employ speculative or destructive methods. State-of-the-art non-destructive methods such as micro computed tomography (micro-CT) can uncover the hidden secrets of teeth, revealing their internal and external structure in fine detail and allowing their comparison as complex shapes.

This research aims to understand tooth variation within individuals and across populations. It also aims to develop a method to reconstruct whole tooth crowns from worn or broken crowns. The internal and external structure of the tooth will be studied using micro-CT. Data will be analysed using traditional morphometric and geometric morphometric analyses, variation compared within and between archaeological and modern populations. Variation will be considered alongside a number of biological, environmental and cultural factors. This research will enable models of dietary patterns and social interactions to be developed, and uncover an abundance of information previously lost to tooth wear.

4. Theories of everything

CUTHBERTSON, Cory

Interpreting Palaeolithic Cognitive and Linguistic Ability from Lithic Variability

Lithic manufacture methods vary in complexity, as do the cognitive requirements to transmit and learn them. Palaeolithic intra-assemblage variability in lithic form may show differential patterning based on the method of cultural transmission used to acquire a technique, because higher fidelity transmission methods allow more faithful replication to take place; a low level of variability may therefore only be possible to those with high fidelity cultural transmission, allowed by cognitively complex social learning methods such as imitation *sensu stricto*, and teaching. If true, identifying particular social learning methods in the archaeological record would indicate the cognitive and linguistic requirements for that transmission. An experiment was conducted where 4 groups of 5 novice knappers made bifacial tools under different simulated social learning environments, in order to compare tool and debitage variability levels. Standardised porcelain blanks allowed for controlled analysis. 110 'handaxes' were compared for 2D shape, weight, and scar count, while flake analysis compared weight, number and size of flakes. As participants practiced, their tool forms began to more faithfully copy the model, and thus more closely resemble each other's. This was especially pronounced in the high fidelity groups, while the low fidelity group retained a higher level of variability. These results support the effect of social learning as impacting tool variability and highlight its potential as indicative of Palaeolithic cognitive and linguistic ability.

GARCIA CASACUBERTA, Núria

Choice for case study 1: the Alexandrian emporion

My research focuses on the study of ancient Greek and Roman harbours from the descriptions found in the literary sources. I have divided my thesis into two main parts. In the first section, I collect and discuss the abstract data from a theoretical approach. In the second half of the work, I shall choose 3-4 case studies in order to verify with physical

realities if what has been discussed in the theory section is correct, and to complete with archaeological data whatever features might be missing in the literature.

In this paper I would like to present to you the literary data supporting Alexandria as a choice for my first case study, that of an emporion or commercial port. During the investigation carried out for the first part of the thesis, a number of conclusions as to what an emporion requires or what functions it fulfils have been reached. In this paper I shall apply those to the literary data relating specifically to the port of Alexandria in Egypt in order to decide its suitability as a case-study, prior to starting work with the archaeological data.

EVANS, Merlin

The Dominant beast: Animality and Human Origins

This talk will give a brief historical overview of sociobiological arguments and their critics, with particular emphasis on human origins.

The anthropocentric worldview that has been central to Western thought and politics since classical antiquity has relied on a reductive dichotomy between humanity and animality. Animals are driven by their impulses to violence and carnality, whereas rational humans can suppress this bestial nature, thus making them moral agents and members of the socio-political community. Because humanity and animality are conceived as metaphysical essences, human nature can be depicted as a mix of humanity and animality; where the latter becomes dominant, the human is reduced to the status of animal.

This spectre of animality lies at the heart of theories that can be broadly described as sociobiological, which have been intimately connected with reactionary politics; even where all humans are animal, so are more animal than others. Opponents of these arguments have stressed the complete transcendence of humanity from animal nature, thus rendering evidence of animal behaviour and biology irrelevant to the study of humanity, a view which is just as beholden to anthropocentric ideology. Moving beyond this unproductive dialectic

and creating theories which do justice to the facts and to the beings themselves requires that we reject these anthropocentric concepts of humanity and animality.

MATAIX FERRANDIZ, Emilia

In search of lost trade. Scripta commercii , Roman law, and Mediterranean ports

Inscriptions held on commercial objects refer to the products, and to the parties involved in their production and distribution, and to transport, and need to be studied relating them to the legal schemes applicable in commerce. This insight allows associating them to broad categories as property, liability, or obligation. The relation amongst these inscriptions which concern different data as weight, name of the seller, controlling marks, etc. hides behind the phenomena of a political economy, monopolies, property or liability coming from the agreements held amongst parties. One of the elements that speaks most strongly about a relatively high level of integration of the Roman Empire is the commerce performed along different shorelines. Long distances and cultural differences, point to the fact that they might have been some common practices in order to have developed such commercial networks. Part of these common practices are displayed on these commercial writings on objects, which must be revised with the help of Roman legal sources to understand them in the context of trade.

5. A sea of memory

MURRAY, Micheal

Underwater Laser Scanning in Maritime Archaeology; Phase I and II Case Study Results

The advent of 3D capture technologies and the datasets they produce has profoundly affected archaeological research and preservation efforts for decades. In the 21st century, Moore's Law has led to rapid innovations that have dramatically reduced the size, cost, and

therefore, availability of various recording instruments in maritime archaeology. Underwater laser scanning has been directly affected by this trend and has recently emerged as a promising 3D recording technology with the potential to add a new layer of interpretative value to a site. Its successful deployment in the oil, gas, and underwater inspection industries have produced an unprecedented millimetric scale of resolution and accuracy concerning the true size, shape and constitution of a wide range of submerged material assets. However, in maritime archaeological terms, how can underwater archaeology most benefit from laser scanned data outputs and at what cost? For example, does achieving millimetric levels of accuracy and resolution outweigh the benefits of applying other popular recording methodologies such as photogrammetry and sonar and in what environments? Does laser scanning have any observable interpretive value over the others when producing a 3D digital model? How are they complimentary to each other? The results of two diver deployed cases studies comparing the ULS-500 to photogrammetry, sonar and experimental stereogrammetry, in the first phase, and the ULS-200 to multibeam sonar in the second, will aim to provide answers to these, indications as to its wider efficacy of use in underwater archaeology, and provide the basis for future case study applications.

GARRANDES, Carlos

Renegotiating human-sea relationships

The renegotiation of the relationship between human beings and the sea is a global phenomenon whose impact has been largely overlooked in the context of ontology. My research explores this process through the particular case of whaling in the Azores.

In the 18th Century whaling reached the Azores and soon became central to the economic and cultural development of this archipelago. In 1984 Portugal adopted the ban established by the International Whaling Commission and all whaling activities ceased. Following this, whale watching companies flourished on the archipelago. For the point of view of the Portuguese government, tourism was the obvious next step to follow the “primitive” stage of hunting. Replacing whaling with whale watching was regarded as an infrastructural and logistical issue that exclusively affected the field of economy.

However, whaling was never about economy in the Azores or, rather, never about economy alone. As this activity developed, it became the manifestation of a unique relationship between people and the sea, rooted at the core of the process community-making. A process based on the performance of activities, rather than a tacit agreement on abstract conventions. Whaling connected Azoreans with the sea as much as it tied them to one another, weaving a network of belonging and connectedness.

The aim of my research is to develop an understanding of the ontological implications of this process through the study of the material culture associated with whaling. My project focuses on Azorean watercraft as the primary archaeological evidence of human-sea interaction.

KUIJER, Kiki

Exploitation of prevailing winds and currents by the earliest known seafarers, reaching and colonising Australasia c. 50,000 years ago

The migration by anatomically modern humans (AMH) to Australasia around 50,000 years ago can be regarded as the first true hominin migration rather than a dispersal, because open water had to be crossed between Sunda (Southeast Asia) and Sahul (Australasia). The archaeological record of early settlement is limited, but evidence suggests short crossings from Southeast Asia to Papua New Guinea and northern Australia at a time when sea levels reached c. 80 m lower than today.

Although the maritime environment is central to the migration to Australasia, the nature of the colonisation process (whether it entailed deliberate seafaring or unintentional drift, and what this can imply about AMH behaviour) is still poorly understood. To resolve this, it is crucial to understand the environmental conditions that influenced dispersal.

Here, dynamical effects of the maritime environment on seafaring are addressed with computer models of ocean circulation and novel drift calculations. To demonstrate this method, a particle-tracking algorithm is used with high-resolution ocean model current data to explore modern-day ocean drift between Southeast Asia and Australasia. Large

ensembles of simulated drifts are calculated and further analysed to determine the most probable timescale and trajectory of drift between coastal departure and arrival points. These will be assessed against observations of drifting buoy trajectories. The tracking algorithm will be further developed to account for the “windage” effects of prevailing winds on a drifting body. Ultimately, this approach will be applied to ocean currents in regional simulations for different time-slices within the period of early migration.

EL SAFADI, Crystal

Exploitation of prevailing winds and currents by the earliest known seafarers, reaching and colonising Australasia c. 50,000 years ago

Maritime spaces are endowed with a set of natural characteristics which acts above and beneath the water surface. They foster a home for the movement of winds, of water, of ships, and of people. Yet these spaces are not present in isolation. Land and sea seamlessly merge shaping waterfronts that are marked by human activities. Our knowledge of maritime spaces is growing, much of their affordances, however, remain concealed. By reconstructing and analysing spatial and social processes, we can reach a better understanding of lived maritime spaces.

The Early Bronze Age (EBA) (c. 3600 to 2000 BC) in the Levant conventionally marks the first urban period. The Levantine littoral played a major role during the mid-third millennium BC, when maritime connections, particularly with Egypt, became vital. Although archaeological narratives have attempted to explain maritime affairs and social complexity of the EBA Levant, most did not consider the totality of Levantine space, neither appraise the Levantine littoral as a seamless space of sea and land.

This paper aims to present a study of the coastal Levant during the EBA as a space of maritime connectivity and accessibility. It builds on a rhythmical and a time-space analysis of the eastern Mediterranean, the Levantine littoral, and of the EBA maritime archaeological record of the area, in order to move beyond notorious social events to social processes, and shift from a static representation of space towards a relational space-time.

MAHAL, Ammandeep

England and the Atlantic World: Planters, Colonies, Ships and 17th Century Expansion

At the dawn of the modern era England fell behind other European powers, principally Spain and Portugal, in its efforts to establish a colonial presence in northern America. England finally did so in 1607. This has been considered by many to be the most interesting chapter in the history of the early 17th century. The main proponent of this settlement was the Virginia Company of London, later known as the Somers' Isles Company.

One of the ways in which we are able to understand this process of expansion is through written sources, such as the royal charters issued to adventurers and trading companies and correspondence between the various institutions and principal agents involved. However, as this process was primarily a maritime one, an alternative source of information is shipwreck data. One place that relevant data survives is Bermuda, a place that became English after the accidental stranding of Sea Venture on its reefs in 1609. Bermuda's location ensured its rapid establishment as a colony in 1612. As a result of which it became of central importance to the establishment of the English Atlantic world.

Through the combination of the archaeological resource held in Bermuda, with the historical accounts, I hope to shed more light on the process of early English maritime expansion. To this end, the presentation will introduce the shipwrecks and detail my research and fieldwork to date.

