

Roman Archaeology Conference & Theoretical Roman Archaeology Conference

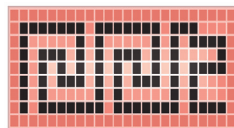
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Please note that this Book of Abstracts reflects the conference programme as of 5 May 2026 and may be subject to minor changes. The most up-to-date version of the programme and the timetable, updated on an ongoing basis, are available online via the Roman Society website (<https://www.romansocietyrac.ac.uk/ractrac-2026/preliminary-programme/>) and the Aarhus University conference website (<https://conferences.au.dk/ractrac-2026>).

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RAC1: Public Archaeology of the Roman Empire: from Engagement to Participation

Session organisers: Marta Alberti-Dunn & Rachele Dubbini

Roman archaeology has captured the imagination of many different audiences throughout the 20th and 21st century. From blockbuster movies and TV series to a steady stream of both popular literature and scholarship, the archaeology of the Roman period can be seen as both a comfortable terrain for a nostalgic interpretation of the past, and a gym which has been used to exercise our post-colonialist academic muscles. Due to its trans-national nature and widespread appeal, Roman archaeology lends itself to a discussion of the different ways in which heritage professionals have managed access to, and the creation of new knowledge by non-professionals. This session offers both theoretical grounding to non-professional participation in the archaeology of the Roman world, and a space for its practical applications to be discussed. From volunteer participation to archaeological heritage practices on Hadrian's Wall in the UK, to the accessible excavations of the Appian Way managed by the University of Ferrara, in Italy, this session looks at how different countries have approached the public archaeology of the Roman world.

Ostia Gateway to the Mediterranean. Public Archaeology in Ostia antica

Marina Lo Blundo

We intend to present the public archaeology projects carried out by the Ostia Antica Archaeological Park and developed within the framework of several European projects in which the Park has been and continues to be a partner. Each of the activities is aimed at and designed for different audiences, which we want to involve in a regular and continuous manner: "new residents", i.e. students of Italian for foreigners who have been living in Italy - and specifically in the Ostia area - for a few months, in order to involve them in learning about the area and sharing a common heritage. This project was created as a result of a grant from the European Heritage Label. The archaeological area of Ostia Antica is part of the European Heritage Label network of sites.

As part of the European project AHEAD - Accessible Heritage Experience for Audience Development, we involved students from a vocational school and pensioners from a local association and worked with them to design activities that were in line with their understanding and approach to archaeology. Finally, with the Green Heritage project, we are experimenting with a series of activities, also co-designed, to stimulate knowledge and appreciation of the natural heritage connected with the archaeological heritage.

Appia Antica 39 Project: Building a Heritage Community through Public Archaeology

Martina De Giuseppe, Michela di Meola Rotunno, Chiara Maria Marchetti, Ian Regueiro Salcedo & Christian Bello

The Appia Antica 39 Archaeological Project was launched in 2022 within the ECeC Laboratory - Cultural Heritage and Communities - of the University of Ferrara in Rome. Its primary objective is to reconstruct the sacred and funerary border landscape once occupied by the Sanctuary of Mars Gradivus. From its inception, the excavation has been conceived as a public-oriented initiative, integrating research and educational activities in close collaboration with local institutions and communities. This approach represents a model of shared and participatory archaeology that actively responds to the values and needs of the territory in which it operates.

A central goal of the project has been the creation of a heritage community around the newly opened excavation area through the experimentation of innovative methods for communicating archaeological heritage. On-site, weekly open-excavation events invited visitors not only to explore the site but also to take part in archaeological activities under the guidance of specially trained students. Online, dedicated content developed for Facebook, Instagram, and LinkedIn extended this engagement, fostering a long-term digital community that interacts, comments, and poses questions.

From a didactic perspective, students participated in every stage of the project: they developed fieldwork competencies, led public engagement initiatives, and co-created digital materials (photographs and videos) documenting both the excavation process and moments of shared experience. The educational model aims to train a new generation of professionals—archaeologists equipped not only with field skills but also with the multidisciplinary expertise required to operate across the diverse sectors of contemporary archaeological practice.

Bridging the Gap: Popularising Roman Heritage in Serbia through NGO Initiatives

Dimitrije Marković, Tamara Šarkić, Marija Krečković Gavrilović, Nevena Marjanović & Nemanja Pavlović

The Balkan provinces played a crucial role in the Roman Empire, serving as a frontier zone along the Danube and home to a dense network of military forts, towns, roads, and production centres. Beginning with the first excavations of the legionary fortress and city at Viminacium in the late 19th century, the tradition of Roman-period archaeology in Serbia is both long-standing and vibrant. However, most of the knowledge generated by these investigations remains confined to the pages of academic journals, while considerably less attention is devoted to outreach and popularisation. In addition, archaeology and heritage studies are almost absent from formal education, providing fruitful ground for pseudoarchaeological narratives and illegal looting. In this context, grassroots initiatives serve as a vital means of bridging the gap between scholarship and society. The Neozoik Foundation, formed by archaeologists and architecture students with over a decade long experience in promotional activities, has been developing models of public engagement with Roman archaeology over the past five years. Operating primarily in depopulated and economically disadvantaged regions of Serbia - areas paradoxically rich in Roman cultural heritage - Neozoik has implemented a series of week-long free workshops for schoolchildren. These activities combine hands-on and peer-to-peer learning, site visits, and interactive exercises that range from making jewellery, pottery, and coins to exploring broader themes such as bioarchaeology, funerary customs, migration, trade, and identities in the Roman world. By situating Roman heritage in a local context and encouraging children to reflect on their own role in its protection, these projects not only popularise archaeology but also counter misinformation and promote active participation. This paper will present the results and lessons learned from these initiatives, emphasising the potential of NGOs to act as mediators between professional archaeology and the wider public in the Balkans.

Participatory Archaeology, Reciprocity and Its Contribution to Scientific Research

Saskia Stevens

Archaeology is more than the recovery of artifacts and soil layers; it is a dynamic, process that can engage diverse audiences in exploring a shared past. The transdisciplinary research project Constructing the Limes investigates the function and impact of the Lower Germanic Limes from the Roman period to the present day, and citizen science has been integral to the project from the beginning. Participatory archaeological practises have fostered collaboration between researchers, volunteers, and local communities. This inclusive approach has enhanced data collection, contextual interpretation, and public engagement, demonstrating how co-created knowledge enriches scientific outcomes.

In 2023, the large-scale citizen archaeology project Heel Heerlen Graaft! ("All of Heerlen Digs!") took place in the city of Heerlen in the south of the Netherlands. Over 150 volunteers joined archaeologists in excavating one-square-metre test pits across the city to investigate the Roman past of Coriovallum. As the first large-scale urban participatory archaeology initiative in the Netherlands, the project aimed to advance research on the Roman Limes borderlands, and strengthening local engagement with archaeology. This paper reflects on the outcomes of Heel Heerlen Graaft! and its role within Constructing the Limes. It explores the concept of reciprocity and examines how participatory approaches can generate mutual benefits, knowledge exchange, and sustainable engagement between professional archaeologists, volunteers, and local communities.

Not Digging for Britannia

Kris Lockyear

Popular interest in archaeology often seems focussed on excavation. The UK TV show Digging for Britain encapsulates this issue in its very name. Many of the opportunities for non-professionals to become involved in archaeology centre around participation in excavations. Excavation, however, is only a small part of the work undertaken by archaeologists. In the latter half of the 20th century there were many community-based field surveys, but this technique, in the UK at least, has waned in popularity. Some have taken up aerial survey by proxy, scrolling through Google Earth images searching for crop marks, and others have taken to using drones. Geophysical survey, however, has always suffered from the cost of the equipment although many groups have undertaken surveys, principally Earth Resistance due to the relatively cheap equipment.

In 2013 as part of an AHRC-funded grant project, the Community Archaeology Geophysics Group was created. CAGG is an 'umbrella' organisation that draws members from a variety of local groups. The group was trained in the use of a modern cart-based magnetometer and then undertook surveys of late Iron Age and Roman sites in the UK county of Hertfordshire. Some thirteen years later the group is still surveying working on about 70 sites both within Hertfordshire and more widely across SE Britain. As the geographical spread of surveys has increased, so has the chronological spread and the variety of

methods now available to the group including Ground Penetrating Radar, Earth Resistance and Magnetic Susceptibility survey.

This paper will review the origins of the group and show some examples of the surveys they have undertaken on Roman sites in SE Britain. It will examine the strengths and weaknesses of the project. What worked, and what did not? What do we need to do now, and what are the 'critical points of failure'?

The Power of Rome: Building Social Capital through Roman Archaeology

Caroline Pudney & Jayne Price

This paper explores the value of learning about Roman archaeology in criminalised contexts. Specifically, it presents the outcomes of the MORTARIA project (Pudney 2017) as well as the more recent results of an exciting follow-on project delivered in 2024 within an adult male prison in Wales, UK (Price and Pudney in press). Both projects took the form of bespoke, alternative, educational offerings. The workshops were delivered as part of an ongoing project that seeks to explore the pro-social benefits and social capital (i.e. social and structural aspects that support positive identity formation) that could be developed through engagement with archaeology. The findings offer interesting insights into the power of Roman archaeology compared to the archaeology of other periods. For people with often disrupted educational pasts, learning content that focused on the archaeology of Roman Britain and the Roman world promoted positive experiences and created a space in which their own education and personal development impacted the growth of human and social capital within the prison environment. Within the cycle of offending, such meaningful activity can have powerful effects.

Twins, Tolerances & Hadrian's Wall

Richard Blows

My PhD research is investigating the impact of using gaming and digital twin technology to reconstruct historic sites within an accurate model of their landscape setting. My focus is on these technologies as tools for heritage engagement, learning and research.

As context, I am pursuing my PhD research as the founder and creative director of Time Machine Designs. The paper is therefore offered in the spirit of "non-professional participation in the archaeology of the Roman world, and a space for its practical applications to be discussed".

Between July 2023 and March 2025 my team developed the world's first digital model of the entire Hadrian's Wall system, using Microsoft's Flight Simulator platform. This was released commercially in March 2025 and we are now updating it to include dynamic shipping, the town of Corbridge and Romano-British farmsteads.

As well as making "Hadrian's Wall 180" available to flight simulation enthusiasts, it has led to us being commissioned by the Hadrian's Wall World Heritage site team to make four short films to promote the site to potential visitors. We are also working with the Vindolanda Trust to develop a new visitor experience bringing the entire site to life as an interactive, first person simulation experience.

Reflecting the current stage of my research, my paper will discuss:

- The scope for commercial simulation technology and derived social media content as a basis for driving popular engagement with Roman history.
- How this differs from using bespoke technologies.
- The informal learning impact for the developers working on the project.
- An emerging framework using "tolerance corridors" to communicate what might be considered "accurate", "debatable" or "conjectural" to non-specialist audiences engaging with digital reconstructions.
- The application of this approach to our "Vindolanda 270" first person simulation experience.

RAC2: Bodies in Ritual Practices

Session organisers: Maureen Carroll & Emma-Jayne Graham

This session aims to explore relations between the human body and ritualised activities in different contexts in the Roman period, employing archaeology and archaeological science to aid in reconstructing processes and the lived experiences of those activities. In the funerary realm, the human body took centre stage in the interplay between the living and the dead. For example, the act of dressing the corpse and applying aromatic resins to skin and clothing for its display during the lying-in-state period enabled mourners to engage with the dead as if they

were still alive. Furthermore, the sequences of cremation rituals (burning, collecting, and containing) were crucial performative actions, contributing to the experiences embodied in the living during these processes. In votive ritual practices, it was through the human body that prayers to the gods were channelled and divine assistance was received. Dedications such as anatomical votives in the form of human body parts and objects used in bodily care enable us to explore and characterise lived religious experiences involving complex combinations of humans, the divine, and material objects. Furthermore, bioarchaeological analysis of votive deposit assemblages containing articulated and disarticulated animal remains and cuts of meat contributes to an understanding of symbolic acts and the interactions between human and non-human bodies in ritual.

These few examples represent the sorts of things being done to/with/through bodies of different sorts (living and dead, human and animal) in different settings that this session aims to explore. Speakers will present fresh perspectives on activities and contexts involving the body, shedding light on the embodiment and sensory dimensions of ritual practices across the Roman empire.

Facing Death with Beauty: Evidence for the Use of Blush in the Southwestern Necropolis of Virunum (Austria)

Christoph Hinker

This lecture focuses on the grave of a woman who was buried in the southwestern necropolis of Virunum (Zollfeld, Austria) at the beginning of the 2nd century AD. The cremation contained several remarkable grave goods, in particular special globular and bird-shaped glass vessels, the latter of which still contained remains of a pink powder. Scientific analyses, passages from ancient literature and similar findings have shown that the former contents of these glass vessels were a cosmetic product used as blush during the Roman imperial period. In connection with the context of the grave, the question of whether the finds from Virunum are more than simple grave goods intended for the afterlife of the deceased will be investigated. During the burial ceremony, the blush may have been used when laying out the body (*collocatio*), possibly by professional service providers (*pollinctores*) who washed, anointed and probably also applied make-up to dead bodies.

Embodied Residues: Pottery as Mediators of the Body in Roman Burial Rituals

Medi Jones-Williams

Just as bones embody diet (traceable through stable isotope analysis), unglazed ceramics incorporate foodways at a molecular level. Pottery is the most common grave good from Roman Britain, yet funerary ceramics remain under-utilised for understanding burial rites. Pots are particularly valuable where the body is fragmented or absent: in contexts that degrade where skeletal remains, or where symbolic deposits represent the dead.

Organic residue analysis (ORA) of funerary pottery reveals which products were processed within vessels prior to burial, reframing them as points of interaction between humans, animals, and plants in both life and death. A recent pilot study on funerary pottery demonstrated social and spatial variation in accessory vessel selection in Roman Britain (Dunne et al. 2024), and my paper presents the first large-scale application of ORA to Roman funerary pottery. Scientific methods (GC-FID, GC-MS and GC-IRMS) are integrated with environmental and material culture analysis and interpreted through posthumanism and sensory archaeology.

I adopt an object biographies approach, exploring the vessels' transition from domestic to sepulchral spheres which mirrors the body's transformation after death. Some pots once used to process animal products were recycled as receptacles for human remains. Other results highlight the use-lives of heirloom vessels, 'kiln seconds,' and deliberately broken pots placed in graves.

Invisible residues - whether from food, drink, or incense - highlight pottery's role as sensory objects handled and consumed during funerary feasts. These interactions shaped the atmosphere of the funeral and inscribed memory through the senses, exposing the multi-sensory, multi-species dimensions of Roman funerary practices.

By recovering embodied residues, this study positions Roman funerary ceramics as material and metaphorical extensions of the body, mediating its transformation from life to death and reframing pottery as active participants in Roman burial rites.

What Are the Limits of the Human Body after Death? Examining Non-Elite Human-Animal Burial Rituals from Colonia Patricia Corduba in the 1st Century AD

Rafael Barroso-Romero

The so-called “sepulcretum of Llanos del Pretorio” is a Roman cemetery for the non-elite that was in use during the first half of the 1st century AD in Colonia Patricia Corduba, the capital of the province of Baetica. It consisted of fifteen square burial enclosures around a burial street. Most of the enclosures had their own crematorium, strategically situated in the central area and close to the street. The good state of preservation of the site has made it possible to identify the remains of ten crematoria and 67 burials, most of which were secondary cremations in urns buried in simple pits. Nine of these burials contain different combinations of human and animal skeletal remains. These include animal burials alongside urns containing cremated human and animal remains, animals buried in their own graves or protected by pots alongside human cremations, etc. Some of this evidence suggests that human bodies were cremated alongside animals, while other suggests that funeral banquets took place during the burning of the corpse or at the time of the urn's burial. Several cases also suggest that animals were sacrificed to be buried alongside humans in very carefully premeditated positions. The aim of this paper is to reconsider the limits of the “human” body during such burial rituals. To this end, I will briefly define the conceptual foundations of an approach based on posthuman thought and the materiality of the body understood as practical relational ontology. Next, this approach will be applied to the analysis of the aforementioned burials in order to identify the strategies that perpetuated human-animal relations after death. This will illustrate how funeral rituals were sometimes carried out in combination with hybrid human-animal bodies, where it is difficult to distinguish whether the animals are offerings or a conceptual and material part of the deceased.

Performing Death: A New Approach to Decapitation Burial Practices in Roman Britain

Reanna S. Phillips

Decapitation burials in Roman Britain present a number of unexpected variations within wider imperial funerary traditions, yet their interpretive potential remains underexplored. While recent studies have improved our understanding of their osteological features, interpretations often strive towards singular explanations, such as punishment or ritual deviance. This paper reframes decapitation burials not as static outcomes but as dynamic, emotionally charged performances shaped by the living. Drawing on theoretical approaches to emotion, the senses and the materiality of the body, I explore how these burials were experienced, enacted and remembered. Rather than focusing solely on the deceased, I centre the living participants: those who prepared, processed, and commemorated the dead. Through this lens, decapitation becomes not just a physical act but a transformative rite that mediated identity, memory and belonging.

Using case studies from Roman Britain, I examine how bodily fragmentation, grave goods, spatial arrangements and landscape movements contributed to the sensory and mnemonic power of these rites. The decapitated body, visceral, altered and potent, acted as a catalyst for emotional expression and social negotiation. These funerary performances may have reinforced community cohesion, marked boundaries of identity, or responded to localised beliefs about the living and the dead.

I argue that decapitation burials were not marginal but meaningful, embedded in regional traditions and capable of generating powerful, enduring memories. By bridging small-scale, embodied experiences with broader cultural patterns, this paper contributes a new interpretive framework for understanding funerary ritual as a co-creative act between the living and the dead.

Ultimately, this study invites a reconsideration of how we approach bodily treatment in Roman funerary archaeology—foregrounding the affective, performative and material dimensions of ritual practice.

Light at the End of the Loculus: Exploring Funerary Lamp Deposition in Roman Syria

Kate Honeker

In my paper, I argue that oil lamps deposited in funerary contexts of Roman Syria acted as a symbolic bridge between the worlds -and bodies- of the living and the dead. With an absence of literature on the funerary traditions of Roman Syria, our understanding of the beliefs and practices of these communities relies heavily on material evidence. Oil lamps were frequently deposited in tombs of Roman Syria, and their multiplicity and particular in situ arrangements (e.g. clustered around a funerary portrait; sealed within burials) displays a significance that encompassed but exceeded functionality alone. The use of these lamps was a practical necessity within a dark tomb space, or during nocturnal funerary activities, but may additionally have acted as a status symbol, a votive offering to the deceased, and a protective object for both the living and dead. Analysis of wicks from Hypogeum F, Palmyra, has shown that deposited lamps were lit only once. Perhaps the same flame that illuminated the tomb for the living was thought to light the path for the deceased in the afterlife. The tactility of the oil lamp is also significant, though often overlooked: an ergonomic object -held in the palm, subtly warm to the touch- that was

passed from the living hand to the body of the deceased, is interpreted here as a gesture of connection and remembrance.

The Denial of Decay in Roman Commemorative Practices

Liana Brent

Fewer than 150 representations of skeletons survive in Greco-Roman art, the majority of which are found in contexts that pertained to the world of the living, rather than that of the dead. Animated skeletons appear on terracotta lamps, gems, pottery, mosaics, and on the Boscoreale cups, as Dunbabin (1986) has demonstrated. In Roman funerary contexts, however, depictions of dead bodies are largely absent. Two famous examples, reliefs from Amiternum and the Tomb of the Haterii, depict the deceased during pre-burial rituals: one individual reclines on a funerary bier while being carried in a funerary procession; the other is laid out in the atrium of a house. In only a few cases within the realm of Roman funerary art are dead bodies depicted in more advanced states of decay, which prompts us to consider the representational and conceptual challenges of depicting the deceased.

Death is a continuum that does not end with the disposal of the body and the creation of a mortuary deposit; even if the processes of decomposition usually take place out of sight and after burial, the body is a dynamic, material entity that continues to transform after its removal from the world of the living. Roman funerary rituals employed several strategies to respond to the material realities of the corpse: for example, cremation could artificially accelerate the process of decomposition, while the use of shrouds, coffins, and sarcophagi could conceal and contain unburnt bodies (Graham 2015). This paper argues that commemorative objects with representations of the dead, such as the altar of Antonia Panace (MANN inv.2803) or the epitaph of Critonia Philema (Musei Vaticani inv.7500), simultaneously attest to the representational difficulties of depicting dead bodies as non-inert entities, while inviting the viewer to think about corporeal transformations in a carefully controlled framework.

Roses for Venus and the Dead: Embodiment, Scent, and the Ritual Afterlife of the Roman Rose

Samantha Jane Rowley

This paper redefines the role of the rose in Roman funerary ritual, arguing that it functioned not as decoration but as a sensory and theological medium of transformation. Integrating sensory archaeology, embodiment, and lived-religion theory, it positions the rose as a ritual agent mediating between mortality and regeneration, its colour, texture, and remembered fragrance sustaining relationships between the living and the dead.

Painted garlands from the Grande Colombario of Villa Doria Pamphilj and the Esquiline columbarium (Museo Nazionale Romano, Palazzo Massimo) display rhythmic festoons of five-petalled rosettes—conventional depictions of roses—binding niches into visual and olfactory communities of commemoration. In-situ comparanda from the Vigna Codini columbaria confirm a shared decorative and ritual grammar. Sculptural parallels, including the British Museum child's sarcophagus and the so-called "rose-garland" sarcophagus in the Terme di Diocleziano, translate ephemeral bloom into durable memorial.

Read alongside the Rosalia festival in Ovid's *Fasti* (5.335-338) and its Christian critique in Tertullian's *De Corona* (10), these material expressions emerge as permanent Rosaliae—offerings made perpetual through pigment and stone. Drawing on Scheid (2003), Rüpke (2018), and Graham (2021), the paper interprets these roses as embodied gifts, sensory exchanges uniting bodies, spaces, and remembrance. The study concludes by proposing diagnostic criteria for identifying roses in Roman funerary art (five-petalled schema, rhythmic repetition, trans-material correspondence) and situates these findings within ongoing doctoral research on the rose's iconography and sensory afterlife, redefining it as Rome's quintessential medium of transformation.

Bodies, Busts, and Incense Burners: Domestic Mortuary Rites in Pompeii

Johannes Eber

Incense sacrifices were central components of Roman cult practices, perceivable in a multisensory way both by the officiating priest and the assembled community. Although the act itself and the rising, aromatic smoke it produced were highly ephemeral, incense offerings are visible in the archaeological record through material culture, most notably in form of incense burners.

At Pompeii, almost 600 incense burners attest to a broad range of aromatic offerings, especially in domestic contexts. Within this heterogeneous spectrum of censers, a remarkable subgroup consists of trough-shaped incense burners known only from the Vesuvian area. Found primarily in houses - and in several cases attested in situ within *lararia* - these vessels feature anthropomorphic busts attached to their rear walls. Their elevated position and traces of burning suggest that the busts represent the recipients of the offerings burnt within the censers. Strikingly, the figures do not depict the usual household gods, such as the Lares or the Genius; rather, they most often show boys dressed in the

toga and wearing a bulla. Strong iconographic parallels with Early Imperial funerary art suggest that these busts are miniaturised and schematised portraits of deceased children.

My paper explores the relationship between the anthropomorphic busts, the incense offerings placed in the little troughs, and the embodied experience of the human cult participants who simultaneously enacted and perceived the aromatic sacrifices. Considering both the archaeological contexts and the iconography of the busts, these censers can be linked to domestic commemorative rites for the dead. Particular attention will therefore be given to how the rising, fragrant smoke materially evoked and sensorially enhanced the perceived connection between the bust and the body of the deceased within the mourning family's experience.

The Altar and the Body on the Roman Frontiers

Blair Katherine Betik

Carved stone altars appeared in ritual contexts across the Roman Empire, yet despite their prominence, they have often been taken for granted as mere surfaces for burning, pouring, or depositing offerings. While recent studies of embodiment in Roman ritual have explored funerary contexts and anatomical votives, altars themselves (as objects of bodily interaction) remain comparatively neglected.

This paper examines the reciprocal relationship between the human body and the Roman altar in ritual practice along the empire's frontiers, arguing that the altar functioned as a bodily proxy. Through visual, epigraphic, and contextual analysis, it demonstrates that altars interacted with and incorporated elements of the human body in diverse ways. Using affordance theory, the paper asks what actions the stone altar makes possible, and how its dimensions, weight, and material shape the ways a human body can engage with it. A small altar that can be grasped and lifted offers different possibilities than a monumental altar that supports a leaning body.

In Britain, altars from forts along Hadrian's Wall incorporate disembodied heads in their capitals. Positioned below the focus, these heads appear to emit the warmth, light, and scent of offerings; in rare pierced examples, light shines through the carved face itself. In Syria, altars bear reliefs of worshippers' bodies or sometimes just their hands, including men, women, children, and priests with hands raised in prayer or beside incense burners. These representations condense ritual gestures into miniature or fragmented forms, functioning like anatomical votives.

This approach reveals that altars did not merely support ritual action but embodied it, mirroring both worshipper and god. British examples reproduce bodily form; Syrian examples preserve action through depicted gestures and fragmented parts. By considering the altar and its entanglements with the human body, this paper reconceives this ritual instrument as an active participant in Roman religious life.

Embodied Ritual on the Romano-British Frontier: The Case of Carrawburgh Mithraeum

Eleri Cousins

Discussions of military religion in the Roman empire have traditionally focused on the relatively abstract dimensions of the role communal rituals played in binding the army together and reinforcing military hierarchies. This emphasis on the broad-brush functions of religion has been valuable but can come at the cost of the erasure of soldiers and other members of the military community (including slaves, women, and children) as individual social agents in ritual contexts. For Roman Britain in particular, this has been compounded by an overwhelming emphasis on epigraphy as the primary lens for accessing religion in army communities, especially on Hadrian's Wall - leading to a neglect of other rich sources of evidence for the embodied experience of ritual spaces.

In this paper, I use the mithraeum at Carrawburgh fort on Hadrian's Wall to explore how an embodied, sensory approach to temple spaces and ritual action can allow us to access a more complex understanding of the intersection of individual experience and social dynamics on the frontiers of Roman Britain. Worshipers at Carrawburgh cooked and consumed the bodies of sacrificial animals and integrated them the fabric of the temple through structured depositions and weaving bones into the wattle-and-daub of the building. They harnessed experiences of light, flame, heat, and smell through pine-cone fuel and epiphanic use of pierced solar rays on an altar to Mithras. The site itself sits in a damp, regularly flooded stream valley, within a wider landscape of movement to and around the fort and other extramural temple spaces. Here, I explore how careful consideration of these and other elements of the temple can contribute not only to ongoing conversations about ritual practice in Mithraic spaces, but also serve as a template for a more archaeological and embodied approach to the social functions of religion in army settings.

RAC3: Exploring Regional Dynamics in Roman Settlement and Landscape Archaeology

Session organisers: Mark Groenhuijzen & Philip Verhagen

The study of the settlement landscape offers a distinct and valuable perspective in archaeology, transcending the level of the individual site and isolated find material. By examining broader spatial frameworks and temporal scales, these studies reveal how human communities organised, constructed and responded to their environment across diverse regions and time periods. Drawing from landscape archaeology, computational archaeology and related (interdisciplinary) fields, settlement landscape research provides a holistic understanding of the complex interplay between natural, cultural and social factors that shaped patterns of human habitation. This session aims to provide a platform for recent studies that explore the structure and typology of Roman settlement landscapes, their chronological evolution, the multifaceted factors that influence their formation and development, and the societal dynamics that result from the structure of the settlement landscape.

While computational methods, such as GIS, remote sensing, and spatial analysis, offer powerful tools to model and visualise complex settlement systems, this session foregrounds a range of methodological approaches. Papers in this session employ both quantitative and qualitative frameworks to reconstruct and analyse past settlement landscapes and their respective communities. We place a special emphasis on offering space to studies from a wide geographical scope and potentially extending outside the Roman Period as well, to encourage a richer, more inclusive understanding of settlement landscape dynamics across human history.

Archaeological and Sensory Landscapes at Potentino, Tuscany

Phil Perkins & Eleanor Betts

The Potentino Exploration Project is a multi-disciplinary investigation of the archaeological, historical, environmental and cultural landscape of the Castello di Potentino, on the slopes of Monte Amiata in south eastern Tuscany. Situated at the heart of ancient Etruria, this ancient volcano has not previously been the subject of systematic archaeological investigation. The project seeks to first, understand the long-term changes in the settlement pattern, landscape and environment in the micro-region around Potentino, and then contextualise this within central Etruria.

Fieldwork has sought to relocate historically documented Roman and Etruscan settlement and burial sites and identify the places in the landscape where there is presently a connection with the archaeological record. Geophysical survey has investigated sub-surface features and excavation has documented rock-cut features used in agricultural production. The project is also exploring the ancient religious landscape by seeking to contextualise previously documented architectural terracottas, votive bronzes and inscriptions. This thread follows through into the study of the medieval period when the area is dominated by the Franciscan convent of San Bernadino at Colombaio and the castle at Potentino.

At the same time, the project is documenting the human perception of the landscape through phenomenological landscape survey, and the recording of oral history relating to the archaeological record and past agricultural practices. The project is integrating all these diverse forms of data into a GIS to document, visualise and analyse the archaeological and sensory landscape of Potentino.

Field Survey Data, Settlement Systems, and Rural Economy of the Roman Sibaritide (Calabria, Italy)

Martina Cecilia Parini

This paper, based on my PhD project, explores rural settlement patterns in the Sibaritide (Calabria region, southern Italy) from the 4th century BCE to the 5th century CE through the analysis of field survey datasets. The Sibaritide corresponds to the hinterland of the three colonies of Sybaris (8th century BCE) - Thurii (5th century BCE) - Copia (2nd century BCE), founded by the Ionian coast. While research on Roman landscapes in this area has traditionally focused on a few excavated villas, intensive field survey projects since the 2000s have revealed a more varied picture. The selected datasets, collected by the University of Groningen (Raganello Archaeological Project) and the Sapienza University of Rome (surveys of Castrovillari and Amendolara municipalities), focus on different river valleys and span multiple landscape units, from the coastal terraces to the Pollino mountains, providing a comprehensive view of the territory. Methodologically, this project addresses the challenge of

comparing field survey data collected using different protocols and integrating them effectively for regional analysis. Changes in land use and settlement patterns are identified by analyzing both settlement data and off-site scatters. The spatial distribution of settlements is then contextualized in relation to the road network and land suitability. Following the rural infill documented during the 4th-3rd century BCE, the number of rural settlements declined in the late Republic but increased again from the Augustan Age. However, sub-regional variations are particularly evident for the Late Roman period. These trends reflect a shift from intensive to extensive land use, with pastoralism and the exploitation of mountain resources likely gaining importance. Finally, these results are contextualized within the broader, supra-regional framework of the long-term dynamics of rural economies in Roman southern Italy.

The Landscape of Inland Southern Etruria in the Late Roman Republic. The Case of the Ager Tuscanensis

Alessandro Tizi

This paper analyzes the transformation of the rural landscape of inland Southern Etruria, in central Italy, during the final phases of the Roman Republic. Particular attention is devoted to the Ager Tuscanensis, which includes the territory of Tuscania, Arlena di Castro, and Piansano. Based on data from archaeological excavations and systematic field surveys carried out in recent decades, the study aims to reassess settlement dynamics and land use around the time of the Social War (91-88 BCE), a crucial moment of institutional and socio-economic transition. Archaeological evidence points to a significant reorganization of the rural landscape, which can be interpreted as part of the broader and definitive process of Romanization. The establishment or consolidation of villae, the restructuring of productive systems, and the integration of the territory into wider economic and administrative networks reflect the imposition of a distinctly Roman territorial model. These transformations become particularly evident in the decades immediately following the extension of Roman citizenship to Italic communities, though their roots can already be traced to the period preceding the conflict. Focusing on this specific microregional context in central Italy, the paper offers a detailed interpretation of the modes of Roman control and cultural assimilation at the local level. The case of the Ager Tuscanensis thus contributes to the broader debate on the rural consequences of Roman expansion and the long-term impact of the Social War on the territorial organization of central Italy.

Mapping Urban Agricultural Spaces in Early Imperial Etruria and Latium

Jessica Venner

Urban agriculture has long been marginalised in studies of Roman settlement, where attention has centred on rural farming and the provisioning role of hinterlands. Yet archaeological and archaeobotanical evidence increasingly points to the integration of cultivation within urban environments. Pompeii, with its exceptional preservation, offers a particularly valuable case study. My recent investigation into its agricultural neighbourhood demonstrated that cultivated areas expanded by more than 250% in the aftermath of the earthquake of 62 CE (JRA, forthcoming December 2025). Crucially, these spaces did not simply reshape the city's physical environment but contributed directly to socio-economic development, sustaining households, supporting market activity, and fostering resilience. These findings raise the question of whether such integration was unique to Pompeii or part of a wider Italian phenomenon.

This paper presents the results of an archival pilot study, undertaken with the Rome Award (September-December 2025) at the British School at Rome, and forming the foundation for a Leverhulme-funded postdoctoral project at the University of Oxford. Drawing on excavation reports, archaeobotanical data, and epigraphy, the study identifies case studies across Etruria and Latium, ranging from small household gardens to larger cultivated plots embedded within the civic fabric.

In this paper, I present the results of the archival pilot study, which provide new insights into the role of cultivation in urban contexts and underscore its significance for provisioning, mobility, and environmental management in the early empire. I also outline how the dataset establishes the basis for a GIS mapping framework to be developed in the wider project.

By situating urban agriculture within the frameworks of settlement and landscape archaeology, the paper reframes Roman towns as not merely consumers, but also active producers embedded in wider regional, community-centric, systems.

Assessing the Impact of Rome over Agro-Pastoral Practices in Alto Alentejo (Portugal). A Geospatial Approach

Fernando Menéndez-Marsh

The transition from the Second Iron Age (4th -1st century BC) to the Roman period (1st century BC-5th century AD) in Alto Alentejo (Portugal) is generally seen as a period of change in the economic practices

and exploitation of the territory. Traditional narratives have highlighted how the process of Roman imperial expansion altered the pre-existing rural economy, based on cattle-breeding and pastoral practices, to one primarily based on arable farming. However, recent studies have challenged this dichotomy: there is evidence of crop farming in indigenous Iron Age settlements and, more generally, diversity in landscape occupation patterns, that may suggest different economic strategies, is now documented during both the Iron Age and Roman periods. These new perspectives see the impact of Rome not in a shift from a pastoral economy to one based on arable farming, but in the scale of land-use practices. Both perspectives, however, are equally affected by a lack of economic studies focused on the Iron Age period which could serve to make comparisons with the Roman period and to critically assess theories on economic change.

This paper presents a geospatial model of the agricultural and pastoral capabilities of Alto Alentejo during the Iron Age and Roman periods. The agro-pastoral potential of different archaeological sites, including Iron Age hillforts and 'oppida', as well as Roman rural sites, is explored in order to identify temporal and spatial variations in agro-pastoral practices. On a more general level, it explores the potential of geospatial methods in the assessment of economic theories of change related to the process of Roman imperial expansion.

Roman Interaction with Iron Age Societies in North-Western Iberia after the Second Century BC: Responses, Changes and continuities

Santiago Tuñás-Corzón

Over the last three decades, studies on the Iron Age in NW Iberia have sparked an intense academic debate about the social structure of indigenous communities in this region. The key question has been to determine when and how socio-political relations shifted from a more egalitarian scenario to a clearly hierarchical pattern. This period is characterised by several defining features, including that castros (hillforts) were the only type of settlement, the small size of these sites, and the complete absence of a funerary record. In line with the traditional paradigm for the European Iron Age, the castro landscapes have generally been interpreted as a reflection of competing communities, which tended to the intensification of production and the consolidation of warrior elites. In addition, most researchers agree that the period should be divided into two phases, marked by an evolution in social complexity and a shift in settlement patterns: an Early Iron Age (9th-4th centuries BC) of relatively similar castros occupying hilltops, and a Late Iron Age (4th-1st centuries BC) of progressively more hierarchical castros occupying the fertile soils of valley bottoms. This supposed turning point in the 4th century BC is usually associated with the increasing volume of Mediterranean imports brought by Phoenician/Punic traders. Contrary to this view, this paper argues that the two-phase model is unsustainable when examining social relations of production at the macro-scale level. Indeed, extensive spatial analysis of Galician castros has reinforced the hypothesis of an agrarian, segmented landscape maintained throughout the Iron Age. In this sense, egalitarianism rather than hierarchisation seems to be the key concept to categorise the social structure of these communities. The true path towards hierarchisation only began after the second century BC, mainly due to Roman contact, first through intensified maritime trade and later through military expansion by land.

Beyond the Villa: Modeling Environmental Drivers of Settlement Change in the Roman-Early Medieval Moselle

Ilenia Petrarulo & Giacomo Fontana

This paper examines the evolution of the settlement landscape in the Luxembourg-Germany (Moselle) border region during the critical transition from the Roman to the Early Middle Ages. Part of this period is defined by a complex interplay of natural, cultural, and social factors, including documented political and economic instability alongside significant climatic shifts. Archaeologically, this manifests as widespread rural abandonment, exemplified by the decline of Gallo-Roman villas, leading to an apparent "settlement vacuum" that persisted until the arrival of Frankish and Merovingian populations. This study moves beyond traditional mono-causal explanations (i.e., socio-economic crisis) to test the hypothesis that climate change acted as a factor in driving these settlement dynamics. We investigate whether this environmental variability influenced the initial abandonment and, subsequently, the patterns of reoccupation.

Adopting a computational archaeology framework, the study employs quantitative spatial analysis, specifically Point Pattern Analysis (PPA) and Point Process Models (PPM). We develop a diachronic comparison, modeling the pre-crisis settlement structure (Gallo-Roman villas) against the post-crisis landscape (Merovingian cemeteries and tombs as settlement proxies). These distributions are modeled against environmental variables and high-resolution paleoclimate data to 1) identify environmental factors that correlate with the settlement hiatus, and 2) determine whether later populations reoccupied

Roman-era sites or selected new locations in response to the transformed environmental and climatic landscape.

This approach offers a quantitative methodology for modeling human-environment interactions during periods of instability, directly addressing the session's call for studies analyzing the chronological evolution of settlement landscapes and the societal dynamics that result from them.

From the Vosges to the Massif Central (France): How Can We Study Roman-Period Settlement in Mountain Regions?

Maxime Calbris

The study of mountain landscapes in the Roman period is currently experiencing renewed momentum in France. Several research projects are underway, seeking to understand how populations inhabited and exploited these highly constrained environments. In historiography, mountains were for a long time considered marginal areas, with limited development and situated outside of "Romanity." Current studies, however, show the opposite: they demonstrate that mountain regions in Gaul and nearby Germania were fully exploited during the Roman period. Nevertheless, the forms of settlement, the intensity of occupation, and the modes of exploitation varied greatly from one region to another.

In this paper, we propose to present the results of ongoing research on Roman-period settlement in the Vosges, in northeastern France, and in the Massif Central, in the center of the country. Methodological aspects will play a central role in the presentation. While quantitative approaches remain possible in some cases, we will show that their application is often difficult in mountainous areas, where the available data is usually highly fragmented. Other, more qualitative methods therefore need to be employed. The challenge becomes even greater when attempting to compare the data from the two mountain ranges. Significant work is required in preparing both the datasets and the methodological frameworks, and in many cases only qualitative modes of comparison can be applied. Nevertheless, this is an essential step toward understanding the diverse forms of settlement in mountain regions during Antiquity.

Dynamics of Change - The Genesis and Evolution of Roman Settlement in the Western Hunsrück

Sabine Hornung, Arno Braun, Lars Blöck & Marvin Seferi

Landscape archaeology in the vicinity of the Hermeskeil military camp, a site relating to Caesars Gallic Wars and the conquest of the Treveri, has produced comprehensive evidence allowing for a detailed reconstruction of the Roman settlement system. Systematic fieldwalking and geophysical prospections were employed to understand the structure of single sites and their relative position within the settlement landscape as a whole. A continuous development from Late Iron Age roots is visible for selected rural settlements and a formerly unknown Roman vicus alike. This central settlement seems to have played some part in the provisioning of the Roman army - during the Gallic Wars and once again in the Augustan period. This is due to a favourable road infrastructure which has been reconstructed from Lidar scans and cropmarks. Despite the existence of a sizeable vicus rural settlement structures remained modest, with only few stone-built villae close to the vicus and a larger number of timbered farmsteads clustering in areas less favoured by infrastructure. The overall settlement density seems remarkably high, though, with farmsteads located at distances of only 150-400 m from each other. Botanical data and poor soil qualities illustrate an economic focus on livestock farming and particularly on cattle breeding. Moreover, the rarity of Roman coinage from the Imperial period suggests small surpluses and an-only limited importance of the coin economy during that time. It therefore comes as little surprise that economic change is also reflected in the decline of the Roman settlement system during Late Antiquity, when the same regional infrastructure once more determined the fate of individual settlements. The paper will attempt a first synthetic overview on our ongoing research which is being conducted in a DFG-funded project.

Reconstructing Roman Rural Landscapes: An Integrated Approach to Analyzing Roman-Era Settlements Along the Danube Limes in Noricum (Austria)

Dominik Hagmann

Reconstructing Roman-era settlement dynamics along the Danube Limes in Noricum (today's Austria) presents specific methodological challenges, not least due to the disparate nature of the published archaeological record and the presence of sites that fall outside traditional typological classifications, such as small villa- and vicus-type settlements. This paper presents a suite of digital and analytical approaches developed to address these challenges and to achieve a more nuanced understanding of long-term landscape development between the 1st and 5th centuries CE.

At the core of this approach is the systematic integration of heterogeneous data – including legacy excavation and field survey results, artefact and site distributions, environmental variables, and remote sensing data – into a consolidated GIS framework following FAIR and CARE principles. Within this

digital environment, machine learning-based ecological niche modelling is employed to generate a suitability map for rural settlement, utilizing various environmental and infrastructural parameters. This “postdictive” modelling is complemented by network-based spatial analyses that reconstruct likely connectivity between settlements, production sites, and military installations, enabling the exploration of intra- and inter-regional interaction patterns. Furthermore, diachronic spatial statistics and density analyses are applied to trace shifts in settlement intensity, land use, and functional relationships across several centuries.

By employing a multi-method analytical framework, rural sites can be more insightfully situated within broader settlement systems. Formalized and transparent methodologies enhance traceability, reproducibility, and comparability, enabling others to evaluate and refine interpretations. However, the results remain modelled reconstructions that reflect the current state of data and methods; nonetheless, they allow us to approximate past realities more closely. Consequently, digital approaches can enhance interpretative potential by providing diverse insights into the multifaceted interplay between environmental, infrastructural, and social factors that shaped the Roman frontier, while also contributing to a more nuanced understanding of the complexity and dynamics of rural hinterland landscapes.

Fragments of Time: Meaning and Modelling in the Batavian Rhine Frontier

Andrew Lawrence

This paper examines the regional dynamics of the Kromme Rijn area within the Batavian civitas, a sub-region of the Dutch Rhine frontier that offers an ideal laboratory for exploring the interaction between imperial structures and local communities. Combining qualitative and quantitative perspectives, it applies a mixed-method approach to reconstruct long-term patterns of settlement, economy, and social change.

The qualitative component focuses on selected, well-documented military and rural sites to trace architectural development, settlement organisation, and subsistence strategies. Integrating archaeobotanical, dendrochronological, and zooarchaeological data, it highlights the tension between continuity and innovation in rural life and the role of military and economic infrastructure in shaping local landscapes.

The quantitative component employs a deterministic chronographic model to estimate settlement duration and occupation intensity in 40-year increments, based on the chronological information associated with the artefactual datasets. This normalisation procedure allows the visualisation of changing settlement densities and rhythms of occupation throughout the period of Roman influence in the region. Specific find categories, including terra sigillata, transport vessels, building materials, and coinage, were used to study temporal trends in interaction with and integration within Roman networks. By combining contextual interpretation with computational modelling, the paper demonstrates how mixed methods can bridge the gap between interpretive and descriptive scales in landscape archaeology. It situates the Kromme Rijn region within broader debates on the transformation of provincial societies before and during Roman impact, illustrating how regional datasets can reveal both lived experiences and structural processes and in the Roman empire.

Beyond the Middle Danube Limes: Structure and Dynamics of the Germanic Communities of the ‘Marcomannic’ Settlement Zone

Marek Vlach & Balázs Komoróczy

During the first four centuries CE, the territories north of the Middle Danube limes formed a dynamic contact zone between the Roman Empire and Germanic chiefdoms. Beyond a few episodes of armed conflict, most interactions were political and economic, with Roman diplomacy interfering into the internal developments among the Germanic polities. The recently completed MARCOMANNIA dataset—an extensive compilation of archaeological evidence from the so-called ‘Marcomannic’ settlement zone (present day Moravia, Lower Austrian and Slovakian Záhorie region)—offers a comprehensive basis for examining the patterns within this landscape. Residential areas, although structurally uniform and long regarded as offering limited potential for hierarchical differentiation, now provide a crucial dataset (1,101 records, 787 dated) for assessing demographic parameters and spatial dynamics. The presence of a local or regional elite stratum within the organisational structure has been inferred from scarce material culture or proximity to other archaeological features, predominantly funerary sites. Nevertheless, their analysis through network science and spatiotemporal modelling (‘time-cube’) reveals so-far hidden spatiotemporal patterns. Ultimately, the MARCOMANNIA dataset offers additional insights through quantitative perspectives on a distinctive subset of material culture—the Roman imports. Various categories and types of Roman-origin objects (over 4,000 records) within the Germanic context reflect multiple interactions. Their composition and quantity imply a role within the Germanic prestige goods economy, serving as a vital means within redistribution system and maintenance of power structures. Through this supplementary layer of archaeological data, emerging spatial patterns enable

reconstructions of the Germanic power landscape and highlight underlying temporal trends in power distribution. Eventually, these datasets demonstrate neither static nor peripheral properties of the focused Germanic settlement zone and the multifaceted drivers of internal development and external interactions with Roman domain.

The Landscape of a Civitas: Reframing the Meaning of Tribal Territory and Community Identity in East Kent

Lacey Wallace

Understanding the relationship between landscape and social identities in a Roman-period province requires an appreciation of how the area inhabited by a group ('civitas') was conceived, experienced, and bounded. In the ancient world, such limits are rarely clear. The most common approach centres areas as socially and economically tied to an urban centre, putting the emphasis on administration and urban networks. Yet, this 'hinterland' perspective imposes spatial logic that undermines how paths, roads, valleys, streams, and coastlines connected communities. Such top-down representations privilege administrative order over lived experiences.

Drawing on critical geography and theories of agency, this paper challenges Roman-centric assumptions about socio-spatial organization of provincial communities. With analysis of terrain, settlement patterning, and visibility in GIS, it will propose an alternative model of 'tribal territory' in east Kent structured not by urban and military networks, but by routes of movement through space—especially waterways—the importance of social memory, and views carefully designed for specific audiences.

By approaching the region as a multi-period palimpsest of meanings, continuously created and recreated through time, this study highlights the potential of landscape archaeology to analyse community identities. Through theory-driven analysis of a large dataset, it is possible to reframe the civitas in terms constructed and experienced by local people.

Micro and Macro-Scale Roman Settlement and Farming Patterns in Central-Southern England

Paul Chadwick

This paper will present the results of study of Roman rural settlement and farming at a variety of scales across several landscapes in Central-Southern England.

The study is based on a qualitative and quantitative assessment of a dataset compiled from the wealth of aerial photographic, field walking, field evaluation and recent excavation data available in local authority Historic Environment Records, supplemented by excavated site data compiled by 'The Rural Settlement of Roman Britain' project. Together these data enable an examination of rural settlement and farming at a scale hitherto not attempted in Britain, and suggest that previous estimates of rural settlement numbers should be increased four or five-fold in many areas of lowland England; some farmers could almost shout to their neighbours, elsewhere farming was an isolated activity.

Farming landscapes in the clay vales of Oxfordshire, the chalk downland of Berkshire and Wiltshire and the sandy heathland of Berkshire have been examined to establish farm density by soil type and combinations of soil types. The resulting hierarchy of preferred and less-favoured soils has been tested against animal bone assemblages, palaeoenvironmental data, field systems, corn driers and farm morphology to identify the balance of farming conducted.

The results reveal a complex mosaic of agricultural activity, in places with an emphasis on stock rearing, other areas specialising in intensive cereal cultivation, and elsewhere a mixed stock and arable regime. The emerging mosaic of rural settlement patterns and farming regimes creates an opportunity for more detailed estimates of the rural population across the Province. Similarly, with the countryside of lowland England seen as a patchwork of relatively small-scale, interrelated farming regimes, more nuanced models of agricultural productivity, military supply logistics and the mechanisms of urban food supply become possible.

Monastic Networks: Exploring Regional Dynamics and Connectivity in Late Antique Egypt

Ariadna Guimerà & Pau de Soto

The expansion of monasticism in Late Antique Egypt (3rd-7th centuries CE) has long been interpreted through hagiographic traditions that emphasize isolation, eremitism, and withdrawal from urban life. However, our new and unpublished archaeological surveys at Sharuna/Kom el-Ahmar (Middle Egypt) and at the Thebaid (West Bank-Luxor), combined with advanced spatial analysis, challenge this narrative by revealing a more complex and interconnected landscape. Drawing on a comprehensive geodatabase of nearly 150 Christian buildings—including monasteries, laura, hermitages, and episcopal centers—this study integrates our own field prospections, together with archaeological, papyrological, and spatial evidence, to reassess the strategies behind the Christian occupation of the Egyptian landscape.

Our study demonstrates that the majority of monasteries were strategically located near Roman roads, Nile corridors, and desert oases, ensuring access to communication and trade networks. This positioning facilitated the circulation of people, goods, and ideas, while transforming monasteries into economic, logistical, and spiritual hubs. Far from being isolated retreats, communities such as Kellia, the Topos of Apa Phoibammon, and the Monastery of St. Anthony illustrate how Egyptian monasticism balanced ascetic ideals with pragmatic integration into broader settlement systems.

In addition, the systematic study of papyri sheds light on the monasteries' economic role, documenting their interactions with local coloni, land management strategies, and involvement in regional politics. Contracts, correspondence, and administrative texts reveal monasteries as active agents in agrarian production, dispute mediation, and territorial governance. When combined with connectivity metrics derived from Network Science, these sources highlight clusters of high centrality in regions such as the Thebaid, Oxyrhynchus, Sharuna, and the Red Sea corridors, underscoring the deliberate occupation strategy pursued by Christian communities.

Ultimately, this paper redefines Egyptian monasticism as an interconnected phenomenon embedded in the infrastructural, economic, and political frameworks of Late Antique Egypt. Monastic institutions emerge not as peripheral sanctuaries but as central actors shaping religious landscapes, sustaining economic systems, and fostering territorial cohesion across centuries.

RAC4: Food Trade and Transportation Networks in the Roman Empire

Session organisers: Jessica Feito, Alexandra Livarda, Andrew Mclean, James Page & Patricia Vandorpe

Trade and connectivity were major factors of the Roman economy. The relative peace and stability that the Empire brought increased connectivity, mobility and trade, and resulted in the introduction of new goods, food items inclusive. This was facilitated in large part by the establishment of new transport networks, through which the movement of people and the trade of new commodities was achieved.

Food-related remains have the potential to serve as excellent proxies for trade: not only is food crucial for survival, and thus necessarily acquired and consumed by all members of society, the production and distribution of food also held a central place in the ancient economy. A variety of evidence types are used to study food trade, each with advantages and disadvantages. Ceramic and amphorae remains are durable and can be found in large quantities, often with inscriptions providing insight into their trade. Bioarchaeological remains are useful as they have short life spans and so offer a rare glimpse into life at the moment of deposition.

The now widely recognized link between food and identity renders food-related remains particularly suited to studying the expression of regional identities in a changing world. Meanwhile, new approaches to mobility and networks provide a means with which to explore trade connections at a greater scale, resolution and nuance than ever before. In this way, the study of food trade in the Roman Empire can offer valuable new insight into the intricate relationships between culture contact, exchange, and the uptake of new consumption practices.

This session has papers focusing on the trade and transport of food in the ancient world using a variety of proxies and methods in order to create a rich forum of multidisciplinary discussions, including submissions featuring use of computational and bioarchaeological approaches to trade and mobility.

Amphorae and Consumption at Roman Nepi (Lazio, Italy)

Ulla Rajala & Philip Mills (†)

This article discusses the amphora finds collected during the Nepi Survey Project in 1999 and 2000. The Nepi Survey Project was one of the projects under the umbrella of the (Middle) Tiber Valley Project of the British School at Rome. The Nepi Survey Project was conducted under the directorship of Simon Stoddart with Dr Rajala as the field director; she was later the PI of the Romanisation of a Faliscan Town project, funded by the British Academy.

This material diverts from the usual chronological distribution in central Italy with very few early amphorae and the wide-spread spreading of North African amphorae. The local geographical distribution of the finds is discussed and compared to that of the South Etruria Survey. The finds are then considered in the light of the general drop in pottery numbers in the second and third centuries AD, different trade networks and food stuff distributed to this area.

Food Trade and Transportation Networks in Roman Dalmatia and Pannonia

Ivana Ožanić Roguljić

During the Roman period, Dalmatia and Pannonia were involved in the wider Mediterranean and Danubian food trade flows. The coastal cities of Dalmatia (e.g. Salona) had developed ports connected to Adriatic and Italic centres, from where products such as olive oil, wine and luxury goods were imported. At the same time, the interior of the provinces provided grain, livestock and timber, which were transported by river (Sava and Drava) towards the Danubian border and military camps.

In Pannonia, river routes played a significant role - especially the Danube as a key artery for supplying the army and cities - along with a network of local tributaries and road connections connecting the provincial centres. The exchange system was two-way: the coastal towns sent wine, oil and amphorae, while grain, meat and raw materials came from Pannonia and the hinterland. This trade in food and goods shaped the economic relations of the provinces and enabled a stable supply for the army and the urban population.

In this paper, we will present the ceramic material that bears witness to these connections between Roman Dalmatia and Pannonia. Analysis of the finds - primarily amphorae and tableware - shows the directions of movement of food and goods and reveals intensive contacts between coastal and inland provincial centres. Pottery is thus confirmed as a key indicator of the integration of these areas into wider networks of food and goods exchange.

Resilience of Long-Distance Distribution Networks in the Late Antique Levant (6th-8th Century AD): Two Amphorae LR5 from Mopsouestia in Cilicia

Paride Parravano

In the ancient world, sea transportation was the fastest and most economic mean to connect regionalised economies, overcoming the structural fragmentation of the Mediterranean ecologies (Horden, Purcell 2000; Shaw 2001). These maritime highways still were the unifying element of the Eastern Mediterranean during Late Antiquity: here, complex cultural and economic relationships linked Cilicia with the Levantine provinces.

Recent finds from Mopsouestia shed further light on this mechanism. Since 2012, the site has been the object of systematic stratigraphic excavation carried out by the Italian Archaeological Mission, directed by Anna Lucia D'Agata (CNR) and Giovanni Salmeri (University of Pisa), in collaboration with the Archaeological Museum of Adana and the Municipality of Yüreğir. These investigations have clarified the long history of the site, its strategic importance in micro- and macro-regional processes, and the role of material culture in the elaboration of original local traditions (D'Agata 2017; 2019a; 2019b; D'Agata et al. 2020; 2023; Salmeri 2020; 2024).

In particular, two fragmentary specimens of amphorae LR5 were recovered. Dated to the 6th and to the 7th centuries AD, they were made respectively in Palestina and Egypt and testify to the active role of long-distance wine trade in the period under examination (see Kingsley, Decker 2001; Pieri 2005). This paper tries to disentangle the causal factors that made this transport possible, the economic context of Late Antique Levant, the role of Mopsouestia in the global phenomena of the time and her capacity to collect foodstuff coming from the other side of the Eastern Mediterranean. So, a distributive network of Roman tradition, such as the one already presented, coexisted with the signals of a gradual regionalisation and ruralisation of the economic life, which would finally mark the transition to the Middle Ages. In short, this presentation will try to pinpoint the elements of the social and economic life of a city and its region in times of profound transformations.

From the Kiln to the Sea: Amphora Production and Trade at Apsaros

Marcin Matera, Radosław Karasiewicz-Szczygiorski & Natalia Lockley

Recent Polish-Georgian excavations at the Roman fort of Apsaros (modern Gonio, Georgia) have revealed the first archaeologically confirmed centre for the production of so-called Colchian amphorae. Five ceramic kilns have been investigated to date, several containing defective amphorae still in situ, and additional furnaces have been detected through magnetic prospection. Stratigraphic and architectural analyses place the main production phase in the late 1st and early 2nd centuries CE, between the short-lived Roman presence under Nero and the fort's reconstruction before Trajan's Parthian campaign.

The discovery of amphora kilns, nearby wine presses, and a natural lagoon harbour demonstrates that Apsaros functioned as an integrated centre of production, processing, and export of wine. Amphorae produced locally were likely used to supply Roman garrisons along the eastern Black Sea and the local Colchian elite, linking imperial trade networks with regional consumption.

These discoveries may help to reconsider the long-debated issue of the location of Colchian amphora production and offer new insights into the mechanisms of food trade within the Roman frontier economy. Apsaros appears to have played an important role within the network of exchange and cultural interaction between the Mediterranean world and the South Caucasus, suggesting that local resources and Roman logistical infrastructure may have jointly contributed to the development of an integrated trade system within the Roman Empire.

Feeding the Roman Army, Making the Empire: Food Supply on the Frontiers

Richard Madgwick & Peter Guest

It was a major logistical undertaking to supply Rome's soldiers on distant, environmentally diverse and often hostile frontiers with foodstuffs and other materials. Today we know little about how the imperial administration was able to do this so effectively over such a large area and for such a long time. This means that important questions about how the frontier armies were fed and supplied, and their impact on ecologically diverse frontier provinces, are poorly addressed. The economic role of frontiers has sometimes been neglected in favour of a focus on their role as militarised zones. However, frontier economies were undoubtedly vibrant and diverse and their effective functioning was essential to the maintenance of the army.

This paper introduces a new ERC-funded project on food supply to the European frontiers and presents preliminary data from Moesia superior, the first of the project's target regions. FRAME is taking a multi-proxy approach to the provisioning of the army, reconstructing diet, supply networks, food production and the impact on local landscapes and economies. The project focuses on animals, plants and ceramics, deploying a range of scientific methods, and explores how the challenges of provisioning were met in provinces from the Black Sea to Britain.

The Ancient Ports of Europe: Using Sedimentary Ancient DNA (sedaDNA) from Roman Port Harbour Sediments to Determine Imports, Exports and Local Resources.

Scarlett Zetter, Ben Pears, Kevin Walsh, Ferréol Salomon, Jean-Philippe Goiran & Antony Brown

Roman ports were the lifeblood of Roman societies, supplying food and commodities to their hinterlands and interconnecting the Roman world. While traditional approaches such as archaeology, texts, physical remains, and geochemistry have greatly advanced our understanding of port use, molecular data have yet to be used. This project is the first to apply sedimentary ancient DNA (sedaDNA) techniques to buried harbour sediments, providing an unprecedented opportunity to identify organic imported and exported items at high taxonomic resolution. These methods may allow us to reconstruct cargoes, locally consumed foods, and other economically significant materials, offering a unique window into international trade networks and local economies. Here, we present preliminary results from the port-canal of Spina and the harbours of Ostia and Portus. Our sedaDNA data reveal the presence of key cultivars, including olive (Oleaceae), grape (Vitaceae), cereals such as barley/rye (*Hordeinae*) and oat (*Avena*), as well as pulses and other crops such as pea (*Pisum*), lentil (*Lens*), opium/breadseed poppy (*Papaver somniferum*), and hemp (*Cannabis sativa*). Alongside these results we also detected a local plant community signal providing an insight into the ecosystems around the ports and how these changed over time. Together, these findings give us a sample of changing foodways and economic connections, forming the foundation for an expansion across more ports of northwestern Europe and the Mediterranean over the next three years.

Revisiting Parker's Shipwreck Graph: An Aoristic Calibration of Roman Foodstuff Trade Based on Volume Analysis and Amphora Contents

Joel Bellviure & Jeremy Green

Among all proxies used to scale the Roman economy, Parker's graph of ancient shipwrecks has been used to support the idea that sustained economic growth facilitated middle to long-distance trade across the Mediterranean. Not enough emphasis has been put on the fact that this corpus of data allows to directly study differences in the trade of several foodstuffs, chiefly wine, olive oil, and fish sauces. By introducing a new R code with integrated Monte Carlo simulation, several calibrations of Parker's graph are presented. A relational database allows for the combination of types with presumed content and average amphora capacities, measuring and comparing the total liquids carried. At the same time, charting chronologically artistic representations of barrels corrects a assumed catastrophic decline after the Trajanic era. Finally, a hypothetical analysis of costs is incorporated into the formula. The results show an underestimation of the importance of the olive oil trade during the Mid-Imperial period.

This same approach is extended to correct some popular graphs representing food and drink consumption across the Empire, namely Panella and Tchernia's seminal study on the arrival of foodstuff at Ostia. In order to contrast this with land evidence, I present a new aoristic analysis of the finds of the Ager Tarraconensis survey. Comparing the evolution of imports with exports by quantifying amphora workshops suggests a counterintuitive correlation between a peak in export-oriented production and imported liquid foodstuff. This is explained by suggesting that import substitution, though often framed as adverse to growth, implies double-sided growth and higher overall purchasing power. It also suggests that elastic foodstuffs such as wine, and not an inelastic good like grain, are better proxies to understand the Roman economy.

RAC6: At Empire's Edge: Rethinking the Limes of the Roman

Session organisers: Saskia Stevens, Dominik Maschek & Wouter Vos

The Limes, traditionally understood as the fortified borders of the Roman Empire, has long been studied as a static military boundary marking the limits of Roman control. Modern representations also tend to underscore these characteristics. Recent scholarship, however, has emphasized the complexity and diversity of these frontier zones, challenging earlier dichotomies of "civilized" Rome versus the "barbarian" other. This session critically reexamines the Limes as dynamic spaces of interaction, mobility, and transformation. From Hadrian's Wall in Britannia, via the Lower Germanic Limes on the Rhine, to the desert frontiers of the Near East and North Africa, the Roman borderlands were not merely lines of defense but vibrant arenas of cultural exchange, and economic activity.

In this session we explore the Limes through interdisciplinary approaches to shed light on the lived experiences of soldiers, civilians, and indigenous peoples navigating these Limes borderlands. We are also interested in contemporary representations and processes of heritagization of the Limes, as well as the border discourses and securitization policies that are articulated through these frameworks. By situating the Limes within broader debates about imperialism, identity, and the permeability of borders, this session seeks to reconceptualize the edges of empire not as endings, but as points of encounter and negotiation.

Topics focus on:

- **Borderland Communities:** The lives of soldiers, settlers, traders, and local populations in frontier zones.
- **Cultural Interaction and Exchange:** Hybridity, resistance, and acculturation in border regions.
- **Economic Networks:** Trade, taxation, and resource extraction along the Limes.
- **Symbolism and Ideology:** The Limes as a tool of propaganda and imperial identity.
- **Mobility and Movement:** Patterns of migration, diplomacy, and conflict across borders.
- **Comparative and Theoretical Approaches:** Using models from border studies, postcolonial theory, or global history to rethink ancient frontiers.
- **(Re)presenting the Limes:** heritagization and representation of the Limes in visual culture, education, and public history from antiquity to the present.

RAC6.1 What Happens in the Fort, Stays in the fort? Artefacts in Military Settlements as Proxies of Hybrid Agencies in Colonial Settings

From a Military Center through the Roman Colony to the Provincial Capital - Transformations of the Borderland Community of Ratiaria, Lower Danubian Limes

Zdravko Dimitrov

The Roman city of Ratiaria, located near Vidin, was one of the main centers of the Roman limes on Lower Danube. Over the past 15 years, very active excavations in the region have contributed to the acquisition of a number of new data on the society in this border area.

Regular and rescue surveys found settlements and camps in Sinagovtsi, Gramada, Ratiaria, Bononia. Two new villas of veterans who served in the legions of the Roman Empire were discovered. Two military diplomas provide additional data. Production centers, local settlements and three necropolises from this area were also studied.

Based on all this new archaeological data, we now have a completely new vision of the transformations, changes and development of the border society of Ratiaria. This information leads us to analyze and discuss the connections and mutual influences between local peasants, producers, traders, settlers and military units of the limes structure.

Previously, it was not possible to fully explore the development of colonial societies from the limes within the entire chronology from the 1st to the 6th century. The Italian settlers from Ratiaria, the owners of the villa farms and the administrators had a serious role in the transformation of society in this most heavily attacked and most defended area of the Danube limes.

Indeed, the example of Ratiaria is amazing and should be studied and discussed more often. On the one hand, based on new archaeological data, but also on the basis of historical premises - this is the only center in the lower Danube limes of the Roman Empire, which grew and developed from a military center, legionary camp through the stage of Roman colony to the capital of a province in late antiquity.

Mutual Adaptation in the Borderland: Case Study of a Chinese Silk from Roman Palmyra

Junjie Zhou

The caravan city of Palmyra in the first two centuries CE was not merely a borderland of the Roman Empire, but a hub of cultural interaction and exchange. Palmyra preserved nearly a hundred textiles of Chinese silk, one of the largest corpora ever survived from Antiquity. This paper presents a case study of one warp-faced compound tabby (锦 in Chinese) to illustrate the mutual adaptation between Palmyrene receivers and Chinese weavers of each other's material and visual culture. First, the paper introduces the geographic and historical background of Palmyra in the Roman era. Its critical position along the caravan routes promised its prosperity in the Syrian desert. The main part of this paper focuses on the "hybrid" pattern of one silk discovered in a tower tomb. After a briefing of its material properties and weaving structures which confirmed its provenance from China, it draws emphasis to the iconography of naked figures within vine scrolls inhabited by various animals. The paper argues that this pattern took inspiration from the classical "grape-picking Cupids" motif popular in the Eastern Mediterranean and Hellenistic Central Asia. Meanwhile, Chinese weavers accommodated the foreign motif with indigenous forms of mythical camels and felines. Together, they seemed to represent a picture of afterlife wonderland. Finally, through this case study the paper reflects on the changing methodologies to study ancient cultural contact, from "influence" to "hybridity" and lately "globalisation", as well as the debate regarding human and material agency.

Beach Archaeology, the Roman Coastal-Limes and the Classis-Castellum at Vrouwenpolder-Oranjezon (Zeeland, NL)

Joost van den Berg & Dianne van de Zande

The Roman coastal limes of Germania Inferior, located in the Rhine-, Meuse- and Scheldt-delta is poorly understood, as much of its fortified places, accompanying civil settlements, harbour structures and industrial sites are now lost or hidden under the sea. However, archaeological finds such as pottery and building material have been washing up on the shores of the southwestern Dutch province of Zeeland for years, indicating that the ancient coastal landscape is not entirely gone. Instead, the finds show tantalizing evidence for a vibrant delta, with occupation peaking in the later 2nd until the early 4th century, controlled by the Roman navy, but ultimately dominated by economic activities such as trade, maritime exploitation, and salt-industries.

The citizen science project 'Beach Archaeology', investigates a small stretch of this coastal limes, for now focusing on Vrouwenpolder-Oranjezon and the Banjaard Beach where finds indicate the presence of a site related to the Classis Germanica. As part of this project, archaeological professionals, volunteers, heritage and educational institutions, local authorities, students, and tourists collaborate to monitor the beaches, collect and register finds, and to investigate our Roman past together. Specialised research focuses on the pottery, building material, and the landscape. Together, the finds present a complex landscape of different material cultures.

This presentation will introduce the interdisciplinary approaches that are employed to investigate this lost Roman landscape and present the latest results, focusing not only on the study of material culture but exploring what this can say about Roman military behaviour in and experience of a landscape that was and still is dominated by the sea. It furthermore shows that while one part of the Empire may have crisis, other parts thrive. We will furthermore illustrate how these results and the ongoing discussions are used for the wider audience and play an active part in local heritage experience.

Costrels on the Walls, a Curiosity or a Legacy?

Cristina Crizbasan & Roderick C.A. Geerts

The Roman frontiers have been described as liminal spaces where people from various parts of the Empire came together, shared the same environment and left an imprint of their own origins, beliefs and traditions in the local objectscales. They came in contact with others and were even introduced to a new setting through the army. However, the Roman armies were in no way homogenous and the name of a unit did not necessarily imply that its members were of one specific ethnicity. This paper looks at the diversity of the soldiers on the northern limes in Britain, particularly on Antonine and Hadrian's Wall. Antoninus is known for his campaigns in North Africa and previous studies have already showed the likelihood of North African recruits arriving in Scotland in his time. The broader question this paper addresses revolves around one particular vessel, a costrel (type Gillam 21), identified at Corbridge dating to the Antonine period. This study will use the neighbouring site at Vindolanda to understand the movement of these soldiers and connect the dots between Antonine Wall's North African style vessels, as has been done previously with the Ebor ware. The costrel as a vessel form has strong connections to North Africa and Egypt. That raises some questions: Are these vessels the evidence of the soldiers from Antonine Wall moving south after this part of the limes was abandoned? How did the vessel arrive at Corbridge and are there any other sites to show similar ceramic material? Can a link be made through the costrel with African soldiers on the Wall?

Challenging Functional Labels of Space in the Fort of Bologna

Ştefania Dogărel

By comparing layout and material culture, this presentation goes beyond the rigours of military architecture and into the realities of life in the fort. The goal is to examine how a soldier's life is shaped by topographical, political, and military factors, as well as garrison rank, aiming to create a micro-level visualization of macro events. The focus is on the auxiliary fort of Bologna, an integral part of the north-west section of the Dacian limes. What makes it relevant for this research is the fort's strategic role, ensuring control throughout a century and a half of border zone, as well as its various particularities; among these, the most striking is its adaptability to both geographical and political needs of the Empire. The core instruments of this research are the small finds distribution patterns, to be analysed to see how different activities can be traced in different spaces at various moments in time. Applying this theme to the Dacian limes is long overdue and will enable an overarching look into life on the frontier alongside the British, Rhine, and Danube limites. Surpassing an architectural study, the presentation aims, therefore, to discern not changes in space, but in space use, and to create a functional fort plan.

Temples, Shrines, and Wells: Contextualizing Ritual Deposition in Sanctuaries along Hadrian's Wall Frontier

Yongqi Wang

This paper synthesizes and examines ritual depositions in temples, shrines, and well enclosures across the military vici along Hadrian's Wall, aiming to reassess the character and significance of religious activity in this northern frontier of Roman Britain. It first discusses the observed patterns of objects found in ritual contexts associated with these sanctuaries and considers how their placement may reflect different forms of ritual practice and access. At sites such as Vindolanda and Maryport, the predominance of offerings deposited outside temple structures suggests a controlled use of sacred space, possibly reflecting restricted access to interior areas or differentiated roles within ritual performance. In contrast, depositional patterns within the Mithraea indicate a more exclusive religious sphere, where the right to make offerings may have been limited to senior officers or higher-ranking initiates.

The paper further explores depositional behaviour in well enclosures, particularly focusing on the end-of-use phases, where structured deposits may represent acts of closure or transformation of sacred space. It also investigates the symbolic meanings of certain object types, including personal ornaments, human skulls, and military armaments, proposing that these were not random inclusions but deliberate acts charged with religious, social, or mnemonic value. Drawing on a range of theoretical perspectives, the study argues that such deposits reveal complex interactions between institutional regulation, group identity, and individual agency. By demonstrating how deposition patterns varied according to sanctuary type, practitioner, and social context, the paper challenges traditional interpretations that treat frontier ritual as uniform or derivative of central provincial models. Instead, it highlights the distinctive and dynamic nature of religious life along Hadrian's Wall, offering new insights into the negotiation of belief, authority, and identity at the edges of the Roman Empire.

Anatomies of Disrespect: Unconventional Treatment of the Dead in Sarmatian Graves beyond the Roman Frontier

Tamara Šarkić

During the Roman period, the frontier zone of the limes and the neighbouring Barbaricum formed a dynamic area of contact, exchange, and tension between the Roman Empire and the Sarmatian populations. These groups alternated between being Roman foederati and formidable opponents resisting Roman political and military control. Archaeological research within Sarmatian cemeteries beyond the frontier has revealed a phenomenon where all graves show clear evidence of reopening, disturbance, and post-burial interference during turbulent migrations and wartime. Human remains appear scattered or missing, while some graves are entirely emptied of both bodies and grave goods. The presence of “Roman artefacts” in some of these burials underscores the fluid sociopolitical affiliations that shaped Sarmatian identities along the frontier. Scholarly interpretations have traditionally polarised around two explanatory models: large-scale plundering events or ritualised behaviours involving the deliberate manipulation of the dead. However, the broader implications of these acts, their social meaning, embodied dimensions, and expressions of disrespect or symbolic violence remain largely unexamined. This paper integrates bioanthropological and archaeoethanatomical analyses to investigate the processes of grave reopening, postmortem body manipulation, and the turbation of the burial environment in Sarmatian contexts. By reconstructing the osteological and contextual evidence, the study seeks to illuminate how these frontier communities perceived and enacted the boundaries between the living and the dead. Situating these practices within a wider framework of embodiment, material engagement, and ritual performance, this paper highlights neglected dimensions of mortuary behaviour and contributes to understanding the sociological phenomenon of disrespect toward human remains in the lands beyond the Roman limes.

RAC6.2 The Roman Army and Frontier Population: Exploring the Multivalent Dynamics in Frontier Zones

Deceptive Lines. A Bird's Eye View of the Roman Empire's Limites and Borderlands

Erik Graafstal

The orderly lines of military installations along the fringes of the Roman world tend to conceal the complex stratification and zoning that characterised the Empire's borderlands. This brief overview begins by examining the role of rivers as logistical highways and operational axes. Concentrating the bulk of military forces along their banks, the Rhine and the Danube soon disrupted the usual patterns of military occupation, which were typically oriented towards the control of peoples and territories rather than fixed borders. By the late Flavian period, the dense deployments along the rivers may have provided a model for comparable land-based systems. Spatial analysis of artificial frontiers suggests that these were designed to provide an immediate response to a specific category of low- to medium-level threat, perceived as endemic in the northern regions. Yet this represents only one aspect of the Roman limites, whose functions were far more wide-ranging. This paper briefly considers the various activities of the Roman army beyond the imperial frontiers, as well as the extent of imperial power projected through them. At the same time, the internal functions of the frontier forces are easily overlooked: stabilising newly repopulated borderlands, performing a variety of administrative and economic tasks, and maintaining internal security. This paper offers a concise tour d'horizon of military arrangements along the Empire's periphery, and explores what these can reveal about Roman policies, priorities, and purposes.

The Implications of the Design of Hadrian's Wall

David J. Breeze

The design of Roman frontiers have the ability to indicate how the army saw its enemies. This can be readily perceived in the early years of the frontier in Noricum where the sector with no forts because of the terrain can be compared to the close chain of fort in the open landscape of the Tullnerfeld. On Hadrian's Wall the fundamental change of plan from a single, lightly-held line, perhaps best characterised as a passive frontier, was superseded by chain of forts placed astride the line and projecting Roman power northwards. In the third century, Roman power extended even further northwards and had a noticeable impact on the peoples living up to 150 km north of the northernmost outpost fort, visible, not least, in the settlement patterns.

Space: The Final Frontier. Exploring Frontier Formation in Spatial and Temporal Perspective

Jeroen van Zoolingen

"Thus time, and the measurement of time, will vary according to the circumstances of the measured, however objective he may be." These words by Reece in his paper 'Romanization: a point of view' (2002, 30) suggest a powerful, yet underexplored approach to understanding the dynamics of the Roman frontier through, what I would call, the 'temporal dimension'. From an imperialistic perspective, the Limes is regarded as a military and political construct of the Roman Empire. The short-term construct was not erected in an empty environment. The landscape in which it was formed already possessed a profound deep past. In order to comprehend this fundamental difference, the following question arises: in what manner do Roman imperial time (which was characterised by an emphasis on control, uniformity and the near future) and local time (which was shaped by centuries-old traditions, cycles and memories) relate to each other in the frontier zone? Focussing on the Lower Germanic Limes on the Rhine, this paper addresses both the short-term military/imperialist perspective, and the notion of cultural continuity, thereby establishing a conducive framework for research. The primary focus of this study is the diachronic continuity of prehistoric customs, norms and structures, and the manner in which these elements persisted and were embraced in Roman times, contributing to the formation of the Roman frontier.

Finding the Hibernian Shore: Rethinking the Limes with Strategic Theory

Al McCluskey

Traditional approaches in Roman Frontier Studies often focus on the more visible and more easily datable Roman material, corroborated by Latin texts. Consequently, the Indigenous people on the Frontiers frequently fall from view, with any agency they had in shaping the boundaries between themselves and the boundaries with Rome, absent from the debate. This paper proposes that alternative analytical techniques from the related academic discipline of Strategic/War Studies can help resolve this issue. Using the region around the Irish Sea in the Late and Roman Iron Age as a case-study, it will demonstrate how the distribution of various aspects of material culture - in this case personal adornment and foodway/feasting artefacts - can locate distinct social groups in Iron Age Central Britain and Ireland, indicate the boundary zones between them, and provide evidence for cross-boundary contact. This opens new perspectives in which we can begin to see how the Indigenous peoples created and operated connected networks across the Irish Sea and Central Britain to negotiate power long before Rome arrived. Furthermore, the persistent correlation of these Iron Age boundary zones with the subsequent distribution of Roman military and urban archaeology, highlights how these pre-existing Iron Age networks were central to the ebb and flow of Roman authority and the adaptation of the strategies used by Rome. Using Strategic Theory concepts to re-examine archaeological data enables us to acknowledge the agency of all actors on the Limes and overcome the biases of the evidence that survives. It will help us to hear 'both hands clapping'.

Rhine Frontier Ideology: How Militaria Distribution in the Lower Rhine Reveals Patron-Client Power Systems

Mir Kameron Kashani

There is a great deal to be learned regarding the formation of Roman frontiers within the Lower Rhine by investigating the distribution of militaria and changes to that distribution over time. The goal of my current research is to determine the ways ideology plays a role in the creation of socio-political and military networks within the province of Germania Inferior, dating from the 1st and 2nd centuries CE, particularly emphasizing the archaeological assemblages of the rural vicus, sanctuary sites, in addition to fortifications and later Rhine colonies. My argument for Rome's frontiers is that there needs to be more emphasis placed on how imperial Rome integrated and built systems of oppressive and exploitative power relationships with client tribes forced to resettle in previously depopulated zones. Of particular interest is how archaeological material from urban and rural settlements can highlight the penetration of patron-client systems of power, reflecting specific ideological and political goals of the Roman elite. Additionally, the distribution of militaria finds represents a way to track changes to policy impacting the material landscape of the colonized frontier. A significant question is how much of the distribution of militaria in the frontier is explained by veteran resettlement versus direct military interventions in tax collection and resource exploitation as part of a broader political economy? In the context of this conference's session on the politics of the German limes, this abstract argues that applications of imperial power and the relationships between patrons and clients cannot be divorced from the intersecting factors of identities acting upon the myriad inhabitants of the dynamic and ever-changing frontier landscape. The hope is to recenter the limes and their logistical networks as the central component of Roman state power, becoming actualized within a physical space and in the lives of human beings living under imperial yoke.

Getting Out of the Zone: Challenging the 'Military'/'Civil' Zone Dichotomy in Roman Britain

Edwin Wood

Roman Britain is usually divided into two zones, the 'military' zone, comprising the north and upland areas, and the 'civil' zone, predominantly the south and lowland regions. They are often conceptualised as operating semi-independently of one another, with little interaction between military and civilian spheres, especially once the frontiers become 'settled' in the early-mid second century. However, this division, has served more to insulate the modern scholar of Roman Britain from discussing the somewhat uncomfortable and, at times, unfashionable, topic of the army rather than actually to reflecting a real separation in the Roman period. It is evident from the distribution of militaria across the province that the army was present in force within the civil zone. It might also be argued that the army considered itself as a clearly defined, and socially superior group, to much of the civil population of the province. Borderlands theory goes some way to blurring the line between zones, however, this paper will argue that it is time to abandon the concept of zones altogether. The army considered the whole province to be within its sphere of influence and activity and prioritised its own needs, particularly for food supplies above all others. Discussions of Roman Britain and perhaps other provinces should therefore always consider the ever present spectre of the army, no matter how far the site might be from the traditional military zone.

Between Rome and Parthia: Frontier Dynamics, Settlements and Connectivity in Northern Mesopotamia (2nd-3rd c. CE)

Enrico Foietta

During the 2nd century CE and the first decade of the 3rd century CE, the frontier between the Roman and Parthian Empires in northern Mesopotamia was established between the Khabur, the Sinjar, and the Tigris to the north, and the middle course of the Euphrates to the west. As a matter of fact, however, the area corresponding to the Jazira between the Tigris and the Euphrates as far south as Tikrit—was politically and militarily controlled by the “buffer” Kingdom of Hatra, whose eponymous capital was located approximately 80 km from Mosul. This local kingdom played a crucial role in supporting the Parthian Empire against Rome in the struggle for control over these strategic territories, which were nevertheless highly complex from both environmental and social perspectives, as they effectively blocked the north-south invasion route toward the Parthian capitals of Ctesiphon and Seleucia on the Tigris.

The present paper, the outcome of a series of recent studies employing archaeological and epigraphic evidence from the Kingdom of Hatra, seeks to reassess not only the possible location and features of the frontier between the Roman Empire and the Kingdom of Hatra, but also to investigate, from a comparative perspective, the similarities and differences in settlement patterns within these regions. Furthermore, it aims to evaluate—through the integration of archaeological data, textual sources, and epigraphic evidence—the route communication networks linking the two entities under consideration. A comparative and integrated approach, which systematically organizes and combines the available data, proves essential. The traditional separation between studies on the Roman Empire and those on the Parthian Empire and its allies has frequently produced partial interpretations, placing emphasis on contrasts in the military, political, and economic management of territory, while failing to highlight potential points of convergence.

Writing the Saharan Edge of Empire: Late Antique Narratives of 'Barbarians' and Socio-Political Change in the Oases of Egypt's Western Desert

Nicoletta De Troia

The oases of Egypt's Western Desert—from north to south, Siwa, Farafra, Bahariya, Dakhla, Kharga—defined the Empire's frontier along the Libyan Sahara and constituted the westernmost Egyptian administrative districts from the foundation of the Augustan Provincia Aegypti to the end of Byzantine rule. Inhabited by settled communities, the oases were also frequented by nomadic tribes who navigated the area and interacted with the oases' settlers. These nomadic groups left indirect traces in the textual production and material culture of the oases' inhabitants, as well as in literary sources that mention Egypt's oases. During Late Antiquity, Egypt's oases underwent wide-ranging historical changes. The late third-century imperial efforts to consolidate the frontier gave way to increasing political marginalisation from the fifth century onward. A general process of aridification occurred, and many settlements were gradually abandoned. Nevertheless, small Christian and Manichaean communities persisted in Egypt's oases. Archaeological evidence reveals no signs of violence or large-scale attacks. In contrast, from the fifth century onward, literary narratives portray the region as threatened by “barbarian” marauders from the Libyan Desert.

Despite acknowledging that the Empire's frontiers were far more than barriers against 'barbarians', much research on Egypt's oases has traditionally focused on military aspects -largely because of the

late Roman forts and fortified-looking settlements discovered in Egypt's Western Desert. However, a growing interest in the interactions between the oases' settlers and the nomadic groups has begun to challenge these traditional views.

Following this approach, my paper reassesses how Egypt's oases were represented in Late Antiquity. By contextualising the late antique narratives on the Libyan marauders and the recurring topoi of the barbarian within their historical settings, this paper explores Egypt's oases as both a lived and imagined frontier, where shifting representations of barbarians mirror broader socio-political transformations at the Saharan edge of the Empire.

Animal Supply to the Frontiers in Roman Britain: Exploring Connectivities on the Limes

Peter Guest & Richard Madgwick

This paper presents the results of the recently-completed "Feeding the Roman Army in Britain" project (FRAB), which sought to identify the provisioning strategies and logistical networks that supplied animals to soldiers in their forts and fortresses on Roman Britain's frontiers (south Wales, Hadrian's Wall and the Antonine Wall). FRAB concentrated on the main species of domesticated animals - cattle, sheep / goats (caprines) and pigs - that were the primary sources of meat in the military diet, but which also provided supplementary foodstuffs as well as other important resources like leather and wool.

Remains of over 450 animals from 15 sites in the three frontier regions were analysed using four stable isotope proxies, each with a specific role in investigating animal origins and mobility, as well as the husbandry and landscape management strategies that fed the Roman army's appetite for animals and animal products. Rural settlements were also included in the project's analytical programme in order to expand the exploration of networks of animal movement to include potential 'producer' sites. FRAB produced the largest multi-isotope dataset using four systems in archaeological research to date, which has generated a more sophisticated understanding of the British Limes as economic as well as militarised zones.

Trade in the North African Frontier Zones: The Transformative Potential of Rural Periodic Markets

Rosemary Morgan

The scholarship on periodic markets has predominantly concentrated on the Italian mainland. On the other hand, studies of North Africa's periodic markets have relied heavily on limited inscriptional evidence pertaining to the private 'domanial' markets of north-central Numidia. Landmark studies of north African periodic markets are now thirty to forty years old. The ephemerality of rural periodic markets makes locating them challenging though not impossible. This paper seeks to expand the research horizon by proposing potential sites for rural periodic markets in the frontier zones. Whereas Roman Africa's frontier zones have long attracted a scholarly focus on military occupation, they also provide a rich source of information relating to the economic, social and cultural interactions between civilian and military populations through the medium of local trade. Focusing on diverse locations across the frontier zones of Numidia, Africa Proconsularis and Tripolitania, this exploration aims to bring a greater sense of cohesion and chronology to the study of military and civilian settlement and interaction. The paper considers the topographic, climatic and hydrological conditions fundamental to sustenance of rural frontier populations, civilian and military, and the operation of market exchange. Advocating a mediatory role for periodic markets in economic and social integration, it challenges the view that productivity and trade only began with Roman occupation in a zone believed to be characterised by conflict and segregation.

Jewels from the Limes: Control and Organization of the Smaragdos Emerald Mines (Egyptian Eastern Desert) during the Early Roman Period

Joan Oller Guzmán

Emeralds were one of the most valued precious stones in Antiquity. Although several extraction sources were known during the Roman period, the Smaragdos was likely the most relevant one. Located in the Egyptian Eastern Desert, close to the Red Sea and in the bordering region with Nubia, the interest in emeralds provoked the creation of a large mining landscape that transformed a hostile territory into an economic hub with an important presence of human communities. This presentation will focus on the results of the 2023-2026 seasons of the Sikait Project in the Wadi Sikait region, especially during the Roman period (1st c.BC-2nd c.AD). The archaeological and epigraphic information recovered from these seasons has allowed us to visualize an intensive intervention of the Roman state in this area to extract and export its mineral resources, especially green beryl. This investment was channeled through the involvement of the Roman army, with several units being documented not only in the main settlements but also directly participating in the mining activities. We will approach this participation through three main aspects. First, mining logistics, involving the direct transformation of the landscape to allow the movement of people and goods (roads, cairns, wells, ramps, etc.). Second, the emerald

mines. So far, over 500 ancient mines have been identified in this region. We will see how we can trace the presence of the Roman army in several of these underground mining operations and its relationship with the local communities and civilian groups. Third, we will analyze the religious dimension of this intervention, focusing on the documentation and excavation of different cultic spaces such as shrines, altars, and temples. Altogether, these three aspects will offer an overview of the current knowledge regarding the mining communities that lived and worked in the southern Egyptian limes under the Roman dominion.

RAC6.3 At Empire's Edge: Rethinking the Limes of the Roman Empire

The Duality of Contact and Conflict in the Borderlands of Roman Britain

Andrew Gardner

As in many other fields, scholarship on the Roman frontiers has tended to follow a pattern of pendulum swings between different visions of the subject. Traditional interpretations which emphasized the defensive role of the military on the borders of the Empire were fuelled by early research into the architecture of forts and other installations. From the 1970s, more zonal and social interpretations of the complexity of the frontiers grew in prominence, as evidence of the lifestyles of frontier communities accumulated, and understanding of exchange across the limes grew. More recently, with new research on the infrastructure and landscape context of Hadrian's Wall, for example, the defensive interpretation has returned to the fore. In this paper, I want to explore the likelihood that, in the everyday life of people on the frontiers of Roman Britain, these forces of conflict and contact were a constant duality that shaped the experience of borderland communities. The study of modern borders, which is now a well-developed interdisciplinary field, shows us that this is generally the case with even quite prominent and heavily policed or defended boundaries today. Comparative study of the three different frontier zones in Roman Britain, itself a microcosm of the Empire as a whole, demonstrates that, in the Roman period too, borderlands were places of paradox, with competing forces shaping different kinds of relationships across the limes in a continuous dialogue. This process had major consequences both for the Empire and its neighbours.

Along Rather than Across - Lateral Thinking of Roman Frontiers

Christoph Rummel

Early scholarship of the edge of the Roman Empire tended to see Roman Frontiers as military defined and facing an unknown entity - whether in the sense of a static line or a more fuzzy imperium sine fines that marked the transition into an "other". In latter half of the 20th century the primary view changed to one looking at both sides of a dividing line - seen variously as exclusive, fortified and military, porous, administrative and designed to channel traffic or merely as a physical marker of ambition of power - depending on region studied and the person doing the studying. The vast complexity of frontiers, and the Roman ones in particular, gained more and more traction in the early 21st century studies - yet even current buzzwords such as "interaction", "cultural contact and exchange" and "mobility" are still mainly framed within a general assumption of movement across the defining markers of the edge of Empire. This paper collates and highlights instances where movement can be identified along Roman Frontiers, which followed the key rivers of mainland Europe and - wherever they were land-based - had roads as defining features. Goods, humans, but also concepts and ideas freely moved along the edge of Empire, often not touching on the central regions of the Roman World, or only reaching these at a latter stage. Building on past studies of potential functions and roles of frontiers and question of what makes a "good" frontier, it argues that a core element of Roman state infrastructure along the edge of Empire actually served to maintain a corridor of transport and communication along the frontier that significantly contributed to the borderlands' economic potential and role as a zone of cultural exchange - not just between the "within" and the "without", but crucially also between different parts of the Roman world.

The Limes Germanicus as a Main Attraction?

Sven-Philipp Brandt

Borders, especially fortified borders, are primarily perceived by people as something divisive, since their basic function is to act as a barrier. Nevertheless it is often observed that borders also act as points of attraction. This refers to the border and its crossing points themselves, where people often gather and offer services to those passing through. Furthermore a border or the area behind it acts as a kind of place of longing, which, due to contrasts with one's own living environment.

With regard to the Limes these phenomena can also be observed to some extent. Tacitus, for example reports on the Germanic tribes and their customs, which he claims exemplify a purity of morals in contrast to Roman culture (Tac. Ger. 19; 37). Likewise the Celtic tribes beyond the Limes had a diverse

interest in the areas on the other side, which led to frequent raids, but at the same time also to an interest in settling in the supposedly more cultivated area behind the Limes and following the Roman authorities. In earlier times, examples include the Treveri (Caes. Gall. 2,4,1), in later times groups such as the Visigoths.

However, in addition to these large groups, individuals can be reconstructed from various sources, which perceived the Limes not as a dividing line, but as an attractive object. They show that the Limes was also a centre of attraction in the period between the above-mentioned developments. This can be observed especially in Germania Inferior, where, in addition to finds from private spaces such as ceramics, fibulas or tools, house construction and settlement structures often suggest a Germanic influence on individuals. In comparison, these traces are much less common in Germania Superior. The lecture therefore aims to examine whether the border region on the Upper German Limes actually exerted less attraction on contemporaries or whether topographical features may also have influenced the density of finds.

Mad, Bad, and Dangerous to Know? Mental Health and Roman Veterans in Frontier Communities

Jo Ball

In recent decades, ancient scholarship has begun to explore the lived experience of Greek and Roman soldiers, inspired by 'face of battle' studies which put ordinary military personnel at the centre of studies. As part of this, the mental health of soldiers serving in the Roman army has been subjected to academic focus. While it is difficult to reliably diagnose any medical conditions in antiquity - physical or psychological - there is increasing evidence that Roman soldiers developed mental health issues as a result of their service. This is a relatively new area of historical research for antiquity, and the focus thus far has typically been on the occurrence of Post-Traumatic Stress Disorder (PTSD) and combat trauma in the ancient military. In addition, more recent research has begun to consider the presence of neurological damage among Roman soldiers, who were especially vulnerable due to their relatively young enlistment ages, intensive training, and long military careers of more than two decades.

Such conditions would have affected some soldiers while still in service - as demonstrated by reference to trauma-related suicide among serving Roman personnel in legal texts - but would have developed into an even greater issue among retired veterans. Most of these individuals stayed in their provinces of service, many in the civilian settlements surrounding military installations - potentially leading to these communities experiencing far higher levels of mental health issues than their non-veteran counterparts. This paper explores some of the psychological conditions that Roman veterans would have been vulnerable to, how and considers both why they may have contributed to veteran decisions to stay in the militarised provincial settlements, and the implications for the communities in which they settled after their service.

Rome from the Sea: Roman Maritime Frontiers and the Topography of Imperial Power

Paul Kitching

Roman frontiers have traditionally been conceptualised as militarised lines cutting across the landscape to enclose and protect provincial populations and to exclude 'barbarians' beyond. They are therefore seen as fundamentally terrestrial in location and function, even when constructed in the littoral zone. The historiographic origins of this perspective can be traced back to classical writers themselves but arguably became entrenched in the early foundation of Roman archaeology in the nineteenth century. Since then the forts, towers, and other built monuments comprising the maritime frontiers of the Roman Empire have variously been interpreted as defences against invasion, security measures against raiding and piracy, or economic systems for the control of commodities and trade. These interpretations are not necessarily incorrect, but they are partial and both temporally and geographically static.

The terrestrial mindset in traditional approaches to Roman frontier studies undervalues the broader potential of coastal frontier works. A case study of coastal infrastructure from Roman Britain illustrates both the impact of land-centrism on interpretation and the potential for new insights when the archaeological evidence is re-examined within a maritime context. The benefits of a maritime perspective, looking not from the land-out but from the sea-in, has been demonstrated in prehistoric archaeology and is increasingly being applied to the classical world too. The interface between land and sea is a dynamic space and military architecture built here, simultaneously a practical construction and a tool of propaganda, can have a profound effect on maritime mobility and movement. In this way, coastal infrastructure and maritime activity combine with natural topography, weather and tides to enforce a new social reality and perpetuate imperial power far beyond the shore.

The Lower Rhine as a (Non-)Frontier in the Augustan Period

Jared Kreiner

When one typically thinks of the Lower Rhine Limes, it is the developed frontiers of the High Empire. While this period is eminently fascinating, the Rhine's shifting role as a (non-)liminal space during Augustus' efforts to conquer and incorporate Germania Magna presents an interesting case study in how rivers could simultaneously divide and unite peoples and states. In my paper, I contend a key reason for Augustus' invasion of Germania Magna was that ethnic and cultural groups were divided by an artificial Roman fluvial boundary. In preceding decades, Roman legates were forced to operate beyond the Rhine in retaliatory campaigns in addition to stopping frequent invasions by peoples often invited by or in conjunction with populations under Roman hegemony. Here, compared to portions of the Upper and Middle Rhine where the Rhine Valley Gorge and mountainous landscapes could effectively serve as physical barriers (frontiers), the Lower Rhine posed no serious challenges to crossings, thus limiting its serviceability as a river frontier. I also maintain that as Rome operated beyond the Rhine, the river ceased to serve as a frontier and became a key communication and supply corridor for garrisons and operations for roughly twenty-five years. Furthermore, whether one believes that a province of Germania Magna existed in that time or was intended to become one, it would have encompassed both sides of at least the Lower Rhine. With Tacitus' account of the Varian Disaster (Ann. 1.57), the location of the (intended) province's imperial cult was Ara Ubiorum. This suggests that the Rhine would not have been the border between Gaul and Germania, rather Roman ethnic constructions of Gallic and Germanic communities seem to have shaped the probable limits. I conclude that ethnographic constructions by Julius Caesar, parallel to geopolitical and ideological considerations, shaped the contours of this northern limes.

The Agency of Rivers along the Roman Frontier

Brian Buchanan & Emily Hanscam

While walls, forts, roads and other aspects of the built environment have long dominated discussions of Roman borders, we argue that rivers in the frontier were not simply natural boundaries or logistical routes—they were active material agents in the production of imperial frontier space. This presentation discusses how materiality theory can be used to investigate the role of rivers in the formation and articulation of Roman frontier landscapes, with a comparative focus on two distinct regions: along Hadrian's Wall and in the Lower Danube frontier.

Integrating archaeological evidence, spatial analysis, and theoretical approaches to landscape and materiality, the paper examines the ways in which the inherent properties of rivers—such as fluidity, temporality, and visual prominence—influenced the spatial organization, operational logic, and experiential dimensions of the Roman borderscapes. These waterscapes shaped the positioning and function of military infrastructure, structured patterns of mobility and control, and mediated interactions between individuals. Rather than being passive features, waterscapes emerged as central to the sensory and affective experience of frontier life.

Through a comparative analysis of the Lower Danube and northern Britannia, the study highlights both convergent and divergent modes of Roman engagement with fluvial landscapes. On the Danube, the river operated as a visibly linear frontier requiring substantial infrastructural and symbolic articulation to regulate crossing and containment. In contrast, in northern Britain, riverine features were more subtly embedded within the broader frontier system, informing the siting of installations and shaping perceptions of territoriality.

By foregrounding the material agency of rivers, this research challenges conceptions of the limes, proposing instead a more dynamic understanding of frontier-making as an interplay among people, materials, and environments. Rivers, it is argued, should be recognized not only as strategic assets but also as co-constitutive elements in the construction of imperial territoriality.

The Limes Project in Algeria: Knowledge, Protection and Valorisation

Jacopo Turchetto, Paola Zanovello & Andrea Meleri

In the Roman Empire, the limes represented a vast and complex frontier system – a long and often mobile boundary between territories under direct Roman control and those connected to it only indirectly, mainly through trade. As widely recognised today, the limes was not a rigid defensive wall but rather a permeable zone: a transitional landscape that, while serving military and administrative purposes, also facilitated social, cultural, and religious exchanges between different peoples.

The morphology of this frontier varied greatly across the provinces of the Empire: from the long, continuous stone barriers of the British Walls, to the discontinuous wooden and earthen systems along the Rhine-Danube frontier, and to the more articulated networks of fossata, walls, towers, and fortified castra in the arid regions of the East and South.

In these semi-desert areas, both satellite imagery and historical aerial photography allow for remarkably precise identification of ancient frontier lines. A significant case study comes from recent research conducted in Algeria, in the territory of ancient Numidia, by the University of Padova. Remote-sensing analyses combined with targeted field surveys have revealed, across the transitional zone between the Aurès Mountains and the Ziban region – both well known from ancient literary sources – a remarkable density of structures related to the *limes Numidicus*: features still clearly visible from above but increasingly difficult to recognise on the ground, even in undisturbed contexts.

In Algeria, the systematic protection of the country's immense archaeological heritage has only recently begun. While major monuments and settlements of Numidian and Roman times are gradually being included in the national register of protected cultural assets maintained by the Algerian Ministry of Culture, the identification – and therefore preservation – of less visible remains still poses serious challenges. Many of these structures risk unintentional destruction, especially where they are barely perceptible to the untrained eye. The key question, therefore, is how to make this almost invisible heritage both visible and intelligible, even through small-scale actions of protection and enhancement. Extensive palm groves, urban expansion, and infrastructure development are now threatening areas that, until only a few decades ago, remained almost intact. The first, and perhaps most difficult, step towards preservation is thus to render this fragile and elusive frontier visible once more – making tangible, across hundreds of kilometres, the ideal outline of the immense territory once controlled by Rome.

Life in the Frontier Communities of Dacia - Challenges, Disruptions, and Contradictory Experiences

Monica Gui

A great number of Roman settlements in Dacia, be they urban or rural, developed in direct relation to an auxiliary fort or legionary fortress. Despite their paramount importance for the provincial construction, these settlements have received disproportionately low attention when compared to the military installations they associated with. The view we have of them, derived from limited research, is usually rather static and disconnected from the history of the fortifications.

Yet, military decisions deeply affected the establishment and trajectories of these settlements, determining a favourable or, conversely, challenging location, facilitating or denying access to resources and wider connectivity. Moreover, the military history of Dacia is marked by troop transfers, as well as by the gradual build-up of powerful garrisons in various hot spots along the border. All these movements within a relatively short time interval certainly entailed the relocation of civilians as well, affecting rather suddenly and possibly dramatically the population of a settlement in terms of demography, social fabric and clash of cultures.

Such disruptions and challenges may not be easily grasped from archaeological evidence, especially given the limited scope of research and fairly poor data resolution achieved so far. These aspects, however, should be integrated into site narratives, alongside the more formal approaches. Viewing the civilian settlements through their environmental setting and dynamic relation with the military bases they depended on has the potential to not only throw further light on their development, but also to deepen our understanding of the lived experience of frontier communities along the Dacian *limes*.

Negotiating the Divine at Empire's Edge: Religious Adaptation and Cultural Exchange along Hadrian's Wall

Rita Sassu

This paper reinterprets Hadrian's Wall as a frontier landscape of religious interaction, where divine imagery carved on votive reliefs from settlements along the Wall reveals how frontier populations redefined their beliefs and ritual practices within a dynamic cultural environment. Between the second and fourth centuries A.D., official cults, popular devotions, and local traditions intertwined, giving visual form to the complex identities of soldiers, settlers, and indigenous communities.

The iconography of the reliefs combines imperial deities such as Jupiter, Mars, and Minerva with regional figures including Cocidius, the Horned God, the Mother Goddesses, and the *Genii Cucullati*. These depictions reflect ongoing processes of cultural interaction, hybridity, and acculturation that shaped life at the northern frontier. They also responded to the diverse needs of the frontier people, such as protection, fertility, prosperity, and well-being, translating local concerns into a shared symbolic language rooted in Roman imagery. The *Genii Cucullati*, for instance, embody notions of fertility and protection, while the Mother Goddesses express both communal and individual aspirations for abundance and safety.

Through an integrated analysis of iconography and epigraphy, the paper argues that Hadrian's Wall was not a rigid boundary but a permeable zone of negotiation and transformation. The creative reinterpretation of divine forms illustrates how religious adaptation and artistic flexibility allowed frontier

communities to sustain meaningful connections with Roman tradition while articulating distinctive local identities within a multicultural imperial framework.

Shared Spaces but Different Views? Perceptions of Landscape and Agriculture in the Frontier Zone of Northern Britannia

Sue Stallibrass

Indigenous locals, immigrant settlers and military occupants all lived and worked in the extensive frontier zone of northern Britannia. But their interactions with the landscape and its inhabitants were very different, ranging from the deep intimacy of a rural farming family with a small area of agricultural land, their domestic livestock and local wild resources, to long distance travel and supply chains within and beyond the frontier landscape zone for the military organisations. Personal interactions between locals and military personnel may have happened mainly in the settlements outside of the forts and the few roadside settlements and small towns. Given these rather different lifestyles, were there also different 'world views' concerning the roles and significance of animals? Farmers' lives would have been linked long-term with seasonal and annual cycles of birth, growth and death of plants and animals, and individual domestic livestock could be part of their daily lives for many years. For soldiers, animals would have been commodities required in desired numbers at predictable times (usually dead and butchered), and most soldiers on active service had very little knowledge of any individual animal during its life (even if they had grown up in a rural situation before joining the army).

This holistic paper considers a range of types of evidence and ways of thinking to discuss how individual domestic livestock related to people's daily lives, kinship groups, economies and philosophical world views.

It considers data from ethnographic studies, behavioural science, and economic and political history to argue that rural communities recognised multi-species identities, whilst military organisations had very different views regarding domestic livestock.

It suggests how material evidence from archaeozoology, landscape archaeology, settlement structures, geoarchaeology and biomolecular studies can be used to investigate this hypothesis.

The 'Whitening' of Hadrian's Wall

Richard Hingley

This paper explores the way that images of Britain's most prominent Roman monument became 'whitened' during the twentieth century (cf. Joseph 2020). Victorian antiquaries were aware that the garrisons of the Wall included soldiers from the southern and eastern Mediterranean, as represented in artworks and texts. During the twentieth century, however, dark skinned soldiers were rarely represented in the increasingly popular visual reconstructions of Hadrian's Wall. The whitening of the Wall continues in heritage marketing today. Roman re-enactors form a substantial community that plays a significant role in drawing members of the public to heritage attractions along the limes, including Hadrian's Wall. Despite a concerted attempt to communicate the presence of Africans in Roman Britain by the BBC during the last decades, public re-enactments of military life rarely communicate the cultural diversity of Roman military garrisons (Robertson 2022, 130). How might future heritage initiatives help better communicate to the public the diversity of ancient frontier communities? In 2015, English Heritage brought the Italian re-enactment group Legio I Italica to fight 50 Caledonian 'barbarians' on Hadrian's Wall. Where might the funds be found to run a new initiative to re-enact the cultural diversity of the Roman military community along the limes? In the current political climate, is it even likely that heritage agencies would take the risk?

Decolonising the Villa: Banal Colonialism in the Northern Limes Borderlands

Gertjan Plets & Koen Vacano

Over recent years, the expansion of the World Heritage nomination has brought greater societal attention to the Roman Limes and Roman heritage, especially in the northern Limes countries such as Germany, the Netherlands, and the United Kingdom. Significant investments in museums, reconstructions, and interventions in these countries have increased the visibility of Roman archaeological sites. However, these heritage displays often reflect a particular narrative of Roman history that may overlook or omit darker aspects, raising questions about their representation of the past and their connection to contemporary issues.

This paper critically examines how Roman heritage, particularly at borderland sites, addresses themes like slavery and environmental exploitation—key elements of Roman imperialism. Drawing on critical ancient world studies and postcolonial theory, especially Walter Dignolo's ideas, the analysis explores whether these narratives acknowledge or silence the colonial and ecological costs of Roman expansion. Given that environmental change and decolonisation are pressing societal concerns today, understanding how they are portrayed in Roman heritage becomes increasingly relevant.

Focusing on villa complexes in Germany, the Netherlands, and the UK, the study utilises museological and critical heritage analysis to reveal how issues like slavery and resource extraction are discourses. Despite a shift away from promoting colonialism, many sites still inadvertently reflect colonial legacies through silences about enslaved labour and land exploitation. The enduring idealisation of Roman elite culture—emphasising the civilising role of classical civilisation and its harmonious ideals—also obscures the darker realities of imperialism.

Overall, while Roman heritage sites celebrate achievements and cultural brilliance, they often gloss over the imperial violence and ecological degradation that underpinned Roman prosperity. Recognising and addressing these silences could foster a more nuanced understanding of Roman history that resonates with today's societal debates on colonialism and environmental sustainability.

The New Shock of the View: Art as a Disruptor of the Imperial Gaze on Hadrian's Wall

Andrew Roberts

This case study details how a creative response to Roman archaeology disrupted the traditional narratives of the Limes over as told through site interpretation. In the Summer of 2022, English Heritage hosted a community art installation at Housesteads Roman Fort; it took the form of an imaginative Roman gatehouse, entitled *The Future Belongs To What Was As Much As What Is (2022)*. The process of creation and broad audience response to the installation were reported on in RAC 2024 (*As The Shock of the View*); this paper presents a detailed review of a subset of audience evaluations to show that the installation worked as a 'controlled anachronism' (Loraux, N. 1993), disrupting the site's narrative in the minds of some visitors.

First, the installation of a gatehouse, which overtly harnessed the input contemporary community, specifically changed the narrative emphasis of Hadrian's Wall from a defensive barrier to place of intersection, community and the lived experience of the garrison. Second, the use of modern colour and contemporary words on the installation visitors with a 'lost' aspect of Hadrian's Wall - its invasive presence in the landscape as an instrument of imperial dominance. Finally, the post-modern aesthetics upset a large subset of the visitors, who expected a monochromatic ruin-scape, a view of archaeology routed in 19th century imperialism and antiquarianism. This paper will posit that creative responses can temporarily restore Limes sites as places where the meaning of the Wall can be renegotiated, and offer thoughts for the possibilities for future installations.

RAC8: Beyond the Quay: Urban Infrastructure and the Gateway Function of Roman Harbour Cities

Session organisers: Maurice Thurn, Alexander Clemens Reich & Ada Lasheras

Harbour cities played a crucial role in the Roman Empire as key nodes of trade, supply, and mobility. Functioning as gateways between sea and land, they merit particular attention. However, this gateway function cannot be fully understood by examining harbour structures alone – such as piers, quays, or breakwaters – but must be traced deep into the urban fabric of the cities themselves.

Recent research on ancient harbours has revealed a highly heterogeneous picture of harbour cities. Despite this diversity, their shared role as points of transshipment for goods and people remains constant. This raises important questions about the infrastructural solutions developed to meet these logistical demands. Where and to what extent infrastructure existed, how it was configured, and how it facilitated the movement and handling of goods and people within the urban space are far from self-evident. Where did ships dock? Where were goods unloaded, stored, or processed? How were production centers, warehouses, and distribution facilities spatially organized within the city? And how did transport to and from the quayside function?

This session seeks to explore the infrastructure of Roman harbour cities beyond the immediate harbour installations and to examine the broader systems that enabled these cities to act as effective gateways between maritime and inland networks. Papers present current research on Roman harbour cities, with a particular focus on infrastructure.

Papers address questions such as:

- What does the term “infrastructure” entail in the context of a Roman harbour city?

- How was infrastructure organized within the urban landscape?
- How was the harbour connected to the hinterland – and vice versa?
- Did harbour cities follow specific spatial or functional models? Is there evidence for infrastructural specialization based on the type of goods handled?

Beyond the Riverbank: The Port Infrastructure of Trans Tiberim in Rome

Antonio López García

The Trans Tiberim district (Regio XIV), located on the west bank of the Tiber, offers a unique perspective on the infrastructural complexity of Rome as a harbour city. Far from being limited to quays and docks, the area integrated a dense network of warehouses, workshops, and roads that linked the riverfront to the city's hinterland. The Via Campana/Portuensis provided direct access to Portus, while river traffic ensured the steady flow of goods into Rome. Archaeological, topographic, and textual evidence reveal a highly specialized urban landscape, with productive installations such as the Janiculum mills powered by aqueducts, storage complexes along the river bend, and street networks adapted to the circulation of bulk goods.

In Late Antiquity, shifting trade flows, repeated floods, and the construction of the Aurelian Wall reshaped this infrastructure, altering connectivity and contributing to new spatial configurations. Even as long-distance supply systems faltered after the Gothic Wars, the port quarter adapted, re-functionalizing spaces for local commerce, religious uses, and residential needs.

By examining Trans Tiberim as a harbour district embedded within the wider city, this paper highlights the infrastructural solutions that enabled Rome to function as a gateway between maritime and inland networks. It demonstrates how urban fabric, environmental pressures, and logistical demands intersected to produce a resilient yet evolving port landscape over the long term.

Servicing Ostia: Transport Logistics in Rome's Imperial Port

Janet DeLaine

Rome's harbour city of Ostia provides one of the richest - and therefore the most commonly cited - collections of warehouses in the Roman world, which are notable not just for their number and variety but above all for their urban setting, made clearer by recent geophysical surveys. Unlike the imperial harbour at Portus, arguably dedicated to bulk goods destined for Rome including grain and later olive oil for the public annona, Ostia was geared more to smaller-scale and private commercial enterprises, as well as serving the needs of a seasonably variable and transient population, with perhaps some 50,000 inhabitants or more in the peak sailing season.

This paper aims to address one aspect of the infrastructure serving Rome's port city of Ostia, by modelling the movement of bulk commodities destined to serve the city itself, looking at goods both coming into and moving through the city. It will focus on two key parameters: the supply of food, particularly grain, wine and olive oil but also including meat and vegetables, and the supply of fuel for households, bakeries and baths. These would have provided the bulk of goods required on a regular basis, and the study will be based on estimates of the quantities to be moved around the city. Combining ethnographic parallels with the layout of the city, it will take into consideration the modes (human portage, pack animals, and carts), carrying capacity, and practicalities of transport for different commodities, and the feasible routes, including possible pinch points in the system, based on probable starting points and destinations for different goods. Overall, it will serve to provide a sense of scale to questions of urban traffic and infrastructure at imperial Ostia.

Linking Rome and Portus through the Viae and the Tiber: Towards a Better Understanding of the Nature of Connections between a Port and Associated Hinterland

Dragana Mladenović & Maria del Carmen Moreno Escobar

Recent scholarship has increasingly focused on the interconnectedness of Roman ports, yet individual harbours continue to be examined largely in geographical isolation. Such an approach overlooks their liminal position between land and sea, as well as their integration into wider terrestrial networks. This paper seeks to bridge that gap by exploring the complex relationships between Portus and its hinterland through an interdisciplinary research design that combines traditional archaeological methods with digital and spatial approaches.

The study integrates settlement analysis, epigraphic evidence, and IT-based landscape archaeology to reconstruct patterns of communication and interaction between Portus, Ostia, and Rome. A comprehensive database was compiled, incorporating all investigated archaeological sites situated along the principal communication routes of the Lower Tiber Valley—the via Portuensis, the via Ostiensis, and the Tiber itself. Inscriptions originating from the area were also added into the database,

and all entries were geo-referenced, which allowed for the results to be assessed within their topographical framework. Spatial analyses were then undertaken to model the visual and structural dynamics of the landscape, with particular attention to how movement along roads and waterways shaped social and economic connectivity.

Finally, these results are considered against the chronological development of Portus, Ostia, and Rome. This integrated approach provides a holistic view of the profound transformations that followed the foundation of the Imperial port, illuminating how Portus redefined the human, economic, and infrastructural landscape of the Lower Tiber Valley.

Spaces and Infrastructures of the Roman Port System of Altinum (Northern Italy)

Elisabetta Rosatti

Altinum was a harbour city of the X Regio Venetia et Histria, located on the inner edge of the Roman-era Venetian lagoon in the Italian Northern Adriatic area. Like in other cities of this region, such as Aquileia, a network of canals crossed and surrounded the site, providing waterborne connections to the hinterland via rivers, and to the Mediterranean through the lagoon basin. Altinum thus functioned as a diffused port system. Indeed, spread along these urban waterways, archaeologists have identified landing areas and possible storage facilities.

This paper presents some of the results and issues emerging from a doctoral research project dedicated to this distinctive port system. The study aimed to understand how the port operated by reconstructing its logistical chain from navigation toward and within the city, to the processes of storage and redistribution of goods in the urban area. With this purpose, it analysed port spaces and infrastructures beyond those on the waterfront alone, also investigating their functions and modes of use by people, boats, and goods.

The current contribution will thus engage the topic of harbour cities and their infrastructures, through the peculiar perspective of the Altinum port system.

Assessing Acholla: Revisiting a Tunisian Harbor City

Susan E. Alcock, J. Andrew Dufton, N. Nasr & Nichole Sheldrick

The city of Acholla (Henchir Botria, Tunisia), while far from archaeologically neglected, has been explored primarily for its elite residences and their superb mosaics. Yet even limited investigations at the 100+ ha city, which has not yet been greatly disturbed or developed, reveals numerous signs of other types of activity: an amphitheater, baths, a theater, and necropoleis. A possible forum location and a potential decumanus route have also been suggested, as well as sites of pottery production. The role and status of Acholla as a port city and its gateway infrastructure, however, have never been a focus of attention.

In June 2025, the Acholla Archaeological Project began a three-year program of pedestrian survey, topographic mapping, architectural documentation, and artifact analysis. Approximately 25% of the urban core of the city was surveyed in the first season, allowing the creation of density maps for various artifact types as well as preliminary readings of ceramics from two distinct zones of the site. Even with this very partial sample, distribution patterns in transport-related objects such as amphorae can begin to be detected. Topographic mapping and architectural documentation record numerous new structural elements, such as walls and foundations, not least in an area close to the coast. A collapsed vaulted structure— noted by previous investigators and preliminarily surveyed in 2025— may be part of a larger complex visible on satellite imagery (ca. 76m x 61m). Proximity to the current coastline, as well as the possible forum and decumanus, makes this a likely element of port infrastructure.

Future seasons will augment our overall understanding of material patterning as well as topographical and architectural features across the site of Acholla. The project has already demonstrated, however, that there is much to learn 'beyond the quay' about the infrastructure of this under-studied – but far from inconsiderable – harbor city.

Marseille, a Harbour City Integrated into the Roman Empire: From the Waterfront to the Urban Fabric

Marie Pawłowicz & Xavier Corré

The integration of Massalia into the Roman Empire in the last quarter of the 1st century BC profoundly transformed both the role and the urban landscape of this ancient port city. Formerly an independent Greek polis, Massalia became part of the province of Narbonensis, where the Rhône corridor, linking the Mediterranean to the northwestern provinces, made it a key axis within the imperial economic and logistical system. While research has long focused on the coastal and maritime interface structures, the understanding of the harbour's functions within the urban fabric itself remains largely unresolved.

This paper explores the onshore infrastructures directly or indirectly connected to the city's harbour activities between the end of the Republic and the 4th century AD. The study draws on a corpus of sites distributed along the northern and western shores of the cove beside which the city was founded, as

well as in some peripheral areas. A cross-analysis of topographical, architectural, and material data makes it possible to reconstruct the configuration of a “harbour district” situated on the margins of the upper town, where public buildings, commercial facilities, and artisanal areas coexisted and interacted. This approach invites us to reconsider the relationship between the port and the city, not as a boundary, but as a functional and symbolic continuum. Ultimately, it contributes to redefining Marseille’s position within the port system of the Western Roman Mediterranean and raises broader questions about the identity of a city integrated into the Empire yet still rooted in its Hellenic heritage.

Portus Magnus and the Port System of Urci: Maritime Connectivity and Coastal Dynamics in the Gulf of Almería during the Roman Period

Enrique Aragón Núñez

This paper explores the role of Portus Magnus (modern Almería) within the broader port system of the Roman city of Urci, focusing on the dynamics of maritime connectivity, coastal evolution, and economic interaction across the Sinus urcitanus. Drawing on archaeological, historical, and geoarchaeological evidence, the study reconstructs a complex maritime landscape composed of primary and secondary nodes that linked inland territories to Mediterranean trade routes. Portus Magnus functioned as the main redistributive harbour, complemented by a network of anchorages and stationes such as Torregarcía, Charidemi Promontorium (Cabo de Gata), and Turaniana (Roquetas de Mar). These sites reveal a coherent pattern of occupation and exploitation of marine resources, including fish-salting and purple-dye production, that illustrate the economic integration of coastal and hinterland environments.

The research also analyses geomorphological processes that have shaped the Almería coastline since antiquity. Fluvial sedimentation, coastal erosion, and anthropogenic interventions—particularly during the 19th and 20th centuries—have altered the ancient shoreline, complicating the preservation and interpretation of archaeological contexts. By combining underwater and terrestrial data, this study highlights how environmental dynamics influenced the development, transformation, and eventual decline of port infrastructures in the region.

Within the framework of the SINVS VRCITANVS project, these findings demonstrate the value of integrating maritime and underwater cultural heritage into a unified historical narrative. Rather than viewing the coast as a peripheral or marginal zone, the Gulf of Almería emerges as a nodal corridor in the western Mediterranean, where mobility, commerce, and cultural exchange were deeply intertwined. Ultimately, Portus Magnus and its satellite anchorages exemplify the adaptive relationship between urban, territorial, and maritime spaces in the Roman world, offering new perspectives on the socio-economic configuration of southeastern Hispania.

Maritime Territories, Coastal and Inland Dynamics. A Comparative Perspective between Southeastern Iberia and Maghreb. Case Studies from the TRAPHIC Project.

Jesús García Sánchez, Enrique Aragón Núñez, Javier Rodríguez Pandozi & Alejandro Quevedo

This paper discusses newly acquired archaeological data gathered in the last years within the Traphic project: Territory, Architecture and Pottery Production: exploring relationships between Hispania and Mauretania Caesariensis. The project explores maritime and inland territories from Iberian Southeast and North Africa (Algeria), we will discuss crucial elements such as the presence of off-shore islets in the configuration of maritime-inland dynamics and the creation of related infrastructure that materialize the link between sea and land. By using the cases of Isla del Fraile-Águilas in Spain, and Siga-Rachgoun and Tipasa in Algeria, the paper will introduce working methodologies. Our work uses taylor made methodologies, such as intensive and extensive field and a intensive underwater survey, remote sensing using current geospatial products and legacy data, GIS analysis to model chronological developments of archaeological sites, and material cultural studies, and some of the results achieved during the last three years of study such as the location of new coastal structures of diverse typology, as functional areas related to mine exploitation, quarries, necropolis, jettis, anchoring areas (detected underwater) and other fishing infrastructure.

Les implantations d’infrastructures portuaires dans l’arc atlantique romain méridional: Réflexions d’ensemble à partir des cas de Lixus, Baelo Claudia, Ossonoba et Olisipo.

Françoise des Boscs

Engagée actuellement dans la rédaction d’un mémoire de synthèse en vue d’une Habilitation à Diriger des Recherches (HDR) portant sur « Ports, échanges et sociétés portuaires dans l’arc atlantique méridional à l’époque romaine », je dispose d’un corpus de 45 établissements portuaires, s’échelonnant de Mogador à Lisbonne. Dans la seconde partie de ce mémoire consacrée aux paysages portuaires, j’étudie l’agencement des différentes infrastructures entre elles et leur articulation avec la ville dont elles dépendent. Si l’on peut définir les infrastructures comme l’ensemble des installations ou équipements nécessaires à une collectivité, on peut comprendre qu’un port, en tant qu’organisme vivant à la fonction

de passerelle, en exige de différentes sortes: des infrastructures maritimes (jetées, quais, brise-lames, phares, etc...), mais aussi des infrastructures de stockage (entrepôts, citernes), d'accueil (auberges, temples, lieux de réunion, d'hygiène/loisir, de contrôle), de production. Certaines de ces infrastructures, peuvent aussi se doubler d'une signification politique liée au prestige. Dans le contexte d'un milieu atlantique aux fortes contraintes naturelles et de sites portuaires implantés, pour cette raison, majoritairement en contexte fluvio-maritime ou lagunaire, nous nous proposons d'étudier l'organisation de l'implantation des différents types d'infrastructures (maritimes, de stockage, d'accueil, de production) et leur articulation dans quatre sites significatifs d'importance moyenne : un site de colline sur lagune, Lixus, un site de baie, Baelo Claudia, un site de barrière sableuse, Ossonoba (Faro) et un site d'estuaire, Olisipo (Lisbonne). Nous essaierons d'identifier, si, dans cette implantation, et dans la situation des différents types d'infrastructures les uns par rapport aux autres, on peut repérer ou non des constantes, si elles se réfèrent au modèle théorique vitruvien et comment elle s'y adaptent.

From Harbour to Necropolis: The Transformation of the Eastern Sector of O Areal

Patricia Valle Abad, Jesús Iglesias Darriba, Miguel Sartal Darriba & Adolfo Fernández Fernández

This paper presents the results of archaeological excavations conducted in 2006 and 2009 in the area of Rosalía de Castro (Vigo, northwest Spain). The investigations revealed a large Roman salt-production complex dating from Early Imperial period that fossilized former beach zones that functioned as natural anchorage areas during the Late Republican period. After the eventual abandonment of the salt pans, linked to sea-level changes, part of the area was reoccupied as a funerary space. The excavations uncovered a large necropolis dated from the 4th to the 7th century, organized around a rectangular building, interpreted as an early church.

Additional, the western part of the excavation area revealed the existence of a large building surrounded by several post holes of varying sizes, suggesting the presence of perishable structures, such as covered porches. The building was interpreted as part of a complex of storage facilities, related probably to the harbour of the city. The material culture recovered during those excavations has been crucial to understand the urban evolution of Vigo, which began as a secondary settlement and later developed into a commercial emporium and transshipment port during Late Antiquity. The presence of imported goods demonstrates its function as a final destination for long-distance ships from the eastern Mediterranean, Africa, and southern Iberia, which unloaded cargo to be consumed locally or redistributed along regional trade networks.

This study examines the evolution of Vigo as a harbour city from the Late Republican period to Late Antiquity, emphasizing the changes undergone by this area and demonstrating how they reflect the position of this secondary settlement within broader Mediterranean and Atlantic maritime networks.

Indirect Evidence for Harbour Dynamics through Spatio-Functional Analysis of Urban Topography. Reflections on Southern Gallic Cities in Late Antiquity (5th - 8th c. AD)

Lyubomir Malinov

The current state of knowledge regarding the harbour topography of the major commercial centres mediating contacts between the Mediterranean and the Gallic hinterland (Narbonne, Arles, Marseille) at the very end of the Roman period and beyond is marked by the extreme scarcity of identified landing facilities, warehouses, or other trading infrastructures. However, a comparative analysis of the overall topographical dynamics of these cities and the evolution of occupation patterns in proximity areas with potential harbour functions—particularly from a functional perspective—allow us to discern possible phenomena of urban configuration strongly conditioned by the attraction of harbour activities.

Such an approach also leads to the identification of possible “harbour districts,” a notion that remains fundamentally elusive yet cannot be disregarded in port archaeology, given the evidence emerging from diachronic comparisons. In this sense, while remaining within the precise chronological and geographical framework of Late Antique Gaul, this contribution aims to propose avenues for reflection on the importance of studying what we may call “peri-harbour” areas in order to better understand the complex relationships between city and port—an investigation all the more crucial for periods lacking clear architectural and urban models linked to maritime and commercial functions.

RAC9: Water Management Models in Roman Settlements: Adaptation, Innovation, Challenges and Interdisciplinary Methods for Their Study

Session organisers: María del Mar Castro García, Davide Gangale Risoleo, Eugenio Tamburrino & Antonio J. Ortiz Villarejo

The urban development of Roman towns was often shaped by earlier settlements whose location and pre-existing structures influenced subsequent urban and infrastructural planning. This dynamic is especially apparent in cities established on elevated sites, whether due to their setting in mountainous regions or as a continuation of pre-Roman traditions favouring hilltop locations for defence, territorial control, or access to specific resources. While strategically advantageous, these elevated positions presented notable water management and supply challenges.

Introducing a Roman water culture in such contexts required tailored solutions, which at times involved adapting and integrating existing infrastructures alongside the construction of new hydraulic works to secure water collection, storage, and distribution in topographies of a particularly challenging nature. This session examines water management models in medium and small-sized Roman cities, contrasting those located in plains or newly founded settlements with favourable conditions against those in geographically challenging environments. At the same time, this session will promote discussion on the interdisciplinary approaches currently used to study Roman hydraulic systems—such as remote sensing, spatial analysis, physicochemical, geological, and hydrogeological analyses, hydraulic engineering, modelling, and digitalization—which are yielding innovative results that significantly advance our understanding of Roman water infrastructures and management strategies enhancing the reconstruction and understanding of ancient water management practices and open new avenues for their study, preservation, and dissemination within Roman archaeology. The application of interdisciplinary methods enhances the reconstruction and understanding of ancient water management practices. It also gives the chance to manage large amounts of data and opens new avenues for research projects, preservation strategies, and dissemination within Roman archaeology.

Subdivision of Water in Roman Insulae: Drawing a Balance for the Water Tower of Vico della Fullonica (Regio VI) in Pompeii

María C. Monteleone & Elena H. Sánchez-López

The provision of water in some Roman towns during the imperial period relied on small local reservoirs. When water from local sources was available with sufficient continuity, above-ground tanks were constructed to supply various buildings through pressurized conduits – as was the case in Pompeii. In particular, in Regio VI, insulae 5 to 10 appear to have been abundantly supplied with water, judging from the number and size of decorative fountains and pools visible in private residences along both sides of the Via di Mercurio and the Vicolo di Mercurio.

This contribution explores the water balance of the water tower identified as no. 12 in Eschebach's enumeration. The tower, located in the Vico della Fullonica, was required to supply the nearby public fountain and several houses – among them the Casa della Fontana Grande and the Casa della Fontana Piccola – as well as workshops such as the fullonica at VI 8.21-22. Having previously estimated the water demand of these premises on the basis of the topographical and geometrical data collected for their supply system, the authors offer some considerations on the original functioning of the lead tank situated at the top of the tower. Drawing on example of tank preserved in the Naples Archaeological Museum, the original height of the water tower is estimated, and the possibility that water was delivered either continuously, day and night, or according to timed supply schedules is discussed.

Long-Term Waters: Water Landscapes and Heritage in Regio VIII Aemilia. An Interdisciplinary Study of Presences and Persistences in Urban and Territorial Planning

Alessia Morigi, Filippo Fontana, Letizia Aldrovandi, Riccardo Pinardi, Laura Ducci, Pietro Rizzo & Fulvio Celico

Archaeological, bibliographical and stratigraphic data, reworked in a digital environment, provide an in-depth profile of ancient urban contexts still living along Via Aemilia.

Comparative analysis highlights a deep connection between water and urban shape. In addition to technical solutions, as part of a large planning project, the use of water also enhances the urban

landscape, lending prestige to the city's monumental buildings. The technical solutions adopted for water management, provided for resilience, have long-term outputs that give to water a first role in transformation of ancient and post-ancient landscapes in developing a long-term water heritage.

The profound connection between the presence of water and the construction of the city and the surrounding area in a long-term perspective has been explored through an interdisciplinary approach, merging geological, hydraulic, hydrodynamic, chemical, isotopic and metagenomic data, as to reconstruct reliable palaeo-hydrogeological and hydro-archaeological scenarios.

Flow and Function: The Hydraulic Infrastructure of a Roman Minor Center at Podere Marzuolo, Italy

Rhodora Vennarucci, Astrid Van Oyen, Cleo Barbafera, Gijs W. Tol & Tom Keep

Between the mid-1st century BCE and late 1st century CE, the minor center at Podere Marzuolo, in south-central Tuscany (IT), engineered hydraulic infrastructure to control water flow, supply water to crafts (pottery production, metalworking) and domestic activities, and transport waste away from working and living quarters. Situated on a plateau overlooking the River Orcia, water management was a persistent concern on site due to a high water table, which was tapped until recently by a 20th-century well. This paper uses a socio-hydrological approach that integrates spatial analysis and 3D modeling to offer a preliminary functional analysis of the water features excavated on site by the Marzuolo Archaeological Project (2016-2024). Although the last 15 years have seen an uptick in studies on water management in the Roman countryside, scholarship has historically centered state projects and urban supply and the display of water in elite spaces. Distant from urban centers and major traffic arteries, Marzuolo has the potential to tell a different story of human-water dynamics. Its decentralized water infrastructure was created at the community level by rural inhabitants who were actively involved in the construction and maintenance of the system.

Evidence for different drainage systems may reflect diverse functions and/or flexible water management strategies. Two drains show clear evidence of having been rebuilt, which highlights the resilience of the community in the face of reoccurring water control problems. A well (the only water source discovered on site to date) appears to have been modified during its period of use, transitioning possibly into a soak pit before it was finally abandoned. While this hydraulic infrastructure may have been small-scale and responded to highly local factors, we nevertheless see a range of strategies (from proactive to responsive) and levels of investment that speak to the role of water management in shaping socioeconomic relations.

To See or Not to See: New Insights into Arucci's Water System (Aroche, Spain)

Isabel Aguilar Corona

Water supply was one of the main urban concerns in Roman civilization, not only because of its essential role in daily life but also due to its significance across multiple aspects of the urban environment. Beyond domestic consumption, water was required for irrigating gardens and orchards, supporting industrial activities, maintaining hygiene, decorating public and private spaces, and even for therapeutic purposes. It is therefore not surprising that some of the most emblematic Roman engineering works—such as aqueducts, baths, nymphaea, or sewer systems—had water management at their core.

Knowledge of the water management system in Arucci has advanced significantly through the application of non-invasive technologies, particularly geophysical surveying using Ground-Penetrating Radar (GPR). This technique, which allows the detection of subsurface structures without excavation, has proven to be especially effective for analysing the subsurface in this area, has provided high-resolution images that complement existing archaeological information.

In this study, ground-penetrating radar surveys proved decisive in tracing part of the aqueduct's route by identifying anomalies consistent with a hydraulic conduit. When combined with previously known archaeological evidence, these results not only allow us to propose a well-founded hypothesis about the route and state of preservation of the aqueduct but also contribute to redefining our understanding of the Arucci water supply network. Far from being a purely functional element, the aqueduct must be considered within the broader framework of the city's urban development, reflecting both the technical expertise and social aspirations that accompanied its construction. By emphasising the role of non-invasive methodologies, this research not only improves the reconstruction of Arucci's hydraulic system but also demonstrates its potential to advance the study of water management in ancient Rome in general.

Local Waters: Rethinking Roman Hydraulic Systems in Northwest Jordan

Clare Rasmussen

Water played a vital role in the cultural, religious, and urban life of Roman cities, yet studies of Roman water systems have often been framed through a Rome-centered lens that privileges technological dialogues and examples drawn from “type-sites” like Pompeii. The perception that Roman water was

stored, distributed, and used in the same ways cannot be expected in different parts of the empire, where diverse environmental and cultural conditions shaped local practices. To fully understand their significance, urban water systems should be studied within their local context as integrated networks, not just as independent monuments.

This paper examines Jerash (Gerasa) and Gadara (Umm Qais), members of the Roman Decapolis in northwest Jordan, to determine how water supply, distribution, and storage diverged from normative models. Using spatial analysis methods rooted in space syntax, combined with archaeological, archival, and in-person survey data, this study reconstructs the hydrological networks of these two sites. The results reveal highly decentralized water systems that relied on reservoirs, cisterns, and hydraulic monuments rather than centralized redistribution tanks. Many of these installations were embedded in civic and religious architecture, serving both practical and symbolic functions. Visualizing the routes and nodes of water supply highlights patterns of distribution and use, including the religious use of water within temples and spring sanctuaries. Additionally, these findings reconsider prevailing narratives of constant offtake and conspicuous consumption, highlighting strategies of environmental adaptation. Such "functional architecture" reflects an urban logic in which hydraulic design was integrated into the broader material and spatial language of the city. Ultimately, the case studies of Jerash and Gadara propose a new framework for understanding Roman water systems, one that foregrounds local environments, functional architecture, and cultural practice alongside urban planning and engineering achievement.

The Great Flood: How to Deal with the Climate Crisis in Ancient Times

Hanna Tręda

This paper is an attempt to present my master's thesis based on an analysis of the ability of building materials from Chhim and Jiyeh to drain excess water in the context of the climate crisis of the 6th century. In my work I'm directly focused on studying the adaptation of infrastructure in Roman and late antique Lebanon. The aim of the work is to assess whether the building materials and techniques used in Chhim and Jiyeh were adapted to effectively manage water during heavy rainfall and the climate crisis of the 6th century.

The thesis answers questions about the architectural and hydrological solutions used, the characteristics of building materials in terms of their ability to permeate or retain water, and the impact of urban layout on water flow control. The analysis also includes geomorphological evidence confirming the effectiveness or limitations of drainage systems during periods of extreme rainfall. Another important element is the distinction between the extent to which these solutions were a conscious adaptation to changing climatic conditions and the extent to which they were the result of local building traditions. The research methods are based on physicochemical analyses of materials obtained during previous excavation seasons, interpretation of architecture in the context of hydrology, and modeling of drainage systems and also comparison of building materials from similar sites in Tyre during this year's mission, in which I am participating.

The results of the planned work provide new data on dealing with water flow problems in difficult terrain and climatic conditions in smaller Roman settlements, which fits in with the theme of the panel on water resource management and it also contribute to a better understanding of innovative and adaptive solutions in ancient infrastructure and show how interdisciplinary methods can help in the reconstruction and interpretation of ancient engineering practices.

RAC10: Supplying the Roman Army: Centralised or Decentralised Production of Military Equipment?

Session organisers: Martijn Wijnhoven, Matěj Kmosek, Marek Vlach & Balázs Komoróczy

The question of how the Roman army was supplied with military equipment has been debated for decades. Research by scholars such as Jürgen Oldenstein, Mike Bishop, and Jon Coulston has significantly advanced our understanding. The prevailing model suggests a shift from localized production in city centres during the Republic to increasing self-sufficiency along the northern frontiers under the Principate, culminating in centralised state-controlled fabricae in Late Antiquity. However, new discoveries and methodologies—particularly archaeometric analyses—have provided fresh perspectives, challenging long-held assumptions. These

advances invite a reassessment of the extent and organisation of military production and supply, including the role of vici and neighbouring civil settlements, as well as regions beyond the limes.

This session features papers that critically engage with these themes, offering new evidence and interpretations on the production and distribution of Roman military equipment. By bringing together diverse approaches and case studies, this session aims to refine our understanding of how the Roman army acquired its equipment, bridging the gap between traditional models and emerging evidence.

"Quid est fabrica?"- The Equipment Production Centres of the Roman Army

Stefanie Hoss

Because of their dominant role in the Late Antique written sources, the famous 'fabricae' are often seen as the main source of military equipment. But the mere word is already a problem: Does this word indicate the workshops found in forts and legionary fortresses? The buildings often named 'fabrica' within the walls of forts and legionary fortresses have such widely differing sizes and forms that one is left with the impression that any building whose function was not obvious was declared a 'fabrica', irrespective of whether there was any evidence for metalworking. However, the examples of such buildings generally deemed more plausible have large interior courtyards with aisled halls or several smaller rooms situated around it. But even in these buildings, evidence of metalworking such as ovens, timber-lined pits and troughs and finds of crucibles, semi-finished products and bronze scrap is often quite thin on the ground.

In my paper, I would like to look at the relevant evidence for production sites under the direct control of the army. I will discuss what the 'fabricae' in the forts and legionary fortresses may have been used for and where the production of the massive quantities of military equipment needed by the Roman Army may have taken place.

"Between the Hammer and the Anvil": Production and Supply Mechanisms of Militaria in Roman Judaea

Guy D. Stiebel

The abundance of military equipment recovered from conflict sites in Roman Judaea - particularly from the Early Principate - offers a valuable opportunity to examine Roman production and supply mechanisms, with an emphasis on the Roman East. In addition to traditional typological approaches, the integration of advanced methodologies, such as ancient DNA analysis and archaeobotanical tools, sheds new light on underexplored aspects of martial material culture, particularly its organic components.

Furthermore, rare historical references to the Roman army acquiring military equipment from the local population in Judaea open up new avenues for understanding these supply practices. The lecture will also present newly discovered evidence of such a production installation uncovered during recent excavations at Masada, offering a glimpse into local manufacture of militaria. The discussion will be contextualised through both newly critically analysed archaeological assemblages and textual sources, most notably the writings of Flavius Josephus, aiming to present the chaîne opératoire of military equipment in the eastern province of Judaea during the 1st-2nd century CE, in peace time and in war, both on the unit and the individual levels.

Made in Dacia? Reassessing the Evidence for Military Equipment Production and Distribution

Silvia Mustață, Monica Gui & Sorin Cociș

Despite the large number of troops stationed at any one moment in Dacia, the issue of the supply of military equipment to meet the demands of the provincial army has never been investigated on a more systematic basis.

The existence of workshops in and around a number of auxiliary forts has been claimed on more or less convincing grounds, while the more limited distribution of a number of artefacts also seems to point to a localised production. Other categories, on the other hand, appear to indicate broader avenues for the procurement of equipment and a less straightforward production system. All this evidence needs to be critically reviewed, considering also the specific type of artefacts it refers to and introducing a measure of chronological depth. In our attempt to provide a more comprehensive image, we will also integrate novel data from recent archaeological excavations, as well as the results of metallographic analyses carried out on a small lot of military items, raising new research questions and perspectives.

Technological Traditions and Chemical Communities: Characterising Military Copper Alloy Technology in 1st-3rd Century Britain

Owen Humphreys

The Roman period saw an unprecedented boom in the consumption of metals in Britain. The sudden influx of copper alloy military equipment is amongst the most notable facets of the phenomenon. For decades, it has been recognised that these objects had a unique high-zinc composition. Comparison with contemporary brass coins has led to the suggestion of centralised, state-controlled production. However, whilst previous studies have a wide geographical range, they have little chronological depth, and are often isolated from typological or social understandings of the objects. There is little data about the wider Roman world to contextualise our understanding of military production.

The REMADE (Roman and Early Medieval Alloys Defined) project is a new initiative that explores copper-alloys across the UK in the first millennium AD. To date, over 2,000 Roman military objects have been analysed, as part of a larger dataset of over 10,000 objects. Key case studies include London, Vindolanda, and Corbridge.

Rather than seeing these as abstract representations of production, we are looking critically at how we identify and characterise military objects, how they were made, how they functioned as fittings for larger composite objects, and how they were engaged with by different communities. By combining robust data analysis with modern approaches to material culture, we can understand object chemistry as the result of a chain of choices that went beyond functional constraints, and instead created, linked or divided communities of practice.

What emerges is a military production space that was not static or monolithic. Different technological traditions coalesced around different objects, evolving in response to the changing roles, cultures and economies of the military and the broader Roman world. We identify broad chronological trends that demonstrate profound changes in military production, but also highlight how production involved a complex web of actors that cannot be defined singularly.

Materialising Roman Diplomacy: Linking Tiberius's Naval Expedition to the North in 5 AD with Eggers 92 Bronze Basins

Rasmus Andreasen, Thomas Edward Birch, Thomas Grane, Mads Leen Jensen, Michelle Taube & Matěj Kmošek

Tiberius's naval expedition to the Northern Seas in 5 A.D. is well documented in classical sources. The precise route has been speculated and recently re-interpreted to encompass the Jutland peninsula. It is precisely at this point that Roman style bronze and silver objects first appear as grave goods in Denmark. Among these, eight bronze basins of the Eggers 92 type have been found in separate graves across the country, making them the most numerous and most broadly distributed type of Roman bronze good found in Denmark.

This study provides the results of archaeometallurgical investigations of the Eggers 92 bronze basins in Denmark, as well as parallel examples from the Czech Republic. The results provide the elemental composition of the metals used to construct the bronze basins and their fittings, as well as their lead isotope compositions. The purpose of the investigation was not only to characterise and provenance the metals used to construct the bronze vessels, but also to see if they could be connected physically by sharing a common signature. If the basins share a common chemical/isotopic signature, it would indicate that they likely were made using the same materials, possibly even in the same workshop.

Four of the Danish bronze basins as well as a single basin from the Czech Republic share the same lead-isotope signature, physically connecting multiple examples of the Eggers type 92 basin across Northern and Central Europe. The research provides empirical evidence and support for a diplomatic gift giving event that directly coincides with the timing and geography of the Roman naval expedition to the North in 5 A.D.

RAC11: Queer Roman Archaeology

Session organisers: Tatiana Ivleva & Alena Wigodner

Queer archaeology is no longer new (Dowson 2000). In the last few decades, work to recognise gender and sexual diversity in the archaeological record has profoundly enriched our understanding of ancient identities and societal values, destabilising normative and binary perspectives. Queer approaches to the Roman world are flourishing in literary and historical studies (e.g. Surtees and Dyer 2020), but queer Roman archaeology remains piecemeal,

splintered and understudied (see Eger 2007; Barnett 2012; Pinto and Pinto 2013; Power 2020). It is the goal of this session to develop momentum for this important work; we seek methodological and theoretical means for expanding the interpretative potential of the archaeological record when it comes to queerness, broadly defined as that which is oppositional to the norm. Papers featured develop queer engagements with the Roman world through any aspect of material culture (including art and inscriptions).

Topics include:

- Methods for exploring how non-normative, nonbinary, and fluid expressions of sexuality and gender intersect with other markers of identity including age, class, disability, and ethnicity.
- Barriers or risks to studying queerness in the archaeological record, as well as unique opportunities afforded by a material approach.
- The negotiation of normativity and queerness in Roman colonial contexts, and the way non-normative performances of gender and sexuality intersected with the exercise of Roman power and local agency.
- Queer approaches to heritage work in the Roman world.

Written on the Subway Walls: Marginalized Sexualities in Pompeian Graffiti and the Case of Ismenus Fellator

JT Thomas

Graffiti is perhaps one of the most intriguing bodies of evidence in the study of the ancient past. A well-preserved epigraphic record, as at Pompeii, gives us invaluable insight for a bottom-up approach to history. These etchings are not the high-minded, rambling philosophical treatises of the literary elite, but are rather the musings of everyday Roman subjects on the ground. At the same time, graffiti's subjects are also infuriatingly illusive; it is likely that we will never know more about them than what they have written on the wall.

My paper is first and foremost an attempt to recover one such lost history. Through a methodology of speculative fabulation not dissimilar to Saidiya Hartman's critical fabulation, I intend to partially reconstruct one possible life of "Ismenus fellator" (CIL IV 2169) through a series of vignettes, which themselves explore the politics of sex, sexuality, and gender in the ancient world. I will argue first that, following Levin-Richardson (2015) and Kamen and Levin-Richardson (2015), this graffito's grammatical conventions position Ismenus as an active sexual partner, despite being penetrated by the act of fellatio. Second, I will argue for a reading of the Ismenus fellator graffito as an example of Scott (1990)'s hidden transcript made public, one that provides evidence for sexualities and masculinities that do not conform to established paradigms in Roman gender and sexuality studies. Finally, I will suggest that the Ismenus fellator graffito can provide insights into the nature of male sexual subjectivity by drawing attention to populations and relations that are largely sidelined in dominant narratives of sex and social intimacy, both ancient and modern.

Meet Me at the Callinicus. A Re-Examination of the House of Jupiter and Ganymede (I.IV.2) at Ostia (Rome)

Diletta Nesti

In 1915-1918, Guido Calza excavated the area in the Insula IV between the House of the Dolia at north, via di Diana at south, via dei Dipinti on the west, and via dei Balconi on the east side. The complex, built in the 130s AD, consisted of two medianum-apartments and a domus facing on via dei Dipinti: House of the paintings, House of Infant Bacchus, House of Jupiter and Ganymede.

This paper focuses on the group of sexual graffiti from I.IV.4, especially CIL XIV, 5291 3c. 1-2 from room 31, where one is erasing the other.

"Hic ad Callin[i]cum/futui orem anum/amic[u]m o[---]re nolite /[c]jinaidi [---]/[-----]."

"Livius me cunus/lincet [Te]rtulle cunnu con/Efesius ier[an]t ii"

The application of the zoom-in/zoom-out thinking to the analysis of the graffiti, considering the surrounding area in which the domus stood and its location not exceedingly far from the dockside, allows to investigate their implications in terms of sexual habits, social standing and gender normativity through the exercise of critical fabulation, and to understand the repurpose of the building.

Since Calza, the possibility of repurposing as a brothel was discarded in favor of a caupona. In 1991, John Clarke, reading the erotic graffiti as related only to cinaedii, interpreted it as a gay hotel. This paper moves further into the discussion highlighting the presence and meaning of also females in the graffiti, like Tertulla, probably the fierce author of one. Moreover, the probable use of a fishing net needle for

the “erased graffito”, although a unique occurrence, could indicate at least some of the patrons frequenting the establishment: sailors, boatmen, fishermen.

Building on McGinn’s hypothesis (2004) of Roman sex clubs, this study proposes to reshape the concept using as possible models, although chronologically and geographically distant, the molly houses in 18th century London and Trotter’s studies (2008) on dockside prostitution in south african ports.

Not Binary, Not Included: Rectifying the Erasure of Ambiguous Bodies in the Roman Period

Devon McLean

Roman archaeology has been slow to incorporate gender theory, particularly when it comes to including non-binary and intersex individuals. To remedy the exclusion of ambiguous bodies in the Roman period, burials with grave goods that do not match their biological sex, evidence of castration, and intersex individuals are discussed. Performance of masculinity by biological males was important to Roman society and this performance needed to be maintained through actions and appearance. Eight burials matching this description were found across seven sites in Roman Britain, Egypt, and Germany between 400 BC and 400 AD and demonstrated that through jewelry and castration, it was possible to exist outside of the binary. Indeterminate skeletons are often excluded from the archaeological record due to a lack of distinction between ambiguous and not observable features, therefore a new sexing category is advocated for. The implications of inaccurate reporting of ambiguous burials are discussed as well.

Warriors and Weavers in Pre-Roman and Roman Italy (950 BC-100 AD): From Binary Gender Approach to Queer Archaeology Theory within an Anglo-Italian Perspective

Francesca Fulminante

Already in the 1990s, John Robb provided a comprehensive overview of the development of gender symbolism and ideology in Prehistory. During the Neolithic gender representation seems to be much more ambiguous and blurred. With the Copper-Bronze Age and more distinctively with the Iron Age and Archaic Period, a binary ideology seems to emerge, especially from the funerary evidence, between ‘martial warriors’ and ‘beautiful weavers’ (Robb-Harris 2017). While Robb-Harris’ model partially still holds today, many scholars have challenged this binary conception (Gaydarska et al. 2023).

We present a contextual and quantitative analysis of the Pre-Roman and Roman cemeteries of Osteria dell’Osa (950-500 BC, Latium vetus), Fossa (850 BC-100 AD Abruzzo), Veio, Quattro Fontanili, (900-725 BC, Etruria) and St. Teodoro-Incoronata (900-700 BC, Basilicata), where most burials reflect a gender binary. However, there is also a significant number of ungendered burials, burials with both female and male elements and some burials anthropologically determined as female with male objects, and vice versa. Interestingly, the total percentage of these individuals in relation to their community represent almost the same percentage as LGBTQ+ individuals in modern London and urban contexts in England according to recent surveys statistics.

This quantitative study highlights complex patterns that deserve further investigation. Thanks to a recent grant (BA/Leverhulme Small Research Grants Scheme, SRG2324\241025). we are currently using peptide analysis of dentin enamel to sex these individuals scientifically to disentangle the complex intersectionality between sex, gender, status and identity in past populations.

How should we interpret the interregional nature and chronological persistence of this pattern? Should we consider these individuals queer (see for example Power 2020 and Matic 2023), and what would this mean for those communities in the past and for us today? The evidence is presented and open to discussion/suggestions.

Queering Cultural Contact in the Roman World: Funerary Case Studies from Etruria and Greece

Jessica Tilley & Jenny Weigel

As was done in the volume *Un-Roman Sex* (Ivleva and Collins 2020), considering the archaeological evidence from other cultures in close contact with Roman society can help decolonize queer studies analyses. Looking beyond Rome, this paper queers the funerary evidence of two cultures directly impacted by Roman imperialism, the Etruscans and Greeks, informing how cultural plurality affected the various non-stagnant identity performances of mourners and the deceased in these cultures.

In both Greece and Etruria, the mutability of identity expression is put in sharp relief following the advent of Rome. In the Roman province of Achaëa, the effects of colonization had distinct manifestations in the funerary record of cities like Corinth and Nikopolis where identity expression was inconsistent and non-normative. Through a queer analysis of the archaeological record from the graves of this ‘conquered’ region, we can challenge the “Roman or Greek” binary and better complicate how identity was negotiated under Roman colonialism. At the Etruscan city of Tarquinia, interactions with the Romans in the 4th to 2nd centuries BCE disrupted the traditional social order of the previous centuries and led to

the rise of a so-called 'middle class' (Amann 2024), visible in the graves of the Fondo Scataglini necropolis. Viewed through the lens of queer theory, several graves at Fondo Scataglini do not easily fit into a strict gender or socio-economic binary, demonstrating the mutability of gender and class amidst early Roman imperialism in Etruria.

Utilizing queerness and queer theory to interrogate entrenched norms and binaries, this paper examines the multidirectionality of cultural influence embodied in identity expression evidenced in tomb contexts at moments of intensified cultural contact. In highlighting the fluidity of intersectional identities like gender, ethnicity, and socio-economic status, we can better understand the inconsistencies in identity expression and challenge how we frame cultural plurality.

Bone Pin Or Stylus?: Challenging Traditional Fieldwork Analysis Strategies

Melissa Ludke

The excavations of a Roman bathhouse at the colonial site of Cosa uncovered various items traditionally categorized as personal objects and often functioning in a gendered sphere (for example, hair pins, toilet items, cosmetic spoons, and the like). These artifacts are usually read as indicative of spaces divided according to gender, but there are at least three main challenges to this approach: the obscurity of the material representing bathing behavior based on stratigraphical processes, the multi-purpose use of these objects, and issues assigning binary gender identity to material culture. While architecture tends to be a key feature of determining these divisions, the artifacts, and those not used to identify the rooms being used, are sidelined.

Moreover, modern puritanical readings against gender norms affect our ability to meaningfully interpret a small scale bath that does not service a population rich or important enough to be overly concerned with propriety and social etiquette that elite writers and moralists were. Therefore, this paper proposes a more intersectional approach that seeks to de-construct binaries and examine non-normative approaches to the study of material culture as reflective of personal identity. Thus, we consider all of the uses for any given, mainly de-contextualized, object in addition to gender that may instead represent the general population of Cosa at any point during the Imperial period of the site's history, such as age, class, disability, and ethnicity; during or after the construction and use of the building as a bath. As a result, we discuss what can be gleaned from these objects regarding identity when removed from a definitive contextualized space due to archaeological processes.

Seeing Queerly at the Roman Baths: Diversifying the Archaeological Story

Amanda Hart & Eleanor Fletcher

The Roman Baths is currently in the development phase of an ambitious reinterpretation project aimed at diversifying the narratives presented within the museum and archaeological site. Recognising the need to move beyond traditional, normative perspectives, one key area under consideration is the exploration of sexuality and queer identities in Roman archaeology. Our approach is threefold, incorporating modern voices, analysis of our underutilised skeletal collection, and a critical re-evaluation of material evidence.

Firstly, we have trialled a co-curation methodology, working collaboratively with individuals who have lived experience as members of the LGBTQ+ community through the project "Seeing Queerly." Through a series of facilitated sessions, participants selected objects from the museum's collection that resonated with aspects of their identity and experience. These sessions prioritised participant voice, allowing for the creation of object labels in their own words and fostering a sense of community and wellbeing. This process has challenged conventional curatorial narratives, resulting in a temporary display that showcased a diverse range of objects, from Roman coins to Georgian love tokens, interpreted through a queer lens.

Secondly, we are analysing the skeletal collection using an osteobiographical approach drawing on the individual, the burial context, and wider Romano-British society. By reconstructing life histories from skeletal remains, we aim to open new possibilities for understanding the diversity of identities and experiences, including those that may have been marginalised or rendered invisible by traditional archaeological interpretation.

Lastly, we are systematically re-evaluating objects within our collection, seeking to identify and reinterpret artefacts that may speak to non-normative expressions of gender and sexuality. This critical review is informed by queer theory and seeks to destabilise binary narratives, making space for fluidity and multiplicity in the stories we tell.

RAC12: Societal Impacts of the Roman Construction Industry During the High Empire

Session organisers: Sadi Maréchal & Konogan Beaufay

The aim of this session is to examine the societal impact of construction industry in the Roman imperial period. Construction works and building logistics have long been approached from an economic perspective, focussing on aspects such as the cost and transport of building materials, or the necessary manpower. Valid as these approaches are, less attention has been paid to the impact these projects had on the urban fabric in which they unfolded, or on the lives of the people that were directly or indirectly involved. Contributors approach construction industry from a human-focussed perspective, which can include all types of people concerned (commissioners, contractors, paid and unpaid labour force, end users) and at all stages (conception, site preparation, construction, finishing, demolition) of the process. Themes include:

- The origins, status, working and living conditions of the workforce.
- The management of construction and demolition sites.
- The circulation of building materials and resources within towns, both for supply and disposal.
- The legal framework of construction.
- The environmental impact of the construction industry and its effects on society.
- The role of the construction industry on workforce employment, on the economic development of cities and countryside, on the economy at large, on the urbanisation of the Empire.
- The role of construction in the transformation of neighbourhoods, such as gentrification, social segregation, or social displacement.
- The role of technology in construction and what this leads to in social terms (e.g. larger rooms).
- The effects of the provision of resources, facilities, and infrastructures on the inhabitants of the Empire.

In contrast to numerous previous studies, presentations include discussions of modest and small-scale building projects. The geographical scope encompasses the entire Roman Empire, with particular interest for case-studies in the provinces.

Labour, Identity, and Practice: Prolegomena to a Cultural History of Roman Builders

Dominik Maschek

Roman architecture is often discussed in terms of its monumental remains - the Pantheon, the Colosseum - yet the people who built these structures remain strikingly absent from much scholarship. Debates since the Renaissance have overwhelmingly emphasized design, patronage, and aesthetics, while labour, organization, and the lived experience of builders have attracted comparatively little attention. As Brent Shaw has noted, "It is a truism of the modern writing of ancient history that much of the history of labour is less about the work and work regimes themselves than it is a second-best history that does what it can with the existing legal and literary sources. It tends to reduce the actual dynamics of hard work to a history of ranks, statuses, rights, and obligations. We have to do better" (Shaw 2013, 10).

This paper takes up that challenge by shifting attention from elite discourses of architecture as an art to the everyday realities of construction as a trade, shaped by the agrarian economy, institutional frameworks, and deeply embedded social hierarchies of Roman society. Construction sites, often overlooked in cultural histories, are presented here as social arenas where craftspeople endured difficult physical conditions, developed shared practices of making, and negotiated both technical standards and communal identities. Attention is paid not only to collective organization and workplace dynamics but also to the possibility of self-conscious occupational cultures among builders. Drawing upon case studies, the paper examines how these dynamics played out in practice, and what they reveal about the wider social role of construction. By reassessing the evidence from texts, material culture, and archaeology in light of these dynamics, and by situating Roman building work within broader comparative perspectives on modern construction cultures, this study explores the existence of a distinctive sub-culture of Roman builders. In doing so, it repositions construction not only as a field of

technical achievement but also as a profoundly social process, integral to the lived experience of the Roman world.

The Occupational and Geographical Mobility of Builders: Evidence and Consequences

Pauline Ducret

Builders, whether unskilled labourers or skilled craftsmen, are rarely mentioned in written sources, including legal ones, making it difficult, if not impossible, to trace individual or collective career paths. However, understanding the functioning of the construction sector, in socio-economic, organisational and legal terms, makes it possible to identify several types of mobility: mobility from one building site to another; between activities in different sectors; and, consequently, geographical mobility, including between rural and urban contexts.

I propose to study these dynamics by focusing on the building sector (both private and public) of late Republican and early Imperial central Italy. I will first present the legal, socio-economic framework for labour employment and highlight the seasonality of building activities. I will therefore infer the different forms of mobility of the builders.

I will then be able to consider the socio-economic consequences of this mobility: on the one hand, the complementarity but also the competition between sectors of activity; on the other hand, the link between town and country and the impact of this mobility on the suburban landscape. The consequences are also human: professional mobility requires versatility of some of the workforce, while geographical mobility has repercussions on living conditions and locations, as well as on family ties. Finally, both types of mobility allow us to think differently about construction sites, as meeting points for people from different backgrounds.

Makers of Roman Construction in Practice and Art

Jessica Plant

A remarkable limestone funerary relief from Sens (Yonne, Roman Agedincum Senonum) depicts plasterers and painters at work (Musée Municipal, Sens, inv. J 115). Typically employed in scholarship to illustrate how Roman frescoes were made, this paper instead investigates the impact of those processes of making. It considers the Sens relief both as a representation of, and lens into, a ubiquitous practice of surfacing structures in Roman Gaul in the 2nd century CE, and as a sophisticated object in and of itself, crafted within the industry of commemorative art. In doing so, this paper asks, what can depictions of building processes reveal about the (social) meaning of construction in the Roman world? In addressing this question, I contextualise the relief within the construction and funerary landscapes of Roman Gaul, bringing together material monuments of plasterers and carpenters, for example, and drawing on comparative material from across the Empire. The pictorial and epigraphic evidence help to characterise the technical processes and organisation, as well as the possible status of builders and surfacers of the built environment. Such contextualisation sheds light on workers of wood and plaster in Roman antiquity, who were integral and pervasive in construction projects, yet are often difficult to discern in the extant material and written records and remain easily overlooked in scholarship.

Moreover, by taking seriously the value and labour invested in funerary monuments, which celebrate the work of the deceased, relations between different media, crafts, makers, and their families/communities surface. The technical inter-craft knowledge of the artisans who produced (stone) funerary art, for instance, further characterises the societal impacts of building activities, highlighting relationships between workers and their contributions across construction and sculptural industries in both life and death.

Rethinking Opus Caementicium: When Roman Terminology Meets Syrian Materiality

Fynn Riepe

This paper will examine the use and history of concrete for structural purposes in Northern Syria during the Roman Principate. The discussion will concentrate on the problematic terminology of 'Roman' concrete, otherwise known as opus caementicium, in the context of the eastern provinces, with a particular focus on Syria. The paper will present preliminary findings of my doctoral research project, in which I re-evaluate the use of concrete in Northern Syria by applying Assemblage Theory.

The study of concrete as a construction material in Syria has historically mostly been viewed through a 'Roman' lens, interpreting the employment of the material as a signpost of Roman cultural influence. In the specific context of the eastern Mediterranean, individual ingredients of the material, predominantly volcanic ash, have been utilized to differentiate between structures using 'Roman' concrete and those that employ mortared rubble. This paper will demonstrate the problems surrounding the modern terminology used to describe the various forms of concrete of the Roman period, by using Northern Syria as a case study.

Secondly, the paper will provide a contextual analysis of the use of concrete in Northern Syria, drawing upon the archaeological and historical data documenting the use of hydraulic mortar in the Levant from the Bronze Age onwards. I argue that the use of concrete in Northern Syria can be seen as part of a long-standing tradition of local limestone exploitation. In light of this evidence, the paper will show how the 'Roman' connotation attributed to concrete construction in the East can be misleading, and how the usage of Assemblage Theory provides a novel perspective on how we understand the Vitruvian *caementum structura* (Vitr. 2.4.1) and its application by architects and builders in Roman Syria under the Principate.

Recycling Ceramic Waste in Rural Roman Baetica: Construction Techniques and Socio-Economic Implications in the Guadalquivir Valley

Iván González Tobar

Olive oil from the Baetican province was exported on a massive scale during the first five centuries AD. This product was distributed in amphorae manufactured in approximately one hundred workshops situated along the banks of the Guadalquivir River, between Córdoba and Seville. The production volume of these amphorae was so considerable that defective vessels and other ceramic waste were systematically reused throughout the valley as construction material. Both the workshops themselves and other types of sites employed this distinctive building technique, which relied on the methodical stacking of ceramic production debris. This practice constitutes a unique example within the Roman world of large-scale recycling of waste generated by pre-industrial ceramic craftsmanship. The technique has been identified and characterized through systematic pedestrian surveys and archaeological excavations conducted at three pottery workshops.

In this study, we present our observations and raise several questions concerning this construction method, its environmental implications, the social status and working conditions of the labor force, and the circulation of building materials within an area of approximately 2,000 km² in the Guadalquivir Valley (Andalusia, Spain).

Investigating Stone Circulation, Building and Demolition Site Management, and the Identification and mobility of Stonecutters' Workshops through the Evidence of Masons' Marks: The Case of Cyprus

Anna Urszula Kordas

Recent years have seen intensive research on quarries and stone artefacts, including petrographic analyses, stylistic studies, examinations of tool traces, masons' marks, and the palaeography of associated inscriptions. These investigations have greatly expanded our understanding of extraction techniques, the provenance of raw materials, craftsmen's mobility, and the marble trade in the Mediterranean. Yet, scholarly focus has long been directed toward marble artefacts—objects of long-distance trade and commissions—while monuments made of local stone have often been overlooked. In this context, monuments bearing masons' marks from Cyprus provide an exceptional dataset. Although such marks are attested at many sites, they have never been systematically studied. Cyprus, due to its insular character, represents both a distinct region and a crucial hub in maritime trade networks that enabled the exchange of goods, ideas, and craftsmen. Notably, during the first two centuries of the Roman Empire, public buildings on the island were constructed exclusively of local stone, as no marble outcrops were exploited there at that time. This paper presents new observations that enrich our understanding of ancient construction engineering, based on analyses of masons' marks recorded on architectural elements from Nea Paphos, Palaipaphos, Geronissos, Kourion, Latsithkia, Amathus, and Salamis. Focusing primarily on southwestern Cyprus allows for the confrontation of local phenomena with broader questions of regionalism within the eastern Mediterranean economy. A key issue addressed is whether systems of masons' marks reveal tendencies linked to the Alexandrian artistic influence evident in Cypriot architecture. Comparative analysis in a broader archaeological context provides insights into stone circulation, site management, and the identification of stonecutters' workshops. Ultimately, this study seeks to determine whether Cypriot marking systems reflect local, regional, or supra-regional patterns and whether they can help trace workshop mobility and the presence of craftsmen from outside the island.

Beyond Stamped Names: What Do We Know about Women in Construction Industry in Roman Gaul?

Ludvine Capra

Six women's names are recorded on construction-related elements (bricks and tiles), in Gaul from the 1st to the 3rd century AD. This represents a much smaller corpus than the one from Rome and the rest of Italy, for which there are approximately forty feminine names known in stamps. Each of these feminine names is stamped on at least one or several elements. From the study of this type of source, what can we learn about the place of women, their agency, in the construction industry in Roman Gaul? To answer this question, I propose with this paper to present a detailed study of the Roman Gaul corpus.

First, I will introduce the historical and historiographical framework of Roman feminine stamps on bricks and tiles, and then present the Roman Gaul corpus more precisely. We will observe its geographical distribution, the dating of the elements, their characteristics, and the economic context in which they were inserted. We will then focus more extensively on the "Clariana" stamps, as they provide the most occurrences (more than sixty).

Finally, we will develop a synthesis on what the study of these stamps allowed us to learn about the status, identities, and roles of women in the construction industry in Roman Gaul. We will compare the results with those concerning men's stamps, to observe any similarities or, conversely, disparities based on the gender associated with the inscribed names. Finally, to refine our analysis, we will also compare these data with those of the rich corpus from Rome and Italy.

The Gymnasium of Agrigento: Abandonment, Spoliation, and Reuse Processes between the late 2nd and 19th Century AD

Monika Trümper

After its foundation in 580 BC, Agrigento was continuously inhabited until today. The city sits on a series of ridges and terraces formed by alternating layers of clay and a yellowish calcarenite that was quarried in and close to the city and used for building until today. Since the calcarenite was usually worked into rectangular blocks which could be used in many different contexts, the urban development of Agrigento is characterized by continuous spoliation processes and the circulation and reuse of building materials. While this has long been recognized in research, the chronological, spatial, and social implications of such demolition and circulation processes can rarely be assessed for buildings that have been excavated long ago. The aim of this paper is to fill this gap by analyzing the spoliation process of Agrigento's gymnasium that has largely been excavated between 1991 and 2005 (period 1) by the local Soprintendenza and Parco Archeologico and again between 2022 and 2025 (period 2) by the Freie Universität Berlin and the Politecnico di Bari. These excavations showed that the gymnasium was built in the 2nd century BC and abandoned around AD 200. In period 1, it was recognized that calcarenite ashlar from the gymnasium were reused in a monumental ensemble built in the 4th century AD on top of the running-tracks. The period 2 excavations focused on the palaestra and yielded evidence of makeshift installations set up shortly before or during the spoliation process; working layers stemming from spoliation; abandonment layers on top of spoliated features; and structures built with architectural elements of the palaestra on top of the abandonment layer presumably in the 18th/19th century. The paper examines and assesses the strategies of spoliation and reuse in the different areas of the gymnasium, the time frames, logistics, and possible agents and legal framework.

Site of Construction, Materials and Organization of Work: Considerations on the Construction of the Provincial Forum of Tarraco (Hispania Citerior)

M. Serena Vinci

This paper aims to present some aspects related to organization of the construction site of the Provincial Forum of Tarraco. The so-called Provincial Forum of Tarraco (Hispania Citerior) represents one of the most suggestive monument of the Western part of the Roman Empire. The construction of this large monumental complex, organised in three terraces, undoubtedly involved a building site (*cantiere di costruzione*) working over a long period, a time frame that is still difficult to quantify even today. It was built in the Imperial age on the upper part of the town, an emblematic sector where the Romans probably established a military castrum during the Second Punic War and that, during the Late-republican age, was integrated into the town wall. So, the topography of the site, a hill rising 80 metres a.s.l., and the presence of existing structures certainly affected the operation of the construction site, causing numerous logistical and organisational issues.

The circulation of building materials within the construction site and its transport from the extractive site represents another interesting theme. From the very first phases of its monumentalisation, public building at Tarragona involved the intensive exploitation of local resources thanks to a geology that provided good-quality building Stone. It is a bioclastic-limestone proceeding from El Mèdol quarry, located some 9 km northeast of the town. In this stone quarry painted and engraved marks/inscriptions on stone blocks have been attested, used to organise and manage the quarrying tasks and the labour of quarry-workers.

The Roman Amphitheatre of Volterra: The Story of an Unsustainable Construction Site?

Stefano Camporeale, Mattia Maccarinelli & Elena Sorge

The sustainability of a construction site is the result of a complex set of factors like the choice of location, the logistics of supplies, and the definition of the whole building process. If these elements are not planned properly, it leads to a waste of environmental, human, and financial resources, compromising the success of the undertaking.

The Roman amphitheater in Volterra, discovered in 2015 and currently being excavated by the Superintendency of Pisa and Livorno, is one of the most important venues for spectacles in northern Etruria. However, it appears to be an unfinished construction site, probably because its impact on the urban and geomorphological context was not properly assessed.

The geological, structural, and archaeological investigations carried out are highlighting how, during construction, difficulties arose that hindered the project, linked both to the conformation of the terrain and to the technical challenges encountered during construction.

The case of Volterra is not isolated. The construction of amphitheatres involved, especially for small cities, an often unsustainable use of resources. These communities, while wishing to equip themselves with imposing monuments, had to face obstacles that jeopardized the completion of the works. The analysis of amphitheater in Volterra allows us to explore this issue, and the case offers insights for assessing the impact of such buildings in the cities of northern Etruria, starting from:

- Their size and urban location.
- Orography of the sites, the excavation and foundation works.
- Construction techniques and materials used.

Through the case of Volterra and comparison with other examples, it is clear that the sustainability of large public works depended on the ability to carefully plan and manage the construction site. Only in this way was it possible to ensure the success of projects that otherwise risked remaining unfinished and weighing on the urban and environmental fabric of local communities.

Building Amphitheatres in Roman Pannonia - Their Effect on Urbanisation and Local Society

Linda Dobosi

After the occupation of the territory of Pannonia, the foundation of Roman cities began in the middle of the 1st century AD simultaneously with the construction of the legionary bases. Pannonia had a long section of the limes defended by four legions and additional auxiliary troops which meant thousands of Roman soldiers moving into a province on the borders of the Empire populated with Celtic tribes and surrounded by Barbarian peoples. The acculturation and romanization of the indigenous population remained skin-deep in most places of the province even in the 3rd c. AD.

Roman architecture in Pannonia was dominated by the army. From the known amphitheatres, three belonged to legionary fortresses (Carnuntum, Aquincum, Brigetio along the limes road), three further were located in the civil towns beside said legionary fortresses and two were built in civilian settlements with strong veteran communities (Scarbantia and possibly Savaria both along the Amber road). It seems that amphitheatres were partly built to fulfil the demand of the soldiers for spectacles but at the same time to support and encourage Roman urbanization processes and the distribution of Roman social habits. Amphitheatre buildings not only emanated power but as a venue for entertainment also became hubs for a wider community. They profoundly changed the cityscapes as they induced the appearance of shops and tabernae in their immediate environment.

The paper will explore how the choice of constructing a permanent building for spectacles in some cities in Roman Pannonia transformed the landscape and society in those cities and how other spectacle building types, for example theatres and circuses were not built in Pannonia.

RAC13: Roman Britain

Session organiser: Peter Guest

Since its inception, the Roman Archaeology Conference has included an open session dedicated to the archaeology of Roman Britain, but for the 2024 conference in London the session focused on the contribution of commercial and independent organisations to the study of Roman Britain. This proved to be very popular with speakers and delegates alike, and the Roman Britain session included 7 excellent papers on a variety of Romano-British sites.

This session aims to build on the successful 2024 format. Speakers present the results of archaeological projects, including excavations, initiated or led by commercial contractors, independent archaeological organisations, and local societies or communities (including multi-partner collaborative projects). Presentations explore how their results have contributed, or could contribute, to the study of Roman Britain, including RAC2026's main research themes such as new scientific applications in Roman archaeology; the latest approaches to urbanism; the role of networks in cultural and economic exchange; and theoretical frameworks aimed at decentring and decolonising Roman archaeology.

Mansio: The Story of Carlisle's Monumental Roman Complex

Frank Giecco

This paper will explore discoveries from the Uncovering Roman Carlisle (URC) project, a multi-year grassroots archaeological investigation into a pivotal site on the Northern frontier of Roman Britain part of the Frontiers of the Roman Empire: Hadrian's Wall, UNESCO World Heritage Site.

Excavations for a new Cricket Pavilion in Carlisle led to the discovery of a series of structures and artefacts spanning the almost the entire occupation of Roman Britain. Most significantly was the discovery of a previously unknown monumental Severan-era building. This building, most comparable to a mansio, is the largest known single building on Hadrian's Wall - with a hypocaust system featuring Imperial stamped tiles, and dedication connected to Empress Julia Domna. This building is linked to the Severan Imperial court's presence in Britain during the military campaigns of the early 3rd century, providing evidence of an Imperial visit to Carlisle.

This richly decorated complex has yielded a series of exceptional and fascinating objects including; two utterly unique monumental carved stone heads - the "Carlisle Heads", the largest collection of intaglios from a single context in the UK, many produced by the local Carlisle School of Engravers, painted wall plaster revealing multiple phases of redesign, over 200 pilae stamped with the Imperial mark, and other traces of high-status activities. The most recent finds from the community excavations suggest a zone of ritual and funerary use, featuring possible mausolea and temple, with finely carved sandstone sculpture, a rare portable altar, bronze tablet, and elaborate cremation burials.

This paper will illuminate Carlisle's importance in Roman Britain, connecting military, ritual, and domestic spheres, offering a glimpse into life at the edge of Roman Britain and the imperial influence that transformed it.

Epiacum Roman Fort and Its Place within the Romano-British Landscape

Frances Breen

Built around the same time as Hadrian's Wall and standing at 330 metres above sea level, Epiacum is the highest stone-built Roman fort in Britain and was likely built to control mining for lead and silver. The Maiden Way passes just downhill of Epiacum and runs between Kirby Thore and Carvoran, on Hadrian's Wall, and was likely linked to lead and silver exploitation in the heart of the North Pennines.

Most Roman forts were rectangular in plan, but Epiacum's trapezoidal form follows the shape of the gently sloping knoll on which it is built. The fort defences consisted of a massive stone wall surrounded by earthen banks and ditches which survive today as some of the best-preserved fort ramparts in the Roman Empire. While the fort is the main focus of interest here, it did not exist in isolation. Survey work in the wider landscape of Alston Moor has discovered more than twenty Romano-British farmsteads with roundhouses, including two only a few hundred metres south of the fort. These survive in today's landscape as low, turf-covered earthworks, some of them including a dozen or more roundhouses.

Many artefacts including altars, inscribed stones, coins, leather shoes, pottery and objects of lead, glass and jet have been found at Epiacum over recent centuries. While much work has been done to conduct non-invasive archaeological research - including six seasons of molehill surveys - 2026 will see an excavation of the Romano-British settlements on the site to assess the ground conditions and state of preservation. It is hoped this research will contribute not only to a deeper understanding of Epiacum and its place within the surrounding Roman settlements, but also Roman Britain and the role of these networks in cultural and economic exchange. This presentation will provide insight into the research undertaken to date and the work still to be done.

The Road to Riches? New Evidence from Excavations at Ermin Street, Gloucestershire

Tom Brindle

In 2023-24, Oxford Cotswold Archaeology (OCA) excavated several sites in Gloucestershire, as part of the A417 road scheme development. Among several sites with evidence for Iron Age and Roman activity was a site at Birdlip, located between the Roman towns of Cirencester and Gloucester, adjacent to Ermin Street Roman road. The excavations revealed evidence for early Roman quarrying, probably linked to the construction of Ermin Street, with early Roman pottery assemblages providing important insights into the date of construction of the road during the mid-1st century AD; elements of the early artefact assemblage even hint at potential cultural differences between groups associated with road construction. This quarrying was followed by the establishment in the later 1st to early 2nd century AD of a settlement straddling the Roman road, including multiple enclosures containing wells (some with evidence for ritual deposition) and corn driers. During the 2nd century AD, a building of successive phases was constructed adjacent to the road, which after a fire was reconstructed in stone. An exceptionally rich finds assemblage from the site includes a large quantity of iron tools, along with a notable number of hipposandals and other items of horse/transport equipment, raising questions as to the role of this settlement, and how it was connected with the road and its traffic between Cirencester

and Gloucester. There is little evidence to suggest that the site had any official function such as a *mansio* or *mutatio*, and it may represent a form of private enterprise that took advantage of its location adjacent to a busy communication route to exploit passing traffic. The site presents an opportunity to explore the cultural and economic impact that the establishment of new urban centres, and the communication networks that ran between them, had on rural settlements within the new province of Britannia.

Adrift on a Sea of Data: Building Narratives from 'Big Data'

Owain Scholma-Mason

In recent years Headland Archaeology has been involved in several large-scale infrastructure projects which have revealed a wealth of Roman remains. Arising from these is the challenge of how to interpret and approach these ever-growing and evolving datasets. In this talk I will outline the approaches taken on two recent large infrastructure projects to synthesizing and producing narratives of large Roman datasets from the A14 in Cambridge and Triton Knoll in Lincolnshire. Through these case studies I will explore approaches to considering these sites beyond their limit of excavation, the role and use of external data sources such as local Historic Environment Records and The Roman Rural Settlement Project, to supplement and build fuller narratives of the period.

Mapping the Imitation: Amphorae Replicas and the Question of Wine in Roman Britain

Katherine Hornak

This paper re-examines the material evidence for wine production in Roman Britain through the lens of locally produced amphorae and amphora-like vessels. Imports have long dominated narratives of wine trade and consumption throughout the empire; recent reassessments of Romano-British ceramics (many previously classified as large flagons or storage vessels) invite renewed consideration of local production, adaptation, and identity.

Using data from published excavation reports, archive collections, and comparative typological studies, this research maps the distribution of British-made amphorae and similar styled vessels across the region. Integrating this data with emerging evidence of potential viticulture and viniculture helps to explore the possibility that these vessels reflect more than imitation, but an evolving local response to Roman economic and cultural practices.

This paper could contribute to current debates in Roman archaeology by demonstrating that revisiting archived material with updated analytical frameworks can yield new insights into production and consumption networks. It therefore aligns with RAC2026's themes of applying new approaches to reconsider provincial urban and rural economies, and decentring Mediterranean-centric narratives of Romanisation.

Ultimately, this work proposes that Romano-British amphorae represent tangible expressions of adaptation, experimentation, and identity in a dynamic Romano-British landscape. This also offers supportive evidence for potential wine production in Roman Britain. Highlighting the potential for local wine production allows us to call for a re-evaluation of existing collections and data held by commercial units and independent organisations. This research illustrates how reinterpretation of archived evidence continues to reshape our understanding of Roman Britain.

The Analysis of Glass from the Roman Villa, Warkton, Kettering

Emily Harris-Taylor

This study provides a concise compositional analysis of Roman glass artefacts from Warkton Villa, Kettering, employing Laser Ablation Inductively Coupled Plasma Mass Spectrometry (LA-ICP-MS) and microscopic examination. The primary aim was to investigate manufacturing methods, raw material origins, and the circulation of glass during Late Antique Roman Britain.

Results from LA-ICP-MS show that the majority of the glass assemblage consists of natron-fluxed silicate glass, which is consistent with standard Roman glass recipes originating in the Eastern Mediterranean. Subtle differences in trace element concentrations and the presence of microscopic inclusions suggest that recycling and secondary production were taking place, probably in local provincial workshops. Additionally, the detection of residual colourants, surface weathering, and unique microstructural features points to post-depositional changes and small-scale craft modification, reflecting technological adaptation within the broader imperial trade network.

These findings offer valuable insights into the transmission of glassmaking technology, economic practices, and cultural interactions in Roman Britain. The assemblage from Warkton Villa demonstrates that rural elite sites not only acquired imported materials but also engaged in their transformation, indicating porous trade boundaries and the significant role of local producers in shaping and adapting Roman material culture.

A Virtual Reflectance Transformation Imaging (V-RTI) Approach to Romano-British Womens' Tombstones: Vedica and Her Hair/Hare

Charlotte Bell

Virtual Reflectance Transformation Imaging (V-RTI) is a photogrammetry technology, invented at the University of Liverpool, that aimed to provide local communities the ability to produce a corpus of digital conservation for inscriptions on open-air rock surfaces that could not be moved to museums. The technology has the capacity for producing high quality 3D models that reveals details and textures not visible to the naked eye, thereby confirming interpretations as well as challenging contemporary assumptions. The technology was recently (2025) conducted on the tombstone for Vedica (RIB639) as part of the author's PhD research, where significant findings were made. The original excavation report that detailed the finding of the Vedica tombstone (Watkin 1884) stated the funerary relief of the deceased wore a headdress, an observation unreferred to in today's interpretation. Furthermore, the circular object the relief's figure is holding was too weathered to identify, even in the 1800's when it was first discovered. The aim of the V-RTI was to confirm the findings of Watkin regarding the headdress, which is currently interpreted as hair, and to identify the 'circular object' the figure is holding. These areas were targeted during the photography stage, and once the V-RTI model was built, the manipulation of light sources indicated the deceased was wearing a headdress, and the object she held was a hare. In this talk, I will cover the V-RTI technology, and present the findings of Vedica's model, where I will elucidate the meaning of the hare in pre-Roman and Roman contexts, which held significance for Druidic practices.

Military Bath-Houses as Indicators of Cultural Identity and Garrison Size: Evidence from Roman Britain's Northern Frontier

James Kenneth

While military bathhouses receive limited scholarly attention compared to their urban counterparts, these structures can offer unique insights into cultural identity and garrison dynamics along Rome's frontiers. In this study I examine auxiliary bathhouses along Hadrian's Wall as indicators of the process of Romanization and demographic changes during Britain's Roman occupation (43-409 CE). This research is significant as it challenges views of military bathhouses as merely utilitarian, instead demonstrating their role in cultural identity formation among non-citizen auxiliary troops. In this way, auxiliary military bathhouses promise to provide hitherto unrecognized opportunities for understanding frontier communities and military organization.

Using comparative architectural analysis and diachronic tracking of design changes, I correlate archaeological evidence with documented garrison strengths throughout Rome's nearly four-hundred year occupation of Britain by: (1) examining the role of bathhouses in cultural indoctrination of non-citizen soldiers; (2) analyzing design changes as indicators of shifting cultural identity; and (3) establishing quantifiable relationships between bathhouse features and garrison strength. My research draws upon archaeological evidence from auxiliary forts along Hadrian's Wall and compares these to legionary forts in Britain and auxiliary forts along other Roman frontiers.

I conclude that auxiliary bathhouses functioned as cultural assimilation tools, preparing non-citizen soldiers for Roman citizenship through exposure to Roman practices. As such, bathhouses do indeed serve as excellent markers of changes in cultural identification among auxiliary troops. Stark differences between legionary and auxiliary facilities reflect deliberate imperial policy distinguishing citizen from non-citizen soldiers. Post-212 CE design changes demonstrate evolving expectations among newly enfranchised troops. The abandonment of bathhouses in the late fourth-century parallels cultural shifts toward regionalized identity, with frontier communities prioritizing local over imperial identity. I establish preliminary correlations between bathhouse capacity and garrison size, providing tools for estimating military presence where documentary evidence lacks.

RAC14: Locally Crafted Empires. A New Approach to Locally Produced Portrait Sculpture and Its Societal Contexts

Session organiser: Rubina Raja

The session Locally Crafted Empires (LoCiS) will investigate intersecting identities under changing imperial regimes by analysing locally produced representations of individuals (portraits). LoCiS situates its point of departure in the regions of the ancient world that usually are termed peripheral to the Roman world. While still being viewed as provincial and often

poorly made, intersecting and evolving identities are embedded in these regions' diverse portrait cultures. However, no attempt has been made to comprehensively collect and study these thousands of portraits in a cross-regional perspective but they have mainly been used as a backdrop to accounts of "impact of empire" on the peoples of the "periphery". These representations, however, present a globally unique material basis from which to understand the perceptions and dynamics of human self-representation under conditions of political and cultural transformation. Accordingly, the LoCiS session, which emerges from a Semper Ardens Advanced Grant project of the same name, focuses on situating these regions' rich locally produced portrait cultures in a new light, drawing on intersectionality and imperial impact studies with global outlooks to disentangle local-regional-imperial dynamics and trajectories.

LoCiS' main research questions are:

- How do local and regional entanglements with, and responses to, different imperial hegemonies express themselves in the several thousand extant portraits of individuals crafted in local materials by local communities?
- What do these portraits tell us, when studied in a *longue durée* perspective, about intersecting identities on individual, local and regional levels?

Crafting Identities in the Roman Provinces

Julia Steding

Mummy portraits painted on wood, plaster masks, and painted linen cloths are well-studied types of portraiture from Roman-period Egypt. Scholarly debates have long focused on questions of identity, both of the individuals represented and of the broader cultural influences shaping their production under Roman rule. This paper revisits these questions by moving beyond iconographic readings to consider the processes of making and the material conditions that shaped the final portraits.

Recent studies on the production of portraits at Palmyra, where local workshops, craft specialization, and the influence of materials on the final portrait have been examined in detail, provide a valuable comparative framework for rethinking the Egyptian evidence. By engaging with this scholarship, the paper explores how similar or divergent workshop practices, supply networks, and artistic conventions operated in Roman Egypt, where painters and artisans worked across traditions and materials. The Palmyrene case thus serves as a productive counterpoint, highlighting how different regional systems of craft organization and material availability informed distinct ways of visualizing social identity within shared imperial and funerary contexts.

Women and Visual Replication in Roman Near East: Notes on the Diffusion and Local Reception of Female Body Types

Giovanni Colzani

This paper aims to provide a broad overview of the diffusion and local reception of standardized body types - such as the Large and Small Herculean Woman, the Pudicitia, and the Ceres types - in female portrait statuary of the Roman Near East, in line with Jennifer Trimble's approach to visual replication in ancient portraiture. Originating in the late Classical and early Hellenistic Greek tradition, these body formats gained widespread use during the Imperial period and were commonly employed for depictions of rich women and members of the imperial family, conveying a set of rather generic ideals of honor, decorum, modesty, and feminine virtue. Their wide diffusion across the Mediterranean - most notably in regions such as Italy, North Africa, and Asia Minor - made them a true hallmark of the urban landscape of imperial cities, and a privileged medium of self-representation for elites, integrated into a shared visual koine across the Roman world.

A focused investigation of the Roman Near East may allow us to assess the degree to which its territories were integrated into this broader horizon, while also capturing the specific local forms of interaction with it. The region provides a significant number of examples in this respect, including many imported marble statues - raising the question of whether the portrait heads were executed locally - and a smaller group of limestone figures, both standing and seated, produced within regional workshops (such as the remarkable pieces from the necropoleis of Zeugma and those in the National Museum of Aleppo). Adopting a comprehensive perspective, the discussion seeks to evaluate the actual scope of these phenomena, examining how visual replication mediated between imperial models and local artistic traditions.

Portraits and Identities in the Islands of the Roman Province of Asia

Giulia Vannucci

This paper examines how island communities of the Roman province of Asia employed portraiture as a means of negotiating identity within imperial frameworks from the 2nd cent. BCE to the 3rd cent. CE. Systematic studies have largely overlooked the portrait cultures of the islands, and they have rarely been examined within transregional frameworks despite their strategic role as cultural “gateways” between mainland Greece, Asia Minor, and the wider Mediterranean.

By examining selected case studies from major islands, including Kos and Rhodes, this paper investigates how local elites negotiated between Hellenistic traditions and Roman expectations through hybrid visual languages. The juxtaposition of physiognomic realism and traditional Greek dress, for instance, reveals how communities articulated both their local distinctiveness and their connection to imperial power. These portraits reveal sophisticated strategies where communities maintained agency in self-representation rather than passively adopting metropolitan models. Concurrently, the islands’ role as intermediaries facilitated the dissemination and creative reinterpretation of portrait styles across regional networks.

By situating insular portraits within their broader social and archaeological settings, this paper highlights how even so-called “peripheral” communities articulated intersecting identities on individual, local, and regional levels. The case of the islands thus contributes to rethinking portrait cultures of the Roman East not as passive reflections of empire, but as dynamic arenas of cultural negotiation.

Artistic Production at Edessa: From Parthia to Rome

Olympia Bobou

Osroene, a small kingdom in Western Asia, was an independent state that was a close ally of the Parthian empire. In the late 2nd century, it became a vassal kingdom to Rome, until it was ultimately incorporated in the Roman empire in 214 CE. Edessa, the capital of the kingdom of Osroene, is associated with a flourishing artistic production that is best seen in the funerary mosaics of the city. The mosaics were located on the floors of burial chambers of rock-cut tombs, and showed the founder of the tomb, often within the family circle, either in bust format, or in banquet scenes. The imagery on them is, at one hand, testament to the persistence of local customs and traditions, and, at the other, influenced by trends that originated in the two superpowers that drew Osroene to their sphere: Parthia and Rome. In this paper, I explore the different iconographies and associate their production with the political changes that happened between the late 2nd century and 3rd century CE.

Faces of Southern Roman Britain

Penny Coombe, Martin Henig & Kevin Hayward

In 2021, excavations to prepare for HS2 by LP Archaeology near Stoke Mandeville uncovered three Roman-period approximately life size sculpted heads within the ditch of a mausoleum-type structure beneath the Norman old St Mary’s church. A man’s head and a woman’s head were each decapitated from a bust, while a younger girl’s head did not have an associated bust. The woman’s hairstyle of coiled plaits offers a potential avenue for dating the pieces: the closest resemblance is to styles seen on Sabina, wife of Hadrian, or Matidia, Trajan’s niece, and so an early-mid second century date is proposed. The stone was identified by Kevin Hayward as South Costwolds Jurassic limestone, the source more than 50km away.

These are a remarkable find for Roman Britain. Funerary monuments from the province tend to be reliefs, while free standing portrait sculptures or busts are rare. The form of the Stoke Mandeville sculptures is unusual, with the torsos as well as the heads carved in the round and emerging from a straight, rectangular plinth decorated with foliage sprays, rather than the more usual curving bust shape. The finds present the opportunity to contextualise these pieces in particular and portrait sculpture in southern Roman Britain in general on three levels: local, regional and imperial. In particular this paper considers: how should we place these locally, in the commemorative and stone carving context of southern Roman Britain? How does portraiture operate in this area, where other kinds of social-cultural ties such as religious dedications are more common? How (far) are regional formats (such as family groups on reliefs showing parents and a child or children, or foliage decoration) for instance from the Rhineland, relevant in this local context? Finally, (how) are these connected to imperial imagery, such that we can compare empress’s hairstyles to understand the chronology?

Seeing Through Marble: Local Funerary Portraiture in the Roman Central Pyrenees

Talia Smith

This paper presents a hyper-local style of funerary portraiture found on marble cinerary caskets (auges cinéraires) from the Roman-period central Pyrenees. Taken not as evidence of partially-‘Romanized’ provincials, but rather as things crafted using local techniques, tools, and tastes, they allow us to explore

a visual repertoire of belonging that arose from and expressed a particular situated identity. Local funerary portraits were inextricably entangled with both local landscapes and local artisanal traditions. These Pyrenean monuments must therefore be understood in the wider context of the development of an intra-regional marble industry beginning in the Augustan period. Additionally, the portraits are all framed by an ensemble of repeated geometric motifs (concentric circles, diamonds, rosettes) that demonstrate the central role of the techniques and choices of artisans in the creation of this repertoire. The omnipresence of these motifs reveal shared techniques, but the diversity in composition and execution suggest a wide variety of producers and consumers who engaged with and sustained this artisanal tradition. The corpus presented in this paper is made up of about 300 unique individual monuments that have been found in the mountains around the Roman civitas capital of Lugdunum Convenarum, today Saint-Bertrand-de-Comminges (FR), founded in the Augustan period. Because all but two have been found in a context of reuse, contextual dating is complicated. Consequently, because of their combination of 'Roman' and 'Indigenous' qualities, they have been labelled an indigenous survival or the prerogative of an agrarian class or dismissed altogether as being impossible to interpret. This paper proposes that we see them as a new tradition, entangled in changing networks of resource extraction, production, and consumption under the conditions of Roman imperialism but also essentially an innovative assertion of local belonging.

IMAGO CLIPEATA. Roman Funerary Medallions from the Territory of the Republic of North Macedonia
Anita Vasilkova Midoska

The focus of this presentation are roman funerary medallions from the territory of the Republic of North Macedonia. Tombstones in the form of a medallion are a rare occurrence and are associated with several localities and places in the southern part of the country, that is, with those areas where the great influence of Hellenic art and culture is recorded. Although they are a rare occurrence on the territory of the Republic of North Macedonia, from the aspect of portrait representations these monuments offer an exceptional insight into the artistic trends of the Roman Empire at that time.

From the aspect of artistic presentation, different levels of artistic and artisanal skill of the authors of these monuments can be observed. Thus, monuments with exceptional portrait art can be observed, but also works that are the creations of an artist who performs the works in a more rudimentary and simple manner.

Their study will be based on the research of several aspects:

- Territorial distribution and representation - namely in this aspect it can be noted for now that the majority of the monuments have been discovered along the lower reaches of the Vardar, i.e. in the area from Demir Kapija to Gevgelija.
- Degree of preservation - the majority of the monuments are partially preserved, but portrait features can be observed in almost all of them.
- Artistic expression - which is characterized by the so-called provincial art
- The correlation of these monuments in relation to other monuments within the Roman Empire, i.e. the problem of "glocalization", i.e. the correlation of global and local (provincial) influences.

RAC15: 'Curating the Romans': Collaborative Approaches to Interpreting Roman Archaeology for the Public in Museums

Session organisers: Glynn J. C. Davis, Frances McIntosh, Antony Lee & Vinnie Nørskov

Museums represent a rich resource for researching the Roman world, with institutions large and small across Europe and beyond curating vast repositories of material culture evidence. These encompass antiquarian finds, casual and (increasingly) metal-detected discoveries, and the enormous products of systematic archaeological fieldwork. Every year, public and academic researchers of all levels engage with museum collections through displays, stored collections, and online resources.

Despite their public profile, museums and their staff can become detached from the academic research conducted within and around them. Especially, since the development of theoretical archaeology in the twentieth century, the research in academia and in museums have developed into differing trajectories. In Britain, they are often considered only as facilitators of access and information rather than proactive research partners, or as the passive hosts of temporary exhibitions of 'research results'. Though often facing stringent financial and staffing

constraints, museums can be keenly aware of the exciting yet hidden research opportunities their collections offer. Despite recent calls for the creation of more meaningful academic partnerships and outputs across the archaeological ecosystem, museums generally remain peripheral when research projects are being designed.

The session seeks to explore positive collaborations between museums (and other heritage venues) and the wider archaeological sector in presenting Roman archaeology to the public. Contributions highlight innovative and inclusive collaborations, the enriching and sharing of museum data, and creative and engaging academic and public outputs, and present new approaches to rethink and reinvent exhibitions and communication of the Roman past. Through dialogues begun at the session and continuing beyond, it is hoped that new relationships across the wider world of Roman archaeology can be forged.

Roman Connections - The Museum as a Space to Connect Students, Researchers, and Museum Professionals

Lilian Dibbern & Luna Carina Liv Christiansen

The exhibition “Roman Connections” (Romerske Forbindelser) is a collaborative research initiative between the research group of the MINERVA project and the Museum of Ancient Art (Antikmuseet). The museum is a state-funded university museum, one of three connected to Aarhus University. Nonetheless, this semi-permanent exhibition is partially funded by the research project and is open from 2023 to 2028, with potential for extension.

The MINERVA project has compiled an extensive dataset of Roman road network data, based on archaeological and historical sources, to create a detailed, interactive map of the Roman Empire. This map, Itiner-e, facilitates computational simulations of the Roman Economy and is now open access.

Danish high schools use the Museum of Antiquities for their Ancient History course (Oldtidskundskab). The curriculum of these classes has expanded in recent years to include lessons on Roman History and Art, whereas they previously concentrated solely on Greece. This change in expected learning outcomes defined a need to rearrange the museum objects to align with evolving academic needs. Roman Connections offers visitors access to both Roman-period archaeological objects and plaster casts of Roman portrait sculptures, as well as access to Itiner-e and a narratological choose-your-own-adventure (CYOA) game.

The aim of this paper is to explore how the exhibition brought together various types of researchers within the museum and how student collaboration served as both a driving force and resource. We will discuss the collaborative project management structure regarding student agency, from conceptualizing the exhibition to creating the exhibition. Additionally, provide an example of how students developed creative initiatives to further foster inclusive, collaborative environments for visitors. This exhibition’s conceptual development process involved utilising the museum space and collaborating with the museum to address their requirements, designing a space for both individual visitors and educational groups.

‘Not My Soul’: Curating an Exhibition on Transatlantic and Roman Slavery

Eva Mol

Between 20 Nov 2025 and 24 May 2026, the Allard Pierson Museum in Amsterdam hosts the exhibition ‘Not my soul’ Slavery, Law, and Freedom, initiated by the Dutch National Slavery Museum. As curators we wanted to create a dialogue between two periods in which slavery was institutionalised, placing the stories of enslaved people in Roman antiquity and colonised Suriname at the centre. Roman law has been used as justification and tool to implement colonial slavery, which had the effect that in both periods enslaved people were considered ‘objects’, had no personhood, were not allowed to marry, and their bodies and time belonged to their owners, not to them. We wanted to show the effects of this dehumanisation on people, but mostly we wanted to show how people found ways of being human despite of this. How enslaved people created new forms of kinship, religion, and language, how they were engaged in craftsmanship and art, using the archaeological and colonial collections of the museum as well as contemporary art.

Curated by specialists in Mediterranean archaeology, Roman slavery, and Dutch colonialism, consisting of slavery-descendant curators and working with Dutch slavery-descendant communities and creatives as well as international artists, this exhibition was a unique collaboration. The effects of the racism-based colonial slave period are still very present in society, for many people this exhibition is therefore not about history but is a deeply felt and lived intergenerational trauma. Furthermore, within this context the museum as an institute is perceived as a bastion of white colonial authority; so why and how should we tell this story, and what position should the Roman past take in this? This paper will focus on these

issues and the challenges we encountered, navigating the spaces of diverse and often conflicting voices, considering the ethical challenges, and our own and other people's emotional involvement. We want to share what we learned through our discussions about curation and museums in dealing with such a complex and harrowing subject like slavery.

From Hidden Fragments to Living Heritage: An Innovative Approach to Reimagining Roman Emona for Contemporary Audiences

Nejc Kovačič & Bernarda Županek

The heritage of Roman Emona in Ljubljana presents unique challenges for interpretation and communication. Unlike a single monumental site, Emona's remains are scattered across ten locations integrated into the living fabric of the city centre. Despite their modest scale, these fragments powerfully connect past and present. For many years, however, they lacked a coherent identity and visibility within the competitive heritage and tourism landscape of the Slovenian capital. In 2024, a new concept was introduced. The project was renamed Arheopark Emona and equipped with a contemporary visual identity inspired by Roman motifs and bold modern design. This urban, decentralised "archaeological park" redefines what a Roman site can be in the 21st century, forming a network of everyday places where heritage lives alongside modern life.

Anchored in the City Museum of Ljubljana, the starting point for exploring the park, the museum basement combines an in situ Roman display with regular exhibitions of recent archaeological discoveries from the city centre. The project bridges museum interpretation and urban experience. Through this ongoing work, archaeological heritage is continuously recontextualised: recent finds are exhibited, interpreted, and discussed in collaboration with cultural institutions and local communities. This approach raises public awareness of the complex processes behind heritage preservation, highlighting professionals involved and explaining why patience is essential when archaeology temporarily intersects with city development. Public programming and interpretation play a key role in transforming non-spectacular remains into meaningful experiences. Across the park's various locations, stories are curated instead of monuments through open-air theatre, guided tours, religious ceremonies, and festivals, inviting citizens to engage directly with the archaeological sites and to live with their heritage rather than beside it.

By combining design, research insights, and participation, Arheopark Emona demonstrates how museums can move beyond traditional displays to collaboratively reinvent the communication of Roman archaeology for contemporary audiences.

Exhibiting the Fieldwork in Saint-Bertrand-de-Comminges (France) - About Exhibition of Ongoing Archaeological Projects

Julie Quere

Drawing on doctoral research, this paper analyses exhibitions dedicated to ongoing scientific projects, examining the interplay between archaeological practices and museums when addressing the public. "Too often, museums act as a repository for archaeological material once the archaeologists have finished with it, and museums accept this role passively," wrote Hedley Swain in his Introduction to *Museum Archaeology* (Swain 2007, p. 12). In France, the term "archaeology" in museums encompasses both the artefacts on display and the methods that led to their discovery and interpretation. However, exhibitions are still reluctant to adopt an object-centred approach to Roman archaeology. Consequently, it remains uncommon for the discipline and its practices to be the subject of an exhibition, a situation that is not unfamiliar to the museum acting as a repository.

To challenge this dynamic, this paper explores the potential role of museums in shifting the focus from archaeological objects to archaeological projects, using the exhibition "Archéologie au village" in Saint-Bertrand-de-Comminges as an example. This exhibition was curated by the author at the local archaeological museum of this ancient Roman city, in collaboration with a scientific project engaged in public archaeology conducted by EPHE-PSL.

To assess the influence of such collaborations on how exhibitions interpret and communicate the Roman past to the public, demonstrate how exhibitions are structured in France today is a prerequisite. This encourages a reframing of exhibition discourse through innovative linguistic and epistemological approaches.

Another aspect to explore in relation to this exhibition is the influence of the curator's interaction with visitors on the field. Assumptions about visitors' expectations and how they actually perceive the discipline emerge as a key factor in shaping new narratives for Roman archaeology. Regular contact with the field and the public ensures greater accuracy in addressing the issues raised by the exhibition and meeting public expectations.

Between Tomb and Treasure: Interpreting Roman Collections from the Algarve (Portugal) Necropolises as National Heritage

Patricia Brum & Carlos Pereira

This study offers a critical and collaborative reflection on how Roman archaeology has been classified, interpreted, and displayed to the public in Portuguese museums, focusing particularly on the movable heritage officially designated as “national treasures”, and more specifically on a selected assemblage of Roman artefacts recovered from necropolises in the Algarve region.

Drawing on the doctoral research of one of the authors (Carlos Pereira), which systematically studied the Roman necropolises of southern Lusitania, this paper re-examines these funerary artefacts as emblematic cases within the corpus of Roman-period objects recognized as “national treasures”. These collections are intrinsically linked to the pioneering work of Estácio da Veiga, whose late nineteenth-century excavations represented the first systematic archaeological investigations in the Algarve. Even if they were collected as part of a project to establish a regional museum, they are nowadays part of the National Museum of Archaeology, undergoing renovation.

The paper argues for a critical reassessment of the criteria by which these objects have been selected among a larger set of objects and classified and valorized as the most representative expressions of the Roman past and particularly their funerary spaces, explored as key expressions of cultural, religious, and social identities.

By reinterpreting the Algarve's funerary material through critical heritage thinking, this study engages with current debates on the impact of archaeology within national heritage policies. Moreover, it examines how Roman material culture—particularly grave goods and small finds expressing cultural identity—has been included constructing narratives of national belonging and memory in Portugal. Through an interdisciplinary dialogue, connecting archaeological scholarship with museological practice, the research aims to propose alternative, reflexive approaches to curating Roman collections that move beyond traditional object-centered displays toward more inclusive interpretations.

disiecta membra: Finding the Stone Buildings of Roman Germany in the Depot

Thomas Heide & Catherine Teitz

Very few Roman buildings in Germany are still standing; more often they served as quarries and their foundations lie under modern cities. Roman architecture survives as individual elements (*disiecta membra*) held in museums and depots. These pieces are neither well-known nor consistently published, making it difficult to study architectural and urban history. The 24-year (2023-2046) project “*disiecta membra. Steinarchitektur und Städtewesen im römischen Deutschland*,” aims to collect, document and publish all Roman stone architectural elements in modern Germany. The result will be a dynamic, networked digital edition that links an estimated 30,000 architectural pieces, including their contexts and histories, and 5,000 structures. The data is recorded, synthesized from different research traditions and documentation systems, and published open-access. Yet these outcomes would be impossible without collaboration between the team and the museums and heritage management offices that hold the material. The first three years of the project have focused on Mainz (*Mogontiacum*) and the collection of ca. 1,500 architectural fragments held at multiple institutions. Working together closely, the project and these institutions have developed an interlinked process that synthesizes legacy data from the archives, thoroughly records the objects, and produces information that feeds the particular needs of the databases on both sides. This relationship allows the project to situate the collected objects in a wider context than any individual institution could, but it also supports the institutions in thoroughly recording and publishing the ever-growing collection of archaeological material. While the workflow was developed in Mainz, it could be applied to any collection of architectural material, to the benefit of both researchers and museums. Only through working together will it be possible to reassemble the architecture of Roman Germany from its many *disiecta membra*.

How Many People Does It Take...to Publish a Corpus? Collaborating on Latin Inscriptions in National Museum in Warsaw

Adrianna Gizińska & Tomasz Dziurdzik

This presentation introduces the ongoing project to create a new catalogue of Latin inscriptions in Poland, starting with the largest group, in the Collection of Ancient Art at the National Museum in Warsaw. The work aims to replace Anna Sadurska's 1953 volume and scattered later publications, consolidating and revising current knowledge in a modern corpus. The project arises from multiple factors: new discoveries of yet unpublished monuments, erroneous readings, and the need to integrate text, materiality, and biography of the objects.

It is conceived as a collaborative and interdisciplinary initiative involving museum professionals, archaeologists, epigraphists, and art historians. Applying methods such as 3D documentation, Reflectance Transformation Imaging (RTI), and archival research, the project takes a holistic approach,

treating inscriptions not only as texts but as physical artefacts with complex ancient and modern histories – collected, reinterpreted, and now curated as museum exhibits.

The inscriptions under study, mostly acquired in the eighteenth and nineteenth centuries by aristocrats, collectors and scholars following European fashions for antiquities, exemplify how Roman material culture reached Central Europe and was reinterpreted. A key case study will focus on a misread military tombstone from Nikopolis near Alexandria in Egypt, alongside examples of still unpublished inscriptions, illustrating the urgent need for a new edition.

Beyond producing a critical catalogue and digital documentation, the project actively investigates how Latin inscriptions can be used to craft richer museum narratives and public engagement strategies. Storytelling here is not limited to textual interpretation: it integrates the physicality, visuality, and biographies of the objects to create layered, visitor-oriented narratives. By situating Polish collections within broader debates on Roman heritage and its influence on the culture of a country outside the actual frontiers of the Roman world, this initiative demonstrates how museums can play an active, collaborative role in interpreting and presenting the Roman past.

Do You Have a Problem with Parachutists? Have You Been Bothered by Bungee Jumpers? Some Ideas on Supporting Scientific Collaborations between Museums and the Lab

Peter Bray, Lynn Gayford & the REMADE team

There is a well-worn genre that is full of horror stories: how can the sciences and humanities get along? Papers include stories of scientists “parachuting in” with little regard for the project, or even worse “bungeeing in” and bouncing out with data, never to be seen again. Apart from conservation, discussions on the role of scientists in archaeology rarely cover the purpose of museums. We agree with the organisers that, if considered at all, museums have been often seen by scientists as the safe storehouse that will provide access to samples.

This paper is based on the experience of our partners in the Roman and Early Medieval Alloys Defined Project (REMADE), University of Reading. This is a long-term collaboration of over fifteen institutions of every size and type within the UK’s heritage sector. Together we are analysing over 20,000 copper-alloy objects with a variety of chemical techniques. It represents an attempt to change our academic understanding of Roman metallurgy, and to also create lasting collaborations across British heritage.

Early in the project we commissioned a report, by Lynn Gayford, on our partners’ previous experience of archaeological science, and their thoughts on collaboration. This paper discusses advice on areas including training, engagement with the public, building meaningful partnerships, and long-term strategy. Now that we are in the middle of REMADE, we will reflect on how our project experience compares to our initial aims.

We will also discuss some of the scientific stories: how they have been co-created, what has surprised us, and how we can present them to different audiences. Of key importance are the concepts of scientific data and information. Data is often specific and defined, but to be informative it needs to be placed in its full context, where it can contribute to a richer, collaborative, web of ideas.

“But, What Am I Supposed to Look For?” - Museum Visitors’ Encounters with the Roman Past in The New Carlsberg Glyptotek

Julie Lejsgaard Christensen

During the 19th century, Northern European museum presentations of material culture from classical antiquity segregated into two overall approaches: the ‘aesthetic mode’ and the ‘archaeological’ (or: ‘scientific’) mode of display. In particular, displays of classical sculpture came to be dominated by the aesthetic mode. Here, sculptures were exhibited primarily as aesthetic works of art, intended to speak for themselves through their immediate aesthetic impact and to resonate innately with the spectator without didactic explanations or contextualization.

To this day, many museums’ displays of classical sculpture continue to be informed by the aesthetic mode. Its impact on modern-day visitors’ reception of classical antiquity remains, however, an understudied field. Although the fields of museology and visitor studies have demonstrated the importance of understanding visitors’ museum experiences and of employing visitor surveys as a tool for qualifying and developing curatorial practices, remarkably little attention has been directed towards visitors’ experiences in exhibitions of classical archaeology.

This paper contributes to filling the void by presenting a data-driven analysis of visitor experiences at the New Carlsberg Glyptotek in Copenhagen, a 19th century museum where the aesthetic mode of display continues to inform curatorial practices. Through visitor surveys in the Glyptotek’s display of Roman Imperial portraits – an object category which may especially call for cultural-historical contextualization – the paper investigates how the curatorial strategies inherent to the ‘aesthetic mode’

of display affect modern day visitors' reception of the Roman past as well as their perception of - and engagement with - the exhibited objects.

The paper not only illuminates the reception of the Roman past that emerges from the encounter between the Glyptotek's historical mode of display and a modern-day museum audience; it also demonstrates how a combination of the disciplines of classical reception, museology, and visitor studies may benefit and qualify the curatorial practices of classical antiquity museums.

From Sounding Board to Showcase - Co-Creating the Story of the Harzhorn Battlefield

Dominique Ortmann & Ina Schimmel

An inconspicuous, heavily corroded iron object - initially mistaken by its finders (illegal metal detectorists) for a medieval candlestick - turned out to be a hipposandal. This marked the start of an extensive archaeological campaign to investigate the Roman-Germanic battlefield at and around Harzhorn (Northeim district, Lower Saxony, Germany). The initial findings from this battle were presented in a major state exhibition "Rome's forgotten campaign. The Battle of Harzhorn" at the Braunschweig State Museum in 2013. What had long been considered unthinkable was disproved by more than 2,700 military finds. A Roman legion was on the move far north of the Limes around 235/236. An archaeological sensation!

As part of the redesign of the permanent exhibition, the Harzhorn event now occupies a central place in the main building of the museum. Visitors will learn, among other things, what the battle was like, whether the victors can be determined, and how the battle can be dated. But what do visitors actually expect from the presentation of archaeological content? What happens to the exhibits in the exhibition after the archaeological site has been scientifically processed by the monument authority and the university and before they are staged in the museum?

Answers are provided by our "Sounding Board": a group of committed, museum-savvy private individuals who discuss selected objects and educational approaches with the curators. This participatory collaboration opens up new perspectives on the museum presentation of Roman archaeology. In our presentation, we introduce the project, its results to date, and the challenges involved.

Beyond the Stones: Collaborative Storytelling in Roman Brescia (Italy)

Andrea Berettera

The Archaeological Park of Roman Brescia (Italy), together with its archaeological collection in the civic "Museo di Santa Giulia", offers a compelling case study for examining how Roman urban and domestic spaces are curated and communicated to the public in Italy. Renowned for its Capitolium, forum remains, and richly layered museum collections, the site embodies the opportunities and challenges of presenting complex Roman heritage in an accessible and meaningful way. This paper explores recent efforts to reinterpret Brescia's Roman past through collaborative and research-driven curatorial strategies, highlighting how academic archaeology, museum practice, and community engagement can be brought into productive dialogue.

Drawing on exhibition analysis, in situ observation, and interviews with curators and stakeholders, the study examines how the museum and archaeological park mediate between material evidence and broader cultural narratives of Roman identity, power, and daily life. Particular attention is paid to the integration of textual, visual, and spatial storytelling techniques, and how these are used to frame Roman Brescia as both a local heritage asset and a site of broader historical significance. Issues of accessibility, inclusivity, and narrative coherence are evaluated within the context of interpretive strategies and institutional constraints.

By situating Brescia within wider debates about the role of Italian museums and archaeological sites in shaping public understandings of the Roman world, the paper addresses both the potential and limitations of current heritage practices. It argues that Brescia exemplifies a growing movement toward more collaborative, reflexive, and publicly engaged approaches to Roman archaeology. In doing so, it contributes to broader discussions about how museums and archaeological parks can become active agents in the co-production of knowledge, rather than passive repositories of research outcomes.

RAC16: Archival Fieldwork: Filling the Gaps

Session organisers: Jen Baird & Rubina Raja

The archival turn in archaeology has demonstrated not only that archives can be rich resources for studying the ancient world, but also that they can be archaeological sites themselves, with all of the challenges for study and engagement that traditional fieldwork holds. Archival fieldwork is under rapid development and in recent years much new research has tackled case study sites and institutions, which hold such material. This session aims to bring together scholars (including archivists, those interested in digital approaches, and historians of archaeology) to consider current methodological approaches to archaeological archives.

Archaeological archives are often characterised by dispersal of materials - not only dislocated from their places of origin, but also dispersed often across several institutions - as well as by a diversity in material(s), and often incomplete and partial. What methods do we need to be able to address such challenges in utilising archaeological archives, both to understand better the ancient Roman past, and the history of the discipline? Are there examples of best practice of archival fieldwork? Should archival practices be part of archaeological pedagogy?

Archival Fieldwork between Fragmentation and Reconstruction: The Case of the Fora of Rome and their Christian Graffiti

Christina Videbech

The project The Fora of Rome and their Christian Graffiti (FROG) explores the Christian graffiti scratched into the monuments of Rome's fora between the 4th and the 8th centuries. These graffiti, often overlooked in traditional scholarship, survive in highly fragmentary form not only materially on the monuments themselves, but also within archives. Excavation notebooks, drawings, photographs, squeezes, and early epigraphic corpora preserve traces of graffiti that are today lost, weathered, or inaccessible. Yet such records are themselves dispersed across multiple publications, often incomplete, and embedded in disciplinary practices of recording and classification. Furthermore, their quality and focus were also shaped by the politics and scholarly biases of the time. Paradoxically, many 19th-century antiquarians documented the graffiti with greater care and precision than did much of 20th-century archaeology, when epigraphy and field recording often privileged other kinds of evidence. Based on the experiences of the FROG-project, this paper considers how archival fieldwork can be mobilised to reconstruct the Christian landscape of the Roman fora and to trace the scholarly, antiquarian, and devotional engagements that have shaped its documentation. It argues that working across these fragmentary records constitutes a form of archaeological practice in its own right, demanding strategies of collation, contextualisation, and digital integration. By reflecting on the challenges and possibilities of such archival assemblages, the paper positions the fora's Christian graffiti within broader debates on how we reconstruct ancient urban life from fragmentary textual traces, and highlights how archival practices themselves can open new methodological pathways and reveal fresh evidence for the discipline of archaeology.

Picking Up the Pieces: Models, Practices, and Results of Archive Creation and Analysis from Oplontis Villa B (Torre Annunziata, Italy)

Jennifer L. Muslin

Backlogs of uncatalogued material are a universal problem in archaeology, especially for "big digs" with long, complicated excavation histories like Pompeii. Careful study of this legacy data, however, can lead to new discoveries and problem solving. In such cases, preparation, publication, and preservation of material inherited from previous excavations, including artifacts, paper records, and testimonials, creates an archive that encompasses both the archaeological data and the story of the excavations themselves. It is a vital part of understanding a site's history, allowing one to question and reevaluate longstanding assumptions about its interpretation and formation.

Using two unsorted piles of ceramic and organic material from the first century CE Roman amphora packaging center of Oplontis Villa B near Pompeii as a case study, this paper offers some perspectives and models for successfully creating and utilizing archives in archaeological analysis. Excavations in 1974-1975 mostly destroyed the architecture and contexts in the center's south side upper floor rooms and lower Room 1 but produced considerable amounts of pottery, especially amphoras, and building material that remained largely uncatalogued. In 1991 workers caused further disruption by relocating the finds, separating sherds with epigraphy, and reconstructing a small percentage of vessels broken during digging. Certain objects were subsequently removed and inventoried. Everything else was left in

two large piles, until I began processing them in 2017 and 2023. The selective nature of the original collection process skewed the number and representation of amphora types recorded in the room, which in turn led to interpretations, based on incomplete evidence, that Room 1 was a grand cru for imported wines. My analysis complicates this hypothesis, suggesting that there was a much larger suite of materials and activities undertaken in this part of the building, and demonstrates the viability and potential of archive creation and use in Roman archaeology.

Opening the Notebooks: Making Legacy Data Accessible at Corbridge

Catherine Teitz & Frances McIntosh

The mid-twentieth century excavations at Corbridge spanned over 40 years and produced thousands of objects. While many finds were accessioned into the museum and a selection were published, the full scope of the material is difficult to analyze due to the excavation practices. The excavations recorded finds in large batches without consistent location information. As the finds have been entered into the museum's modern database, the lack of clear context for many has made it impossible to understand the range and distribution of material across the site. The Corbridge Finds Project began in 2021 with two goals: to understand what objects had been excavated and to create the first site GIS, in part to analyze object distribution. Phase 1 of the project, the objects, parsed and standardized over 7,000 entries from the excavation notebooks using a computational text extraction method. The result is the CorFinds database of excavated material with more than 23,500 unique records that are searchable by object type, material, and fabric. Phase 2, the mapping, documented the visible structures on-site and integrated the historic excavation information using GIS. The structures can be consistently identified and linked to the excavation contexts, making spatial analysis possible for the first time. The results not only shed light on the archaeology itself but will also provide a foundational resource for future research, all of the data will be available freely online. This project makes clear the full scope of the mid-twentieth century excavations at Corbridge while demonstrating a methodology for modernizing difficult legacy data.

Unveiling the Past: Organising and Analysing the Archaeological Legacy of Novae

Mariya Avramova

The Roman legionary camp known Novae, located in present-day Bulgaria, was established in the mid-1st century AD as one of the numerous military outposts tasked with safeguarding the Roman limes. During Late Antiquity, this camp evolved into a settlement and served as a bishop's seat. Novae's significant contribution to the establishment of Roman influence and culture in the region has attracted considerable attention from archaeologists, prompting the initiation of joint Bulgarian-Polish excavations in 1960.

In accordance with the agreement between the Bulgarian and Polish research teams, the archaeological documentation was submitted to the National Archaeological Institute with Museum at the Bulgarian Academy of Sciences. Over the years, this documentation has accumulated to more than 360 archival units, encompassing over 26,151 pages. This extensive collection represents a valuable resource for examining the longstanding collaborative research efforts between Bulgaria and Poland. However, as of 2024, the collection remained disorganised and unexamined.

In 2024, the author, an archaeologist with over ten seasons of field experience at Novae, was assigned the task of organising this substantial collection, which is notably composed of materials written in three languages: Bulgarian, Polish, and Russian. This paper outlines the process of reviewing the archival data, identifying gaps, establishing organisational criteria, and addressing the challenges encountered throughout this endeavour. Furthermore, it explores the research potential inherent in the archaeological documentation for the study of the fieldwork history and the field of archaeological practice more broadly.

Reading Between the Lines: Critical Considerations on the Editing and Publication of a 19th-Century Transylvanian Antiquarian's Manuscript

Orsolya Szilágyi

This paper focuses on the unpublished manuscript of Lugosi Fodor András, an often-overlooked Transylvanian antiquarian active in the first half of the nineteenth century. During his tenure as chief medic of Hunedoara County, Fodor compiled an extensive and richly illustrated record of Roman archaeological sites and artifacts from the region, including many items once held in private collections. Although he intended to publish his work, the manuscript never reached print. Today, it offers information about objects and sites that have since disappeared, even as it reflects the clear limitations of a self-taught antiquarian. By revisiting Fodor's manuscript and the conditions of its creation, this study considers both its historical and scholarly value, and the broader implications of editing and publishing such a document in the present.

Beyond Digitization: Archaeological Archives as Learning Laboratories

Anne Chen

How can we transform archives connected with archaeology's problematic past into opportunities for intergenerational and intercultural dialogue, cooperative action, and critical skills-building? This paper draws on the experience of developing the International [Digital] Dura-Europos Archive (IDEA)--an award-winning digital humanities initiative centered on a long-studied Syrian heritage site with deep interdisciplinary significance--to argue that the digitization of archaeological archives opens new opportunities for remote collaboration with globally-situated heritage professionals, practice-led research, and practical skills development for students and professionals alike. The paper will introduce IDEA's pioneering use of the Wikimedia ecosystem to bridge accessibility gaps and knowledge silos that stem from unequal power dynamics and political structures in place at the time of the Dura's Mandate-era excavations, and will highlight the project's design as a learning laboratory whose 'cascading mentorship' creates hands-on learning opportunities for both students and professionals. This approach offers opportunities to build skills in data literacy, critical archival practice, and foundational research methods, while increasing familiarity with emerging Linked Open Data (LOD) methods that are revolutionizing information management in the cultural heritage and GLAM sectors.

Modern Contexts for Excavated Objects: Two Case Studies from the Harvard Art Museums

Caitlin Clerkin

Through two brief case studies of dispersed material from interwar "big digs" now at the Harvard Art Museums, I'll reflect on two domains of archival fieldwork--archival archaeology and provenance research--from a curatorial perspective. I suggest that taking a more capacious view of, on the one hand, what it means to contextualize an excavated object and, on the other hand, of provenance (i.e., beyond lists of prior owners) opens the way to tell more deeply textured and critical stories about the modern lives of ancient objects to nonspecialist publics.

I'll first discuss the case of 85 fragments of painted plaster excavated at Dura-Europos stewarded by the Harvard Art Museums. A recent cataloguing project prompted exploration of their provenance: the facts and circumstances surrounding their acquisition by the Fogg Museum in the 1930s and 1940s. Research revealed that they were given as technical samples of painting to the Fogg, an emerging center for technical art historical and material study, which means (and explains why) they "lived" a particular kind of life after excavation. This case calls for broadening focus beyond the archaeological site to include later moments in excavated objects' lives.

In a second brief case study, of an Antioch mosaic in the Harvard Art Museums' care, I argue that archival research into histories of excavation can productively broaden discussions about the excavation context of an object. As a curator in an academic art museum, I often include a fragment of a mosaic floor from Antioch in classes about provenance. I will discuss my recent archival research into excavation labor practices and personnel at the 1930s excavations of Antioch/Antakya sponsored by the Committee for the Excavation of Antioch-on-the-Orontes and Its Vicinity. I'll then reflect on what bringing this history into the frame contributes to discussions about provenance.

RAC17: Villanous Problems: Excavations, Archives, Ethics and Innovation

Session organiser: David Roberts

Roman 'villas' remain one of the most totemic forms of site in public discourses of Roman archaeology in the north-west provinces, and are very commonly the focus of excavation. In the UK this is often by community or academic research projects. Whilst we continue to excavate villas apace, there remains a very significant proportion of previously excavated examples which languish without full publication in (at best) museum archives, or (frequently) private archives of groups or individuals. In recent decades, commercial archaeology in the UK has also undertaken many villa excavations, and has sometimes found moving to full publication challenging. None of these problems are unique to this class of Roman site, but the combination of villas' often rich material culture, environmental assemblages and architectural elaboration, with their repeated selection for excavation, perhaps means that they bring these issues into focus particularly sharply.

This session seeks to consider innovative theoretical, methodological and organisational approaches to analysing and publishing these sites. The aim is to illuminate these issues and

spark inter-provincial and interdisciplinary dialogue on such approaches and questions, whilst also demonstrating a diversity of approaches to successfully moving from archive to publication where much, or all, of the archive was generated decades ago and is incomplete or challenging, and/or funding is insufficient. Furthermore, this session will consider the ethics of continuing to excavate these sites. Recognising that the interpretation of villas remains highly centred on elite people and lifeways, can these innovations in archival analysis be combined with new, more symmetrical, theoretical approaches?

Rescuing the Villas of Roman Britain from Archaeological Oblivion?

Simon Esmonde Cleary

Having been deeply involved in the research on and publication of a large, emblematic Romano-British villa, Chedworth (Glos.) I want to offer experiences and thoughts arising from these as a contribution to how things might be moved forward. The publication project on Chedworth became possible because it suited the agendas of two parties: the landowner and a university. The National Trust as landlord wanted to re-present the site, expanding the visitor base. To do this it needed to know what it was dealing with and Chedworth remained unpublished. The University of Birmingham saw that this project would in time yield REF-able results.

The lesson to draw from this is that a publication project can play to the interests of a range of parties, and obviously not just Roman villas. Those interested parties can be institutions, they can be individuals. Institutions such as commercial units would like to see their field projects published for academic and ethical reasons, but how and who pays? Individuals within units such as site directors and specialists have careers to progress through publication. Universities and academic institutions such as museums and individuals within them have their agendas. One might well advocate 'case conferences' to identify exploitable sites or material.

Romano-British villa studies have developed significantly over the last decade and more, especially perhaps in the 'long fourth century'. A major weakness clearly remains in our appreciation, such as it is, of the place of villas within the wider social and economic landscapes, but that is not an argument for ignoring villas with their importance in those landscapes. Moreover, one result of the Chedworth project was greatly increased visitor numbers and satisfaction. The general public can relate to villas and through them learn more about a wider range of the people of Roman Britain.

Beyond "Elite": Squatters and the Subaltern on Late Roman Villas

Sarah Beckmann

My paper re-examines archaeological evidence for late Roman villas in order to challenge and critique their longstanding - and frankly, tired - association with the elite. Understanding owners as absentee *domini*, I highlight non-elite groups on and around villas, to better understand the shape, orientation, and gradual evolution of rural hierarchies in the Roman world. But this innovative approach, which reacts to the ubiquity of subaltern populations and their relative invisibility in scholarship, is complicated by the evidence itself: sub-elite material culture tends to be selectively preserved and poorly published. Thus my paper balances analysis and reflections on method: I investigate villas as windows onto the full breath of Roman society, and admit the challenges of doing this work with archival evidence and previously excavated sites, thereby signaling directions for future research and excavation.

I begin by considering evidence for so-called "squatter populations" on villas in southwestern France (5th-6th centuries CE), long after the cessation of aristocratic occupation. Their repurposing of the *pars urbana*, I argue, evinces the autonomous initiative of subaltern groups who had always resided around these sites. Their continued presence is an indispensable component of my broad redefinition of villas as rural interfaces that functioned independently from their owners, more often than we assume.

I then look back on the floruit of the late Roman villa (3rd-4th centuries) to bring attention to laboring folk. Obfuscation of such groups, I argue, has grossly hindered recognition of sub-elite roles in the so-called late antique villa boom, both as actors in their own right and as pawns in rural power negotiations. Careful and patient attention to their fragmentary lives - using previously excavated sites and material culture - is poised to contribute significantly to our understanding of the Roman villa.

The Sijpeveld Villa Project: New Methods for Dutch Villa Landscapes in the 21st Century

James Dodd

The villa landscapes of the Netherlands have, until very recently, been a neglected part of the Dutch archaeological framework. Located in the far south of the province of Limburg, on different soils and with an archaeological tradition different from the limes-focused archaeology of the frontier zone, only three have been coherently examined since the Second World War. The 'golden age' of villa

archaeology, between the 1850s and 1930s, has given us most of our knowledge on these sites and naturally there are major gaps in our understanding. Many of these sites have subsequently been protected, making research-based work difficult. In 2025, The Sempelveld Villa Project was launched to begin to rectify these issues. This project tested a range of field survey techniques and geophysical prospection at two known villas and one suspected site (Vlengendaal, Dellender/Butterweiden and Orsbacherweg) in the south-east of Limburg. It aimed to establish a procedure for extracting information from these sites, initially using non-destructive approaches. This paper presents the results from this project. It will discuss the current administrative problems and history of villa archaeology in the Netherlands as well as the methods applied to the selected villas and the results from this. Finally, it will present the outlook for future work within this framework and the future of the Sempelveld Villa Project.

Lies, Damn Lies and Statistics: Recovering and Interpreting Within-Deposit Artefact Distributions at a Roman Villa

Greg Campbell

There is a contrast in European excavation practice between European historic-period archaeologists, such as Romanists (relying on on-site hand-retrieval of artefacts during excavation, grouping them by deposit) and European early prehistorians and New World archaeologists of all periods (relying on sieving for retrieval of artefacts, grouping them by grid-squares within a deposit). Does this difference in fieldwork practice matter? Are historic-period deposits too 'time-averaged' to merit the considerable extra time and effort gridding, sieving and sorting requires? Employing the new guidance for investigating shell-rich deposits on a shell-midden at a villa in southern Britain led to several accidental insights critical to interpretation: the 'shell-midden' was not a shell-midden: the principal artefacts in the deposit were not the most visible artefacts; one type of artefact only came to light because of sieving; the artefact content dramatically differed across the space of the midden; using simple well-established statistical methods on this pattern of artefact difference led to a clear interpretation of the activities which led to the making of the midden.

Artefacts in Roman-period deposits are not always 'time-averaged' beyond interpretability. Deposits are not homogeneous, and that heterogeneity matters. Dissecting substantial deposits (either physically extensive or thick) into their closely physically associated artefacts, and recovering those artefacts reliably from those dissected elements, reveals human behaviours and practices in the Roman past.

Sculptural and Relief Architectural Decoration of Roman Villas in Istria

Alka Starac

The subject of the paper is the sculptural and relief architectural decoration of the Roman villas of Istria, recorded in several of the most luxurious, predominantly maritime villas in Verige bay, Valbandon, Vižula, Polari, Dragonera, Marana and Barbariga, all in the territory of the Roman colony of Pola. Stone sculpture includes fragments of statues of the owners, their ancestors or prominent Roman citizens, statues of gods and mythological creatures, herms and sculptural fountains. Villa in Verige bay on Veli Brijun island with its own temple complex stands out for its rich sculptural and relief architectural decoration. Next comes the villa in Valbandon, which provides a more complete insight into the sculptural decorative program. The iconographic types of recently found herms from Valbandon and their meaning are analyzed. The villa in Barbariga is the only one with a sacellum recognizable in plan, equipped with marble relief architectural decoration and a richly decorated cornice. Other less lavish villas contained capitals decorated with relief leaves. The relief architectural decoration of villas in Roman Istria is dominated by Corinthizing capitals, and next to them there are Ionic and Corinthian capitals with plain leaves. The choice of capital types differs strongly from the public architecture in Pola, dominated by the classical Corinthian capital. An analysis of the choice of motifs, stylistic features and the datation of sculptural and relief architectural decoration completes the picture of the iconographic program of villas of members of the highest classes, showing an original individual approach within the framework of the canon.

Stone Buildings Collapsed En Bloc Like A House of Cards - A Search for Causes

Sarah Roth

Among the most spectacular examples of Roman en bloc building collapse in South-West Germany are undoubtedly the collapsed walls at the villa sites of Oberndorf-Bochingen and Hechingen-Stein. Several walls, two of them over 10 meters high, collapsed to the sides like a house of cards, and when excavated, offered a rare glimpse into the region's ancient architecture with windows, gates, and details of the facade design still in their (secondary) horizontal position.

These impressive features, however, raise questions beyond the buildings' architecture. The most obvious one: What caused these walls to collapse? The proximity of both sites to a regional epicenter of earthquakes, seems to provide an answer. However, the case is more complex and needs to be

tackled with interdisciplinary approaches. An archaeological-archaeoseismological project is currently attempting to explore the methodological possibilities to find the individual cause(s) for the collapse of these walls.

For Building 4 in Oberndorf-Bochingen, a discrete-element model based on the excavated features is being used. This model will be combined with the results of measurements of the vibration behaviour of Building B1 in the Reinheim-Bliesbruck Cultural Park, which was built based on the Oberndorf-Bochingen excavation. Finally, the model is subjected to virtual earthquakes. The goal is to demonstrate the building's behaviour during an earthquake as realistically as possible and to compare the collapse behaviour and final position of the digital walls with the archaeological evidence.

At the site of Hechingen-Stein the slope-facing gable wall of building M fell almost entirely in one piece. Excavations show that its foundations had slid downhill by up to 2 meters. Slope creep is still measurable here today - whether it was the (sole) cause of the collapse of the Roman walls remains to be seen.

RAC/TRAC18: The Art of Assessing Burials - From Developing Methodologies to Incorporating Scientific Analyses

Session organisers: Hannes Flück, Kaja Stemberger Flegar, John Pearce, Brina Zagorc & Rebecca Nashan

This session consists of two defined parts. The first part of the session aims to emphasize the opportunities, potential and limitations presented by an interdisciplinary approach to unlock the potential of funerary data. Specifically, it aims to focus on employing scientific methods, osteological and traditional antiquarian analysis on Late Antiquity thanks to inhumation burials that offer a greater potential for such interdisciplinary work. New publications of late antique cemeteries unlock exciting research opportunities. The increasing implementation of science in the form of C14 dating, pXRF-analysis of ceramics, stable isotope analysis and aDNA is gaining attention, in addition to archaeological and historical assessment. These methods enable an in-depth study of social structures, kinship/family structure, provenance and resulting networks, biological sex, gender and the diversity of ancient societies in general. Therefore, the combination of different techniques and analyses allows archaeological research to understand these sites in their entirety which in turn affects our perspective on Late Antiquity. Papers for the first part of the session focus on chronological studies as well as socio-cultural backgrounds exploring diversity (e.g. ethnicity, gender studies) of Late Antique societies.

The second part seeks to address the methodological issues that are regularly encountered across the Empire and throughout the entire Roman period - those related to data unification. For working with different documentation standards, and for combining legacy data with the latest approaches such as bioarchaeology, Roman funerary archaeology needs a "gold standard" to enable large scale comparisons.

Papers deal with:

- Finding common analytical denominators for legacy and modern burial excavations.
- Developing flexible grave typologies for (supra-)regional comparative research.
- Developing interpretative models for large cemeteries.
- Methodological and interpretational problems arising from the implementation of modern analyses.
- How to tackle legacy excavation data, which can be vast in quantity but intractable in structural or methodological terms.
- Critically applying the datasets that are acquired through bioarchaeological approaches, with focus on their contextualisation, interpretation, and discussion about the pitfalls of the methods.

Integrating Archaeoethanatology and Bioarchaeology: The Late Roman Non-Conformist Graves Burials Inside the Walls of Canterbury

Adelina Teoaca

The Late Roman burials excavated within the walled town of Canterbury present an anomaly within Roman funerary norms and challenge expectations about burial location and treatment. These non-normative inhumations, often in reused pits and ditches within the former civic centre, suggest a coordinated response to an exceptional event near the end of the fourth century. Bayesian modelling of radiocarbon results shows a tight chronological cluster, indicating that these burials likely represent a short time span depositional episode possibly linked to crisis, epidemic, or disruption during the final phase of Roman occupation in Britain.

This paper draws on the archaeoethanatology methodology developed as part of my PhD research, designed to retrospectively analyse burials excavated decades apart since the 1970s under varying recording standards. The approach follows a three-phase structure that standardises documentation of body decomposition, taphonomic processes, and post depositional alterations, allowing direct comparison across sites. It integrates archaeoethanatology observations with bioarchaeological datasets, including stable isotope results for carbon, nitrogen, oxygen, strontium, and lead, ancient DNA analysis and pathogen analysis in partnership with Francis Crick Institute through the 1000 Genomes from Britain project, and targeted radiocarbon dating.

Combining these datasets allows reconstruction of depositional practice, kinship, mobility, and health indicators within a secure contextual and chronological framework. This integrated bottom-up approach addresses the broader challenge of unifying legacy and modern burial data, producing consistent and comparable records for future regional studies.

The results could offer new perspectives on social and spatial transformation at the end of Roman Canterbury, town contraction but continuity into the early fifth century. More broadly, the project demonstrates how archaeoethanatology combined with scientific analysis and Bayesian modelling can recover structured narratives from fragmented urban burial archives and refine our understanding of the end of Roman rule in Britain.

Connecting Demographic Agent-Based Models to Skeletal Data: The Case of the Roman Cemetery at Tiel-Passewaaij

Laura van der Knaap, Philip Verhagen & Mark Groenhuijzen

Cemetery populations can offer valuable insights into a living population, but undeniably, they are “sampled at one particular time: at death” (Boldsen, Milner, and Ousley 2022, 121). To deal with this, paleodemographers have employed various methods, including modelling approaches. However, most models in paleodemography are deterministic and assume population stationarity or stability; this latter assumption, though unrealistic, ensures tractability. A promising alternative, Agent-based modelling (ABM) is a popular bottom-up simulation method in archaeology, but it is only scarcely applied to cemetery data. ABM is stochastic and does not suffer from problems of tractability. In addition, it can examine the impact of varied social and environmental processes on the formation of the cemetery record.

This study combines skeletal data and ABM to gain insight into the (rural) population of the Roman limes. The model was previously applied by Verhagen and colleagues (2019; 2016) to study the impact of military recruitment, birth control, and disasters on the Limes’ population. However, no comparison with the archaeological record was made. Skeletal data from Tiel-Passewaaij (Aarts and Heeren 2011) is used and special attention is paid to capturing data uncertainty by modelling a 100 potential age-at-death distributions from it.

Comparison between the simulated and empirical age-at-death distributions enables us to judge the relative probability of each simulation scenario, each with different degrees of marriage opportunities, fertility and mortality. Some smaller populations’ growth and structure do not stabilize even after 200+ years, leading to a wide range of distributions. Despite this, the best match with the empirical data was obtained under these scenarios with (relatively) low fertility and high mortality, with an average annual population growth of 0.6%. As such, this study shows the potential of combining ABM and skeletal data to examine the stochastic (demographic and social) processes underlying the cemetery record.

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Bridging Disciplines and Eras: A Multi-Proxy Exploration of Late Roman and Early Medieval burials from Basilia / Bazela

Claudia Gerling, Margaux Depaermentier, Joscha Gretzinger, Cornelia Alder, Michael Kempf, Irka Hajdas & Peter-Andrew Schwarz

Basilia / Bazela (modern Basel, Switzerland) provides a unique window into cultural and biological transitions along the northern frontier of the Late Roman Empire and thereafter. Spanning the 4th to 8th centuries CE, the Basel burial grounds document a period of profound transformation marked by shifting political, cultural, and social networks. This project applies a multi-proxy approach - integrating archaeological, anthropological, isotopic, genetic, chronological, climate and environmental data - to reassess long-standing assumptions about (dis-)continuity and migration in this frontier zone.

Multi-isotope analysis revealed patterns of both local and non-local origins, offering new insights into mobility and life histories. Radiocarbon dating refined the existing chronological framework, while ancient DNA analysis showed the persistence of genetic admixture across the investigated time-period. Together, these data form the first combined isotope - aDNA dataset for the region and period, establishing a critical foundation for future bioarchaeological research. The results challenge the traditional model of large-scale migrations, suggesting instead a dynamic interplay of regional mobility and long-distance interaction within extensive communication networks. By integrating environmental modelling and high-resolution climatic data, this research further refines interpretations of isotopic variability and subsistence strategies.

These findings not only refine our understanding of migration and mobility but also shed light on aspects of social diversity, kinship structures, and cultural identities reflected in funerary practices. The study thus illustrates the value of interdisciplinary scientific approaches in unlocking the social dynamics and cultural complexity of Late Antique and Early Medieval communities.

Childhood at the Frontier - Life and Death of Children at the Danube Limes in Austria

Sylvia Kirchengast & Dominik Hagmann

The Danube Limes in Austria - a UNESCO World Heritage Site since 2021 - has been primarily regarded in archaeological research for its function as a military frontier zone. Traditionally, the scientific focus has therefore often centred on military aspects, including armed conflicts, fortifications, and stationed units. However, the lives of the civilian population have hardly been reflected upon. To address this issue, in this study, the life and death of a group that has also been largely ignored even within the civilian population, namely children, will be reconstructed using current methods of archaeological science and bioarchaeology based on so-called osteobiographies.

The main aim is to highlight the significance of biological sex for subadult mortality, pathologies, stress parameters, and nutritional patterns. Due to the patriarchal social structures in this population, we predict a significantly higher proportion of female individuals among the subadult deceased, as they could be interpreted as the socially 'undesirable' sex. For this purpose, the child burials from two representative urban cemeteries - 46 subadult individuals from the civilian town of Ovilava (Wels in Upper Austria), with a subadult proportion of 30.9%, and 40 subadult individuals from Carnuntum (Petronell-Carnuntum and Bad Deutsch-Altenburg in Lower Austria), the largest Roman centre on the Austrian Danube Limes, with a subadult proportion of 39.2% - are included in the study.

In addition to standard bioarchaeological methods such as age-at-death diagnosis and recording of macroscopically detectable pathologies as well as stress parameters, we used radiocarbon dating for chronological classification, aDNA analyses to determine chromosomal sex and reconstruct kinship structures, as well as stable isotope analyses to reconstruct dietary patterns, especially the time of weaning. In a spatial evaluation, the burials of subadult individuals within the cemeteries are mapped and classified.

Introduction to part 2: How to Approach Roman Burials?

Kaja Stemberger Flegar

In this paper I aim to raise several issues I have encountered while studying Roman funerals from two perspectives: first, trying to extract as much data as possible from already published datasets and documentation covering more than 150 years of excavations; and second, trying to publish 20-years-

old excavations. The most common questions I ask myself are how to document, interpret, and present the findings adequately and comprehensibly, as well as how to fill the gaps in the legacy data. Combining the experience from both perspectives, I would group the issues into three specific areas, with some inevitable overlap: documentation, interpretation, and funding.

As for documentation and interpretation, these are often meshed together and heavily plagued with issues regarding language, including the lack of a common, well defined terminology as well as 'creative'; descriptions of objects or types. With documentation in particular, which ought to be the more objective counterpart of inherently subjective interpretations, one often needs to be accustomed to each excavator's idiolect. This need is progressively more important the further back in time one goes and the scarcer the visual documentation becomes. Even in modern excavations, what is recorded, and how, is a reflection of what the excavators deem important.

The main issue with modern rescue excavations, which represent the majority of contemporary excavations in many countries such as Slovenia, is that they often do not have the budget to do the interesting and cutting edge palaeogenetic or lead isotope analyses. There are certain processual shortcuts to speed up the post-excavation work, such as digital documentation and recording, 3D technology and similar procedures, but these remain underutilised. Last but not least, I will present my take on how things should be done, and pitch an idea on what to do with legacy data and why it is still relevant.

Aggregating Burial Data from Nijmegen and Beyond. Challenges and Possibilities

Erik Timmerman

Although the number of published Roman cemeteries continues to grow, little of the burial data has been systematically synthesised. This is unfortunate, as it means that many of the findings from these publications remain isolated. However, creating such a synthesis seems like a daunting and time-consuming task, complicated by the variation in how burial data are recorded in different publications. An important first step is therefore to create a comprehensive database that collects burial data in a clear and uniform manner.

This paper will discuss the issues involved in setting up such a database, as well as some of the potential insights that can be gained from it. It will draw on my own research into the burial fields around the Flavian-Trajanic castra in Nijmegen, which is being conducted as part of the Limes und Legion project. To place the results of this research in a broader context, several relevant publications have been included. The majority of these are cemeteries from Nijmegen and its immediate vicinity, but a few other sites have also been included because of their (presumed) military character. Based on this, a preliminary analysis will be provided of the main differences and similarities between the burial grounds with regard to grave types, demographic data, and grave goods.

Coming to Terms with 200 Years of Excavation Data

Simone Meyer

The cemetery in front of the Castrum Rauracense (Kaiseraugst, CH) with burials from the late antique to early medieval period is well-known among researchers due to the extensive work by Max Martin in 1976 and 1991. However, his comprehensive publication only covered the excavations from 1907-1912. The burials excavated in the 1830s-40s, the 1920s, 1930s, 1940s, 1950s, 1960s and 1980s are still not researched or published in a collective manner.

As the session organisers aptly ask, how to tackle legacy excavation data? Can we reach a standard of information published from the various excavations over 200 years to enable comparison even inside one single cemetery? More recent finds of late antique burials in other cemeteries surrounding the colony of Augusta Raurica already offer the potential for further local research with the appliance of modern methods and analyses.

What potential do legacy data have in terms of scientific analyses? Could a combination of different analyses of different materials and finds deliver a proxy to missing information? How do we, for instance, make up for a lack of bone material that would otherwise serve to research migration?

The paper offers to discuss the challenges of working with legacy data based on the example of the "Stalden"-cemetery. Excavated professionally by Rudolf Laur-Belart between 1944 and 1952, this part of the larger graveyard comprises about 50 well-documented late antique burials. It therefore offers a solid foundation as a case study for the methodological approach possible with legacy data.

Setting New Standards to Decode Roman Cremation Burials

Ana Maspoli, Örní Akeret, Cornelia Alder, Sabine Deschler-Erb, Claudia Gerling, Claudia Neukom, Michael Nick, Markus Peter, Philipp Rentzel, Ulrich Stockinger, Viera Trancik & Lucia Wick

Vindonissa is one of the best-studied sites of the 1st century AD in the Roman Provinces. In 2012/13, the Cantonal Archaeology of Aargau surprisingly uncovered the necropolis Brugg/Remigersteig along

the road from Vindonissa to Augusta Raurica, documenting 145 exceptionally well-preserved burials from the 1st century AD with state-of-the-art methods. The necropolis, which was probably mainly used by civilians, is currently being investigated in an interdisciplinary team of 12 researchers from ten disciplines: Archaeology, Anthropology, Zoology, Botany, Palynology, Geoarchaeology, Isotope-Analysis, Numismatics, Epigraphy and Iconography.

The project aims to establish a new transferable standard for the study of cremation burials to enable future large-scale comparisons. Emphasis is placed on methodological transparency, since choices such as washing and sieving directly affect the recovery of archaeo(bio)logical remains. We report on the processing of over 790 soil buckets and evaluate both successful and less effective approaches. For instance, close collaboration between zoology and anthropology substantially reduced the proportion of unidentifiable bones, while publishing both identifiable and non-identifiable finds allows for more reliable comparative analyses. At the same time, source criticism remains essential, e.g. regarding archaeobotanical remains, whose preservation depends on specific temperature conditions and thus raises questions about representativeness.

Finally, we also discuss failed attempts, such as aDNA analysis on well-preserved petrous bones, to provide a complete and transparent account of our procedures. This paper evaluates the standards developed through our case study of cremations, the predominant burial practice of the early imperial period.

RAC20: Marking Belief: Coexistence, Continuity and Change in Late Antique Graffiti (3rd-6th Century AD)

Session organisers: Ilaria Bucci & Christina Videbech

The centuries spanning the 3rd to the 6th AD were a formative period in the religious and cultural history of the Mediterranean and Western Asia. This era witnessed profound shifts in political authority, social organisation, and religious practice. The gradual rise of Christianity, culminating in its establishment as the imperial religion, profoundly altered the religious landscape. Yet, this was not a straightforward or uniform process. Pagan, Jewish, and diverse Christian communities continued to coexist, interact, and compete, often leaving subtle and sometimes overt marks of their presence and resilience.

This session seeks to explore how graffiti - found in a variety of settings and surfaces - reflected and responded to the religious dynamism of Late Antiquity. Found especially in urban contexts, and often located in spaces imbued with cultic, communal, and social significance, these traces offer valuable testimony to the religious identities, practices, and aspirations of individuals and communities. We are particularly interested in how these traces served as expressions of individual and familial identity, devotion, resistance, and negotiation, and how they shed light on the enduring presence and interaction of multiple religious traditions. In an age when Christian institutions were consolidating authority, and pagan and Jewish communities were adapting to shifting political realities, graffiti provided a space for continuity, contestation, and the marking of identity within the physical and spiritual landscapes.

This panel will present a range of case studies - including but not limited to religious images and texts across the territories of the Roman empire - exploring graffiti as a medium of religious expression and social commentary. By examining these often-overlooked texts, symbols, and images, the session aims to contribute to a deeper understanding of how individuals and communities navigated the transformations of Late Antiquity, and how material traces of graffiti help us trace both rupture and continuity across this diverse religious milieu.

Some Observations on the Safaitic Inscriptions in the Palmyrena

Tom Sale

The excavations of Daniel Schlumberger in the mountainous hinterland northwest of Palmyra, a region known as the Palmyrena, uncovered a series of villages dated to the first three centuries CE. The epigraphic record from these sites reveals a striking cultural homogeneity, expressed almost exclusively through inscriptions in Palmyrene Aramaic. It is notable, therefore, to find within this corpus eleven pieces of Safaitic graffiti, a language and script typically associated with the nomadic groups of the

southern Syrian and northern Arabian steppe. These are not the only inscriptions linking the hinterlands of Palmyra with the Safaitic core area. Graffiti from the Hauran attest to travellers journeying to and from Tadmor (Palmyra), while others record acts of hostility between Safaitic-speakers and Palmyrenes. Such texts reveal that encounters between these two groups were not always peaceful, being defined by tension as much as by exchange.

While brief and formulaic in content - often limited to the name of the dedicant and various indications of their lineage - the Safaitic inscriptions in the Palmyrena nonetheless attest to the movement of nomadic groups through the region and their engagement with its settled communities, reinforcing the impression of a shared landscape of mobility and interaction. This paper explores the place and significance of these inscriptions in the context of the region's religious life. It considers how the presence, and possibly hostility, of Safaitic-speaking groups may have contributed to shaping local conceptions of divine protection, particularly the recurring representation of deities as armed riders or standing warriors. Placed within the broader religious and social context of the Syro-Arabian steppe, this material offers a more nuanced understanding of how divine forms and representations were shaped through contact between the nomadic and sedentary communities of the Palmyrena.

Inscribing Religious Transition: Coptic Graffiti and the Re-marking of Pharaonic Spaces in Kom al-Ahmar/Sharunah (3rd-6th c. CE)

Ariadna Guimerà

The archaeological site of Kom al-Ahmar (Sharunah, Egypt) represents a key landscape of religious interaction in Late Antiquity. During the 3rd to 6th centuries CE, this region became an area of strong and sustained Coptic Christian presence, embedded within a territory long shaped by pharaonic cultic traditions and monumental architecture. Far from disappearing, these ancient structures continued to frame religious practice, memory, and social life in Late Antiquity, creating a setting in which multiple traditions coexisted and were materially negotiated.

Within this Late Antique context, Coptic graffiti carved on pharaonic tombs and reused surfaces constitute a significant body of evidence for how Christian communities marked belief and articulated religious identity in inherited sacred spaces. This paper approaches these graffiti not simply as signs of rupture or iconoclastic action, but as practices of reinscription through which individuals and families engaged with enduring cultic landscapes. Crosses, invocations, and short textual formulas functioned as material claims to presence and devotion, producing layered meanings rather than the wholesale replacement of earlier religious expressions.

Drawing on recent archaeological documentation from the Sharuna Project, the study combines spatial analysis of graffiti distribution, visibility, and surface selection with palaeographic and iconographic observations. These patterns illuminate how graffiti operated as a medium of religious expression in a period of consolidation of Christian institutions, while older traditions and local memories continued to shape the use and perception of space. The evidence points to a gradual and non-linear process of change, in which continuity, coexistence, and adaptation were central features of the Late Antique religious landscape.

By situating Coptic graffiti within broader debates on religious plurality and material expressions of belief in Late Antiquity, this contribution aligns closely with the aims of the panel. At Kom al-Ahmar, graffiti emerge as active agents in the negotiation and reconfiguration of sacred space, offering insight into how Coptic Christian communities navigated religious transformation within a shared and historically charged environment.

Paganism and Associative Identity in Fourth-Century Graffiti from Deir el-Bahari

Carl-Loris Raschel

My presentation focuses on graffiti dating from the first half of the 4th century, found in the temple of Deir el-Bahari (Egypt) and published by Adam Latjar (SB XX 14508-14511). These graffiti were left by a professional association (plēthos) of ironsmiths from the neighbouring town of Hermonthis. They commemorate the gathering of the ironsmiths at the site, for festivities centred around a pagan ritual: the sacrifice of a donkey.

These graffiti, found in a sanctuary dating back to Pharaonic Egypt which was destined to become a Coptic monastery, illustrate how pagan cults found their place in a Christianising Egypt. Through these graffiti, the artisans not only express their religious identity, but also celebrate their association. Their pagan identity is inextricably linked to the way they form bonds with each other within their association. Although professional associations have become increasingly rare since the 3rd century, the ironsmiths have maintained a traditional form of association with deep historical (and pagan) roots, as evidenced by the terminology they use. At that time, Egyptian artisans formed guilds (koina) that were not voluntary but rather comprised all those who practised the same trade for tax purposes. Their terminology is completely different from that used by associations.

Finally, we will explore how the dual pagan/associative identity is manifested in graffiti itself, drawing comparisons with Egyptian papyri and stelae.

Jewish Inscriptions in Roman and Slavic Contexts (2nd-5th c. CE): Negotiating Identities

David Hamidovic

Jewish individuals were present in the northern Balkans from the 2nd century CE according to a couple of inscriptions. This presence increased under the Severan Roman emperors (193-235 CE) following the Marcomannic Wars between 166 and 188. After this war, the governor of Pannonia, Septimius Severus, was acclaimed emperor in 193. He granted numerous privileges to the province, which led to strong economic development and the presence of merchants, particularly from the eastern Mediterranean. Other people from East, including Jews, joined the army, while others were slaves or freedmen, as legions took part in the war against the Jews in Palestine. We can therefore assume that Jews, willingly or by force, crossed the Balkans as far as Pannonia. Moreover, Septimius Severus, through his marriage to the daughter of Elagabal's high priest in Syria, was familiar with oriental cults, which suggests an environment favourable to Jewish emigration.

In this context, the inscriptions show that there is still an ethnic perception attached to the Jews, mainly in the sense of the family's region of origin, but we cannot rule out a definition that includes Jewish religiosity, i.e. a set of beliefs and practices that a person attributes to the Jews. The discussions on the meaning of inscriptions in the northern Balkans are a good illustration of the debates concerning the role of perception in the definition of ethnicity and its evolution. The concepts of socialization and networks, i.e., a set of interwoven interpersonal and institutional relationships, leads to better understanding the process of negotiation of identities in the Slavish context under the dominion of Romans from the 2nd century to the 5th century CE.

A Close Relative or The Graffiti from the Basilica of Saint Felix, Cimitile in its Campanian Context

Melissa Yorio

On a wall in the Basilica of Saint Felix, Cimitile, there is a collection of ten graffiti that can be dated between 350 and 500 CE. These graffiti offer a fascinating look into the lives of those that lived and visited this space in the fourth century. In this paper, I will introduce the Basilica and its graffiti, then I will discuss the graffiti in relation to its fourth century context. First, the graffiti attest to similarities between Christian prayers found in the Basilica and those found in the Roman Catacomb of Domitilla, suggesting a shared understanding of appropriate prayers to be scratched upon the wall. Additionally, the region of Campania offers rich data for comparison as I look to the religious graffiti found in Pompeii and Herculaneum. What is appropriate to write on the wall in a religious context? What constitutes an appropriate epigraphic prayer? How do these prayers differ between monotheistic and polytheistic religions? Though the number of graffiti from Cimitile is small, their context offers a unique look into the evolution of religion and the epigraphic habit in the region during the early years of late antiquity.

RAC21: Times of Transition: Questioning Regionality, 'Crisis' and Collapse in the Northwestern Provinces of the Roman Empire c.AD 230-300

Session organisers: James Dodd & Berber van der Meulen-van der Veen

The 3rd century is an important juncture in the archaeology of the northwestern provinces. Traditionally viewed as a 'negative' vortex of political stress, barbarian raiding and agrarian crisis, it is often brushed over, falling between the study of the Early Empire and Late Antiquity. The appearance of new military installations, depopulated zones and destruction horizons do not tell the entire story. Mono-casual explanations have been repeatedly used to explain the evidence for depopulation and destruction and there has been limited examination of the region holistically with concepts of 'global crisis' still strongly embedded into our narrative.

This session examines the 3rd century as a whole and will bring together researchers covering Britannia, Gallia Belgica and the Germanic provinces to examine the processes and archaeology behind this transformative period. The papers in this session will look at the socio-economic, political and historical development of the provinces in the 3rd century AD and focus on deconstructing the grand narrative of crisis by balancing the evidence and establishing clear regional trajectories. The 3rd century has been seriously neglected in recent years in favour of the Early Empire or the 4th-5th century, the last major conference on the topic being

held in 2009. This session will rectify this and provide a new stepping stone for understanding change and inertia in the 3rd-century northwest.

Themes are:

- Issues of (dis)continuity and regionality.
- Material culture studies.
- Historical narratives and archaeological vagaries.

Defying the 'Century of Crisis': Economy and Daily Life in the 3rd Century Roman Empire

Stefanie Ulrich

The third century AD was a period of instability in most regions within the Roman Empire. The duration of the emperors' reigns was brief, and the process of usurpation was the means by which individuals gained access to the throne. Scarre calls the years 244 to 260 AD "the most confused and sketchy in the whole history of the Roman empire" (Scarre 1995: 166-7) and Harper is even harsher when he calls the third century "the 'first fall' of the Roman Empire." (Harper 2017:21) While this is true in a political sense, there are exceptions in terms of the economy and, consequently, the lives of individuals within specific provinces of the Roman Empire.

With the help of various examples from the provinces of Gallia Belgica and Britannia, I aim to demonstrate that it was possible to expand production in the villas, extend the operational area and improve the quality of life for the local populace. The primary focus of this study is on three Roman villas (the Roman villa in Reinheim, the Roman villa in Nennig, both located in Gallia Belgica, and the Bignor Roman Villa in Britannia) and the Roman baths in Trier, also in Gallia Belgica. These examples will show that the blank statement of 'century of crisis' does not apply to the third century AD.

While some factors undoubtedly exerted a negative influence on the Empire, these villas continued to thrive and support their immediate environment. By contrast, the baths are indicative of a relatively high living standard that was sustained throughout the century.

The 3rd Century in Northern Gaul and Nearby Germania: Contrasting Situation

Antonin Nüsslein

In historiography, the 3rd century is generally portrayed as a period of profound "crisis" for the countryside of northern Gaul. When looking at the rural world as a whole, one indeed observes a series of destructions and abandonments of rural settlements, resulting in a decline in the number of inhabited sites. The countryside thus appears to have gradually emptied. However, evidence from recent excavations, survey projects, and new studies shows that the 3rd century cannot be reduced simply to a period of "crisis" in rural areas. The situation is more complex.

The aim of this paper is to highlight the complexity of settlement dynamics during the 3rd century in the area between the Moselle and the Rhine. We will address rural settlements, towns, and territorial dynamics in order to illustrate the diversity of situations, showing that it is not possible to generalize certain phenomena, and that populations displayed a strong resilience in the face of various challenges. From a "Roman-centered" and general perspective, the 3rd century does indeed correspond to collapse and profound crisis. Yet when these phenomena are observed comparatively, at multiple scales, over the long term, and within the continuity of processes affecting populations across time, this period appears rather as the gradual end of one epoch and the beginning of a new phase in population history. It is therefore more accurate to speak of a "transition" in rural settlement during the 3rd century, rather than of a "crisis."

Not Just in the West... The Mid-3rd c. AD Crisis and Its Archaeological Evidence in the Villas of the Territorium of Aquincum (Pannonia Inferior)

Orsolya Láng

Contemporary written sources mention the province in connection with the mid-3rd c. AD crisis as "Pannonia vastatae", referring to the devastation caused by the barbarian attacks. As a result, it has almost become a topos to associate these invasions with the destruction of the Aquincum settlement complex and its immediate surroundings (the villa zone) in Pannonia Inferior.

Recently, however, it has become possible to re-evaluate earlier data and conduct new excavations, particularly in the villa zone, where some 50 villas and several other rural settlements are known so far. Data from the so-called Harsánylejtő Villa (and its preceding rural settlement) as well as from the Csúcshegy Villa will serve as case studies to address the following questions: were these estates really destroyed and abandoned for good? Or, on the contrary, did this mark the dawn of a new era? What archaeological evidence do we have for this?

This paper addresses the real, physical effects of the warfare of the mid-3rd century AD and their archaeological traces in the territory of Aquincum to give a more nuanced picture of rural life during this crisis along the Aquincum limes section challenging the long-standing topos of „Pannonia vastatae”.

Big Data on Romano-British Pottery Use (or Where Did Everyone Go in the Third Century)

Jeremy Evans & Philip Mills (†)

The paper examines trends in the dated use of R-B pottery from 375 sites across the UK. It is a first attempt at using a large dataset spanning much of the province but concentrated in the Roman Rural Settlement study's Central and North-Eastern zones. It looks at date distribution plots of material from these sites and sees a consistent overall trend of increasing pottery use up until the end of the second century, but with a very strong decline in the early-mid third. Some possible explanations for this are offered.

The Currency of Adaptation: Late 3rd Century Radiate Imitations and Transformation in Roman Britain

Tasha Fullbrook, Peter Bray & Philippa Walton

In the AD 270s and 280s, huge numbers of imitations of copper-alloy radiates were struck in Britain, traditionally seen as beginning after Aurelian's coin reforms in AD 274. These late 3rd century radiate imitations, or so called 'barbarous radiates', are traditionally dismissed as debased and crude copies born out of political crisis. Interpretations of these coins are framed within narratives of Imperial decline, administrative collapse and economic dysfunction. However, by linking archaeology, numismatics, and chemical analysis, these imitations provide a new opportunity to critique the idea of 3rd century crisis, demonstrating that communities were able to sustain economic networks despite political instability.

Drawing on evidence from the Cunetio hoard, the largest coin hoard from Roman Britain, as well as a diverse range of case studies from museum collections and the Portable Antiquities Scheme (PAS), this paper will discuss the production and circulation of radiate imitations in the context of wider debates in the northwestern provinces, particularly in Roman Britain. It will link detailed numismatic work on coin imitations, reconsideration of their regionality and social roles, and a significant volume of new chemical analysis of 'barbarous radiates', third century small finds, and official coins. This work places the imitations back into their active economic, social and metallurgical context, demonstrating how local producers balanced the need for recognisability with material supply.

Ultimately, this paper argues that the study of radiate imitations, particularly their chemistry and iconography, allows us to rebalance our understanding of 3rd-century Britain: not as a period defined solely by chaos, but as one characterised by innovation, negotiation, and continuity within regional trajectories of change.

Between Crisis and Transformation: Population and Burial in the Late Antique Cemetery of the Legionary Camp in Bonn

Jana Wertz

The legionary camp at Bonn, occupied continuously for more than four centuries, represents one of the key military sites along the Roman Lower German frontier. Within the framework of a dissertation project, a section of its Late Antique cemetery—comprising 345 burials—has been systematically analysed in order to investigate processes of cultural transformation, mobility, and integration between the 1st and 4th centuries AD. The earliest graves date to the late 1st century, but the majority belong to the 3rd and later centuries, a phase traditionally characterized in scholarship by narratives of crisis, depopulation, and external pressure.

The cemetery material, however, presents a more complex picture. Shifts in burial customs reveal the development of a distinct "Rhenish" rite, attested both in Bonn and in other sites such as Augsburg and Regensburg, likely reflecting patterns of emigration from the Rhine provinces. At the same time, the presence of Germanic artefacts and jewellery characteristic of the Middle Danube region provides clear evidence of sustained immigration into the area and into the legionary context itself. These findings suggest that interaction, adaptation, and mobility were key structuring elements of local society, challenging interpretations that privilege disruption and decline.

Cavemen Days in 3rd Century Chiemgau

Marcus Zagermann, Sarah Lo Russo, Simone Häberle & Patricia Vidorpe

Insights into the reactions of the rural population to the events of the 3rd century remain scarce. However, two caves in Chiemgau (southern Bavaria) recently yielded findings that may represent as an immediate reaction to such crisis events in the vicinity of the Raetian-Norican border area. These extremely inaccessible caves were used for settlement purposes (refuge?) for a maximum of one generation in the first half of the 3rd century. Valuable goods were stored within these caves, even though certain tools and objects could actually be used here. Fire pits and ceramics indicate that people

lived here, and fine ceramics (Samian, Fine Wares) testify to a certain standard of living. The Occupation of the site ended before the middle of the century, with much of the material remaining on site. This raises the question, whether the beginning and end of use related to civil war-like fighting and looting in the region. Analysis of the findings and discoveries, micromorphological investigations, archaeozoology, and botany are attempting to classify the site more precisely.

The Fortified Main Building of the Villa Rustica HA 158 in the Context of the 3rd Century AD

Tamara Ruske

In the context of villae rusticae, fortifications are interpreted as military or private installations, although very few have been sufficiently researched. According to current research, this phenomenon can be linked to the 'crisis situation' of the 3rd century AD. This assumption will be examined using the example of the fortified main building of the villa rustica in HA 158 Kerpen-Manheim.

The villa rustica was located in the hinterland of Germania Inferior about 30 km from the provincial capital Cologne/CCAA. It was founded at the end of the 1st/beginning of the 2nd century AD, while the main building was constructed around the middle of the 2nd century AD. Ultimately, the main building was fortified by a double ditch system and a palisade in the 3rd century AD. Due to the longevity of individual pottery forms the end of the fortification cannot be dated closer than the 3rd and 4th century AD.

However, the analysis of the villa cemetery gives evidence to the constructors and inhabitants. For example, the burial of a possible veteran of the 3rd century indicates that there was a person with experience to fortify a building. It is noteworthy that no other military finds were discovered in the graves or the fortification itself. Therefore, it can be assumed that the fortification was a privately undertaken construction project for self-protection of the residents, presumably due to local and global events. Whether the fortification had an additional function within the framework of a higher-level rural defence system will also be discussed during the paper.

RAC22: Finding the Fifth Century

Session organisers: Kelly Clarke-Neish, Eleanor Ghey, Ellen Swift & James Gerrard

The fifth century has been underrepresented in the Western European archaeological narrative. One of the factors involved is the difficulty of dating its associated material culture. Another is the teleological thinking that sees the fifth century as either the end of Rome or the beginning of the Middle Ages, notwithstanding sustained scholarly interest in 'Late Antiquity' more broadly conceived.

Hoards are one of the most visible indicators of this period of rapid social and economic change, but a reliance on numismatic dating has tended to situate their interpretation in the earlier part of the century. New work (e.g. Swift 2024 and Blackwell et al. forthcoming) is refining chronologies in this period and extending our understanding of both Roman-style material culture characteristic of the fifth century, and the survival and reuse of earlier material. In turn, this facilitates a reappraisal of cultural and social diversity across the period.

This session aims to explore the distinctive nature of fifth century society within and beyond the former western provinces and investigate approaches that move beyond framing the period in terms of top-down narratives to reveal the complex and varied nature of society in a time of change. We are also interested in challenging traditional perspectives arising from the disciplinary boundaries of 'Roman' or 'Early Medieval' archaeology to encourage the development of fresh interpretative frameworks.

Papers in this session engage with the material culture of the 'long' fifth century in the former provinces of Britain, Gaul and Germany and neighbouring regions outside the former Empire, applying both quantitative and qualitative approaches.

Introduction and Overview of Research Project 'Britain's Last Roman Hoards'

Ellen Swift, Kelly Clarke-Neish, Eleanor Ghey & James Gerrard

An introduction to the session 'Finding the Fifth Century' will briefly outline its aims to explore the distinctive and complex nature of fifth century society, challenge traditional perspectives, and encourage the development of fresh interpretative frameworks, before exploring some key results from the new

collaborative AHRC (UK government-funded) project Britain's Last Roman Hoards as an example. The hoards studied typically contain Roman silver coins (*siliquae*), and/or items of jewellery, and sometimes their burial containers are preserved. They offer much potential to transform our understanding and illuminate aspects of economy, society and culture in fifth-century Britain, yet are neglected in scholarly research, with many only partly published, or needing re-evaluation. Older scholarship focused on hoarded coins, and suggested hoard deposition not long after coin mint dates (see summary by Guest 2005, 16-21). More recently, debate on likely circulation periods, processes of coin accumulation in hoards, and evidence from the physical appearance of the coins, has questioned this (Lockyear 2012; Reece 2015; Abdy 2009; Guest 2005). Our new study of the complete hoard assemblages helps us better understand when they were deposited and will provide wider insights into the character of fifth-century Britain as a distinctive period in its own right.

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Water Newton and the Early British Church

Richard Hobbs

The Water Newton treasure was discovered in 1975, unfortunately in dubious circumstances, meaning that vital context information is no longer available. Nevertheless, it is clearly a hugely important set of silver for understanding the early Christian church in Britain and has traditionally been dated to the late fourth century AD. This paper will argue that a case can be made for the treasure to be dated instead to the fifth century, both in terms of its use and ultimately its burial. Using a typological study of the vessel forms, new research on the capacities and potential practical uses of the vessels and comparisons with better dated 'church' treasures found in the east of the Empire, this paper will place the Water Newton treasure into a new context, one where it was possible for a Christian community to survive and perhaps even flourish in the period after the traditional 'end' of Roman Britain. It will also examine how it compares with other precious metal hoards that are also being reassessed and reinterpreted as part of the 'Britains last hoards' project, for example the Thetford treasure, which is an example of a set of material in the hands of mostly non-Christians. What might a comparison between such sets of material tell us about conflicting belief systems at the end of Roman Britain and the beginning of the early Medieval period? Can we use other sources of evidence to broaden our understanding of belief during this period of transition?

Bumping into the 5th Century at Chedworth Roman Villa & Badbury Rings

Martin Papworth

Radiocarbon and OSL dating of sealed, well selected samples will reveal the 5th-6th century period where it was previously unsuspected. The quantities of late Roman pottery and coins as dating evidence on Romano British sites have, in the past, discouraged researchers from applying scientific dating techniques. This paper examines two sites in the west of England where new LiDAR analysis and C14 dates have challenged the narratives for a Dorset hillfort at a Roman crossroads and the time span for the polite occupation of a Roman villa. This new information has led to a National Trust sponsored project that has revisited past archives to obtain new dating evidence that has helped place these recent discoveries in context.

Tintagel, Ancient Seafaring and Material Culture: The Physical Limits on Fifth-Century Imports

David Spiller & James McBlane

Tintagel is known for its, incomparable in an Insular context, assemblage of Late Roman imported pottery, a dataset which was considerably expanded by the 2016-17 excavation (Nowakowski and Gossip, 2019), and has been explored and reevaluated in detail by Maria Duggan (2020 ; forthcoming). In recent years, the argument has been made that Tintagel was not a trading destination itself, but simply a centre of elite consumption, with Late Roman pottery being brought from beaches on the south coast of Cornwall (Seaman, 2024). This argument is based upon the supposed difficulties of navigating the coast of north Cornwall. It does not explain the atypicality of Tintagel in terms of fifth-century British material culture. Here, we propose that not only was this coastline navigable, but that Tintagel was the most suitable place in the region for traders to unload their cargo. This paper aims to bring a maritime

archaeological perspective to a coastal site that has so far lacked such analysis. The suitability of the harbour at Tintagel, and specifically the presence of a suitable rear anchor-point, is discussed, as is the significance of Tintagel headland being the point at which ships face prevailing currents. It is argued that the practicalities of ancient seafaring made Tintagel the most northerly point that traders bringing Mediterranean pottery to western Britain could sail without facing much greater difficulties and risk. Instead of Tintagel being a centre of elite consumption despite being a poor destination for seafarers, we suggest that Tintagel is so distinctive in terms of the material culture of fifth-century Britain precisely because of its geography, and thus why other sites have not produced comparable assemblages of imported material.

Rethinking the 5th Century at Venta Icenorum (Norfolk-UK)

Will Bowden

The town of Venta Icenorum in eastern Britannia was the civitas capital of the Iceni territory in the UK and has long been noted for its small size and limited public buildings. It has traditionally been viewed as following the trajectory associated with many towns in Roman Britain, with little sign of urban life beyond the first decade of the 5th century. However, nearly two decades of research at the town has demonstrated the particular nature of its late Roman history. It included the construction of a major building on the site of the forum in the mid 4th century and the development of clear foci of intra-mural activity in the very late 4th/early 5th century. I will argue that this late development relates in part to the importance of the region for military supply of the Rhine frontier. Following this I will also suggest ways in which this late Roman history may relate to the 5th-century and later archaeology of the site. The latter includes two major early “Anglo-Saxon” cemeteries. Traditional periodization and thinking about early medieval Britain have meant that these cemeteries have been viewed as “separate” post-Roman entities, rather than as integral elements of the late history of the town. This talk will examine this material in the context of the late Roman town and use it to question the ways in which we have conceptualised the 5th century at the site.

Problematizing Residuality: Reuse, Recycling, and Recontextualisation in the 5th Century

Rich Best

Residual material, defined as artefacts outside of their expected stratigraphic or chronological contexts, has long been excluded from detailed analysis on the grounds of residuality. This paper argues that this material represents an underutilized resource in Roman archaeology and may provide means to understand the longevity and use-life of material culture beyond its traditional chronological boundaries. Drawing on research on Anglo-Saxon use of Roman material culture, this paper will examine the possible roles of residual material in accessing the 5th century and see this material not as a contamination of the record but as a reflection of interaction with the past in the liminal space of the 5th century. Drawing on case studies from Kent, it will be argued that Roman objects and materials persisted beyond the boundaries imposed by archaeologists. Through reassessment of legacy archives and excavation records, this approach invites a shift towards recognizing residual material as an active component of Late and Post-Roman social and economic life. Problematizing this material and examining residuality through the lens of reuse, recycling, and recontextualization reveals the 5th century not as an archaeological void but as a dynamic period of material negotiation between the Roman past and emerging early medieval identities.

Connecting the Cosmopolitan North Sea: Cremations and Connectivity in The Fifth Century

Rowan English

The fifth century in the eastern lowland of Britain is characterised archaeologically by large cremation cemeteries, made up of hundreds or thousands of individuals. While many of these sites have been heavily disturbed and some almost totally destroyed, some remain complete and near complete and are able to tell us about connectivity, economy, and society in the first decades of the fifth century. In this paper I wish to focus on evidence of connectivity to both a pre-5th century past and to communities across the North Sea littoral using evidence from cremation graves in lowland Britain and Northern Germany. In particular, I will explore objects that travelled long distances to the North Sea to be deposited in graves (e.g. Elephant ivory, coral, cowrie shells) and what they can tell us about local concerns. These objects show both connectivity of the North Sea to the world and connectivity between the shores of the North Sea, while also high-lighting the distinctive material culture profile of micro-regions, suggesting intense connectivity and continuity with the 4th century and its networks.

The late 5th-Century Kingdom of the Danir – Roman Successors in the North

Dagfinn Skre

Probably the most enthralling item from the Scandinavian Iron Age is the gold bracteate, produced in the ten-thousands c. 450–550 AD. Clearly modelled on Roman solidi and medallions, imagery and inscriptions appear to refer to both deities and rulers. The dominant ‘school’, initiated by Karl Hauck, emphasise the former – they regard them as protective and healing amulets. Situating bracteate imagery and distribution in the context of archaeological and toponymic evidence, this paper argues that rulership connotations were the primary, and that bracteates were conceived in the 450s to serve as tokens of allegiance to the first kings of the Danir.

A recent aDNA study suggests that shortly before the kingdom was formed, a substantial population replacement happened in what came to be the Danir realm. The origins and formation of the arriving group, their mode of settling in their new lands, and the institutions they established to maintain authority there are best explained as resulting from the identity and self-perception that the warrior echelon of Northern Europe had built up over generations as men living in the orbit of Rome. This self-perception is most succinctly expressed in the fact that they modelled bracteates on medallions of the last Roman ‘Golden Age’ under Constantine the Great and his sons a century and more previously. Thus, the introduction of kingship among the Danir may be regarded as a renaissance, a rebirth of Rome in the North, albeit of a transcultural Germanic/Roman nature.

Silver Beyond Empire: Exploring Fifth-Century Silver Hoards in Scotland and Beyond

Fraser Hunter, Alice Blackwell & Martin Goldberg

The fifth century has been elusive north of Hadrian’s Wall, as elsewhere in Britain, but recent study of silver objects, especially in hoards, is providing new ways into this conundrum. On one hand, fresh analysis of the hoard of “late Roman” hacksilver from Traprain Law (East Lothian) reveals complex formation processes extending well into the fifth century. On the other, new studies of supposedly “early Medieval” hacksilver hoards from Norrie’s Law (Fife) and Gaulcross (Aberdeenshire), traditionally dated to the sixth or seventh century, pull them into this fifth century context and reveal a kaleidoscope of interlocking connections involving old Roman silver fragments, changing alloy recipes, and new objects emerging in the context of the changing politics of the collapsing frontier. This provides a complex and interwoven picture of silver’s evolving role in the developing societies of the fifth century in Scotland. The results are part of a larger network project on silver around the North Sea at this period, other aspects of which are presented in a separate, complementary paper.

TRAC1: Crafting Connections: Communities, Identities & Practices in the Roman World

Session organisers: Eniko Hudak, Nicole Berlin, Amy Baker, Adam Sutton, Amy Miranda, Cheyenne Eversole-Spina & Rebecca Nashan

Craft production in the Roman world offers a powerful lens through which to examine social structures, knowledge transmission, and identity formation. Far from being isolated economic activities, crafts were deeply embedded in networks of apprenticeship, community belonging, and cultural expression. This session brings together three thematically related panels to explore how artisans and their work shaped—and were shaped by—the broader social and political dynamics of the Roman Empire. From communities of practice to regional variation and provincial identities, these contributions interrogate the social lives of makers and materials. Together, they offer new approaches for integrating theoretical frameworks and archaeological evidence in the study of Roman crafts.

The first panel discusses connectivity through crafts and creation of dynamic communities of practice across the Roman Empire. It explores how shared activities among artisans created communities of practice—groups formed and sustained through collective knowledge, skill transmission, and embodied interaction. It invites papers that draw on case studies from Roman ceramic production and also beyond, specifically those that foreground the role of micro-styles and object variability in identifying these communities archaeologically. This panel aims to emphasise human-object interaction as a valuable proxy for tracing human-human relationships and aims to refine our methodologies for recognizing such dynamics. In

doing so, it contributes to a growing body of scholarship that views craft as a key site for understanding social life in the Roman world.

The second panel zooms in on art and craft production in the eastern provinces of the Roman Empire, where long-standing Greek and Mesopotamian traditions continued to shape local production practices under Roman rule. It aims to analyse regional craftwork through a theoretical lens to challenge reductive, top-down models of Romanization and highlight local agency and innovation. The panel invites papers that are particularly interested in the glocalization of material culture—how local and imperial elements merged in distinctive forms of artistic expression in the eastern provinces. By doing so, the panel aims to contribute to a broader decolonizing effort within Roman archaeology by re-centering marginalized communities and provincial experiences.

The third panel examines the social and cultural identities of craftspeople working in Roman provincial contexts. While previous research has often focused on typologies, workshops, and tools, this panel emphasizes the people behind the practices—how artisans negotiated identity, status, and belonging through their work. It invites papers that draw on archaeological, epigraphic, and visual sources to consider how craft embedded individuals in broader social, economic, and political landscapes. The panel highlights the diversity of provincial craft experiences and promotes interdisciplinary approaches to understanding identity in the Roman world.

Taken together, these panels demonstrate the value of craft-focused research for understanding Roman society from the bottom up. They reveal how artisans operated within and across communities, navigated regional traditions, and forged identities through creative engagement with materials. By bringing theoretical innovation into dialogue with empirical evidence, this session advances the study of Roman craft beyond economic production to a rich field of social practice. Craft was never merely about making—it was about belonging, remembering, and negotiating one's place in a changing imperial world.

Mixed Dish: Cross-Regional and Regional Influences on Red-Slipped Tableware Design in Roman North Africa

Carina Hasenzagl

Red slipped tableware (also known as terra sigillata) is the most iconic Roman pottery and a symbol of the spread of Roman material culture, despite—or perhaps because of—being produced in provincial territories. The trajectory of sigillata and its impact on local tableware production and consumption within ancient colonial encounters, however, varies across provinces.

This paper focuses on the regions of present-day Tunisia and Algeria, tracing the introduction of Italian and Gaulish sigillatae and the rise of African Red Slip Ware, which became the longest-lasting type of Roman tableware (1st-7th century AD). It shows that the first-century (experimental) phase of African production already relied on different structural and technological practices than those in Italy and Gaul. By reconnecting with pottery traditions that served the culinary customs of indigenous North Africans, African tableware went beyond mere imitation; it mixed imported Roman and local elements, creating something new.

This distinctive 'African-style' became the new standard for red-slipped tableware. It was exported back to Rome and throughout the entire Empire, highlighting not only the intertwined economic flows but also the continuous evolution of the sigillata tradition, which accounts for its dynamic and fluid role as it crossed cultural borders and social contexts. More mass-producing African workshops acting on a supra-regional level, however, also gave way to a number of niche products and micro-styles, combining different morphological features of mainstream tableware, unique decorations, and even atypical features (e.g., a bichrome black-and-red slip). Investigating these productions with regional distribution emphasizes their multilevel organization, which—although highly standardized—allowed flexibility within tableware design. A mixed dish and dynamic artifact class of selective fusion, however, also challenges established archaeological categories and highlights the need for new concepts to understand the stylistic diversity of red-slipped tablewares.

Between Local Practices and the Imperial Provincial System: Pottery Production in the Roman Northwest of Hispania

Alicia Hernández-Tórtolas, Almudena Orejas Saco del Valle & Damián Romero Perona

This paper presents the results of the study of pottery materials and their contexts, carried out within the framework of archaeological research in the northwestern Iberian Peninsula. We are presenting ceramic assemblages dated between the Late Iron Age (3rd-2nd centuries BCE) and the Early Roman Empire (1st-2nd centuries CE), focusing on a particular pottery craftwork associated with indigenous/local communities engaged in agrarian economies and rural settlement systems. We propose a model of production during the Late Iron Age that, beyond a spatial division into “pottery workshops” or “pottery areas,” it developed through exchange networks, working as permeable connections and routes between the inhabitants of hillforts, including the artisans, through which technical skills, knowledge, and traditions circulated, mostly on a local or regional scale.

This scheme dramatically changed after the Roman conquest, entailing the strategic control of territories and natural resources (above all gold-mining exploitation), as well as the emergence of a new provincial society marked by tensions between local elites and common people. The Roman system of ceramic production and circulation became established, characterized by the standardization of the potter’s wheel in specialized workshops, Roman-style repertoires, imitations and adaptations, and the appearance of new products, crafts, and lifestyles. Through morphological, technological, and contextual analyses, we explore how local craftspeople maintained aspects of their earlier savoir-faire, visible in technological gestures (handmade vessels, reduction firings, decorative techniques), functional choices, and the scales of production.

Rather than a simple continuity of pre-Roman traditions, a passive negotiation, or a uniform process of Romanization, these ceramics embody the adaptive strategies of rural craftspeople (anonymous and operating within small-scale networks), who faced social inequalities and economic transformations within a colonial process and disruptive conquest. These objects played a crucial role in mediating between local traditions and imperial structures in the northwestern province of the Empire.

Mosaic Production and Workshop Organisation in Late Antiquity: The Case Study of the Sixth-Century AD Bir Messaouda Workshop in Carthage

Camila Medina León, Thomas J. Morton, Eric M. Moormann, Carina Hasenzagl, Roland Dreesen, Peter Cosyns, Roald F. Docter & Vilma Ruppinié

Roman mosaics have long been the focus of archaeological and art-historical research. However, most studies have concentrated on style and iconography and far fewer on the processes of mosaic production and the organisation of workshops across the Mediterranean. Although research into mosaic production is gradually expanding, many questions remain unanswered: Who were the craftsmen creating mosaics? What materials were used and how were they acquired? How were workshops organized across the Mediterranean? And how did these craft teams fit within broader networks of artisans?

This paper discusses the case study of a sixth-century AD mosaic workshop discovered at the Bir Messaouda site in Carthage. The on-site presence of a substantial amount of opus sectile fragments, architectural and sculptural remains, marble chips, ceramic sherds, and glass cores indicates that the production of tesserae primarily relied on local and recycled materials. The evidence suggests that the workshop was initially established to produce mosaic pavements for the adjacent Bir Messaouda basilica and may have later expanded to manufacture tesserae on a larger scale. In the workshop’s vicinity, the House of the Greek Charioteers featured seventh-century AD marble floor decoration. The close similarity in the stone types in both contexts suggests the use of shared resources and possibly a direct production link.

By analysing the case study of the Bir Messaouda site, this paper sheds light on the functioning and organisation of a mosaic workshop in late antique North Africa. The Bir Messaouda workshop represents the first of its kind discovered to date in Carthage, and indeed in all of North Africa. Even elsewhere in the Mediterranean, securely attested mosaic workshops remain scarce. This makes it a valuable case study, not only for understanding mosaic production in late antique North Africa, but also for illuminating broader production practices across the Roman world.

Cooperative Works: Community Dynamics and Craft Production

Elizabeth A. Murphy

Production organization models have been used in studies of Roman crafts production since the 1980s. At the time, these models were helpful in classifying the rapidly growing body of evidence of Roman workshops and crafts production, and today it is difficult to find a workshop study that does not use the terminology and variables defined in those models. More recently, however, they have received critical review, not least because—by emphasizing shared characteristics (over divergences) and by privileging

variables related to economic performance (e.g., product specialization, investment in technology)—they fail to capture differences in local cultural practices and smaller-scale community dynamics. This paper takes a critical view on production organization models, by interrogating one such organization type—nucleated workshops—in order to illustrate the diversity of workshop arrangements found within specialized craft communities. Using a dataset of published nucleated industries from the eastern Mediterranean, it then compares these communities of practice to consider evidence for collaborative work practices within different communities. By comparing these cooperative works, the paper highlights differences in local work cultures and social dynamics within small-scale communities of artisans and, more fundamentally, it will provide an alternative interpretive framework for the study of workplaces.

Investigating Communities of Practice in Pottery Production in the Northeast Peloponnese, Greece

Scott Gallimore

The Northeast Peloponnese, Greece was a dynamic, interconnected region with shared production traditions across the Roman period. Pottery manufacture is attested at sites throughout this landscape during this time, including at Argos, Corinth, and Sikyon, and in the Berbati and Nemea Valleys. Each made a series of shapes, including different types of table wares, cook wares, utilitarian wares, and amphoras, within a shared ceramic koine. The processes behind the consistency in these shapes and the inter-community knowledge sharing that led to the development of regional traditions, however, remain understudied and underappreciated. Can we assess how these communities shared knowledge and developed and dispersed traditions to produce this koine? Pottery production in the city-state of Sikyon, attested by pottery kilns active there at intervals during the 1st to 7th century CE uncovered by recent excavations, provides a robust dataset to interrogate the dissemination of artisan knowledge through the lens of communities of practice.

This paper will consider group interests and knowledge sharing in communities of practice as a framework for exploring how and why a ceramic koine of forms came about in the Northeast Peloponnese during the Roman era. This includes examining the social and economic dynamics of working potters, including consideration of status and the potential for an itinerant workforce. It will also consider the fluidity of these traditions and how connections between production centres and the networks that connected them shifted across the regional landscape over time. Within the Northeast Peloponnese, the development of shared, overlapping ceramic traditions demonstrates the necessity to view manufacturing traditions within a regional context and to consider how these connections were fostered and developed. Communities of practice can be teased out of the evidence in this region to shed light on the individuals and processes behind an important, widespread industry.

Digital Fingerprints: Using Shape Measures to Identify and Visualise Micro-Styles in Romano-British Pottery Adapted from Continental Prototypes

Alasdair Gilmour

The pottery forms produced in Late Iron Age and Early Roman Britain were often heavily influenced by continental prototypes: mobile, increasingly mass-produced artefacts that introduced cups, platters, beakers, and other novel forms in Gallic and Mediterranean styles to British tables and potters' workshops. Traditional typological approaches can be effective ways to identify locally produced British pottery imitating, adapting, or otherwise influenced by these continental prototypes. However, they struggle to meaningfully express the nature and variability of the adaptational choices made by different communities of practice among British potters. By instead using quantifiable aspects of vessel shape and form derived from digital scans of pottery illustrations as the base units of analysis rather than traditional typological designations, variability in vessel form and style can be identified, quantified, and visualised both within and between different ceramic types and classes.

This paper uses this approach to identify micro-stylistic variations between continental prototype forms and a sample of their adaptations produced by different British communities of practice, and to quantify and visualise this variability using principal components analysis (PCA) of the vessels' shape data. The physical relationships between vessels quantified by this analysis can help reveal the creative intentions of, and relationships between, the groups of British and continental potters who made them within a wider Roman provincial social context. Furthermore, examining the micro-stylistic adaptational choices made by British potters has the potential to shed light on how pottery production interacts with wider social trends. The aspects of vessel forms preserved or altered in adaptation reflect what was significant to pottery producers and consumers in a region coming under first the cultural influence, and then the political control, of the Roman Empire.

Casting Light on Metalworkers in Roman Roadside Settlements

Jenna Martin, Rhodora G. Vennarucci, Astrid Van Oyen & Gijs W. Tol

This paper highlights the “roadside settlement” or “minor center” as a key nexus of human-object interactions in the Roman countryside that help us better understand dynamic human relationships and social life during the Imperial period. Cross-craft interaction, shared production activities and workspaces, and localized consumer practices shaped uniquely vibrant crafting communities. In particular, this paper suggests how small finds assemblages from (or near) metal workshops might offer a methodological starting point for accessing how these particular craftsmen operated within the broader dynamic community of the roadside settlement. As constellations of both production and consumption activity, small finds offer the opportunity to explore craftspeople not only as makers, users, sellers, and buyers, but also as complex individuals socially embedded in a specific type of rural community. Metalworkers are particularly important for understanding connectivity and crafting in rural communities because they provided necessary services for rural workers and played a crucial role in regional resource and knowledge networks. In addition, compared to large-scale workshops and pottery production, both roadside settlements (as a coherent site type) and metalworkers are under-represented in most synthetic studies of ancient crafting communities and connectivity. This paper presents case studies from published data in the western provinces, drawing especially on robust literature from Britain. In addition, it presents preliminary analysis of the special finds assemblage from the Marzuolo Archaeological Project (MAP) in south-central Tuscany (IT). Marzuolo is a minor center, likely located on a road, with a well-preserved blacksmith’s workshop and evidence for cross-craft interaction during the early Roman imperial period. By exploring roadside settlement assemblages in Italy and the western provinces, this paper also considers how supra-local factors like the Roman army or villa-style agriculture might have had differing impacts across regions.

Divine Craftsmanship: Investigating the Manufacture of Roman Copper-Alloy Statuettes of Deities in the British Museum’s Collection

Katie Manby and the University of Reading

Roman figural ‘bronzes’ or copper-alloy statuettes of deities are often considered solely as small copies of Classical Greek sculptural models. This view pays little attention to the role of the craftsperson (the bronze caster), seeing them as only responding to the commissioner or market need. Under this interpretation, statuettes models are then disseminated across the provinces, with provincial craftsmen reproducing central Italian pieces as apparently poorer quality figurines.

This paper seeks to challenge these assumptions, drawing the craftsperson back into the centre of production and reconsidering the complex relationship between model and finished statuette. It will present the results of new scientific analysis (radiography, mapping X-ray fluorescence and core chemical analysis) of 95 statuettes within the British Museum’s Department of Greece and Rome to better understand manufacturing processes. Changes to statuette design away from their classical models were made due to the requirements of the casting; decisions made by the craftsperson related to factors of size, copper-alloy choice and potentially manufacture location. This complicates the idea that pieces were solely mass-manufactured according to classical models and reinforces the agency of the craftsman and different approaches across communities. Equally, commonalities within other areas of statuette manufacture imply collective knowledge for certain areas of production. This paper explores how individual pieces must have been conceptualised as part of an interaction between commissioner, designer, and caster, taking a case study of male deities (Hercules, Jupiter, and Mercury) to explore how a group of visually similar pieces were manufactured in different ways.

Ultimately, the paper challenges the assertion by previous cataloguing of this collection that such Roman statuettes are ‘devoid of artistic merit and only of ... interest ... where a relation can be traced to some known Greek statue’ (Walters 1899, lvii), placing them back within the framework of Roman craft interactions.

TRAC2: What It Is to Be Roman: Experimental Archaeology and Living History

Session organiser: Alexander Iles

The diversity of studies, experiments, and public engagement offered by Roman experimental archaeology is immense. Large datasets, well-documented excavations, and rigorously translated ancient sources enable detailed studies to be carried out on a myriad of aspects of Roman experience. Experimental archaeology offers an opportunity to test construction

methods, resource gathering, food and drink recipes, and object construction or even simulate living conditions in Roman accommodation (as documented in: *Experimental Approaches to Roman Archaeology*) to better understand Roman life. It offers many opportunities for multi-disciplinary research of Roman archaeology.

Unlike experimental archaeology, focused upon scientific, replicable studies, living history focuses on an experiential approach to archaeology. These displays are theoretical, providing experiences, primarily for the public, often in living history centres or museums, or in local history festivals, including reenactments of historical events. These displays should be seen as a way of engaging researchers asking questions of status, power and ritual within the Roman world and how these are understood by modern audiences. How do modern audiences respond to a depiction of an imperial delegation, or at the other end of Roman society, when a living historian depicts a slave? What is the experience of religious or cultic practices? Ancient displays were intended to evoke a response from the audience. Living history displays offer a medium for modern audiences to experience the Roman world in ways that clash or engage with established narratives of Roman civilisation, questioning established narratives. Living history, grounded within archaeology, offers this, enabling archaeological theory, especially in the areas of ritual, processional theatre, post-colonialism and hierarchies, to be depicted and engaged with by the public.

Comparative Study of Archaeology of Bathing Culture Between Qin and Han Dynasty and Ancient Rome

Yixuan Cheng & Cheng Xue

Bathing was an important embodiment of cultural characteristics in Qin and Han dynasties. At the same time, Roman bathing culture developed rapidly and became an important symbol of Roman civilization. Firstly, Bathing facilities in Qin and Han dynasties and ancient Rome were equipped with drainage, heating and antiskid system. However, Roman was more advanced than in Qin and Han dynasties, including lighting, heating system and service facilities in bathrooms.

Secondly, Bathing products in Qin and Han dynasties were mostly made of wood, pottery and copper, with simple shapes and small models. Roman bathing products were mostly made of wood, pottery, copper, gypsum and glass, with various shapes and types.

In addition, The form of bathing in Qin and Han dynasties were relatively single and private and the whole bathing process had strict grade requirements. But Roman baths were free and varied in form and flexible in process.

Finally, the bathing in Qin and Han dynasties not only had the function of cleaning, but also had etiquette, religion, health care and disease treatment. Ancient Rome had relatively more bathing functions, it also had entertainment, fitness, social communication and other functions. It was also an important means for the political power stability.

According to this study, we can see that the two bathing cultures have both similarities and respective characteristics. This phenomenon is mainly caused by different cultural backgrounds, natural environment, regional differences and other reasons. The two bathing cultures not only play an important role in the development of eastern and western civilizations, but also promote the development of ancient bathing cultures in the whole world.

Portrayal of Gladiators and Gladiatrices in Reenactment

Svenja Fabian

One of the most iconic figures from Ancient Rome is the gladiator though many misconceptions exist especially among the general public. Reconstructions of gladiator fights came up beginning of the 2000s by some scholars such as M. Junkelmann from Germany, D. Battaglia from Italy, and B. Lopez/E. Teyssier from France. This paper presents two perspectives:

The presentation of gladiator fights at different type of events such as museum festivals or presentations at schools either during regular history or sports lesson or at a special themed day. The living historian has the choice choreograph the fights or do free fights. With my reenactment group we always did free fights, hence training on a regular basis such as for any other Martial Art. At presentations we moderate the shows with explanations about gladiators in general, and the various types of gladiators in particular based on the latest scholarly research.

Among the fighters of my group are women which might come as a surprise to many in the audience. We ask the audience if they existed and the majority thinks that they didn't exist. But indeed, female

gladiators were a real thing as can be proven by written sources such as law texts and literature, or archaeological finds such as the famous relief of Amazon and Achillia (which is now on display at the British Museum). They were not as many as the men and the ratio which we present at our shows, therefore, doesn't represent the ancient reality. Still, we don't want to exclude the women, or number of women per show, but explain that it was an exception rather than the rule during gladiator displays historically and hence counted as something extraordinary. With women appearing in a show the female audience gets (more) engaged in the presentation. At school gladiatrices could act as a role model for the girls.

Striking the Emperor: Recreating the Bronze Portraits of Augustus

Francesca Lam-March

This paper investigates the production of bronze provincial coinage in the early Roman Empire through an experimental archaeology project conducted at Butser Ancient Farm in collaboration with King's College London. By reconstructing the full chaîne opératoire of bronze coin production, from alloying and casting to striking portrait dies of Augustus, the project moves beyond textual and typological analyses to explore the entanglement of material, technological, and social factors in the making of imperial imagery.

The practical experiment revealed the complexity of bronze coin manufacture, involving multiple skilled participants, precise control of materials and tools and sustained labour over extended periods. These observations invite a reconsideration of the role of bronze coinage within provincial contexts. Rather than functioning solely as low-denomination currency, such coins may have operated as vehicles of local identity, imperial ideology, and embodied engagement with the emperor's image.

Through making, touching, and striking these coins, participants encountered the physicality and sensory dimensions of ancient production that traditional archaeological evidence cannot fully convey. The project therefore foregrounds aspects of minting as a means of negotiating power and presence at the local level.

This paper argues that experimental reconstruction can serve as a critical interpretive method within Roman archaeology. It situates technological practice within broader frameworks of material agency, representation, and the lived experience of empire. By quite literally re-embodiment Augustus in bronze, the project reanimates questions of meaning, value, and imperial presence in the Roman provinces.

Cities of the Dead? Experiencing Roman Funerary Landscapes in the Present

Emily Johnston

Roman necropoleis were dynamic zones of interaction between the living and the dead; embedded within the social and ritual fabric of daily life. Offering the case study of Ostia Antica, this presentation reconstructs the experiential dimensions of these spaces, including their colours, movements, sounds and atmosphere. Through application of a phenomenological approach, it becomes possible to reconceptualise the static monuments of the "cities of the dead" as a vibrant and living landscape.

Revisiting this interpretative framework from the perspective of public archaeology, this paper interrogates how these spaces are mediated and experienced by contemporary audiences. In current heritage practice, Roman cemeteries are often framed through Western notions of death, mourning and sanctity. In doing so, modern visitors often obscure the active, affective and communal roles that these sites played in antiquity.

Drawing upon my professional experience in public archaeology and heritage interpretation, this paper considers how interpretive strategies, site presentation and visitor engagement can shape our contemporary understanding of Roman funerary spaces. Are necropoleis presented as vibrant social landscapes, or as static repositories of the dead? What sensory and emotional registers are privileged or excluded in current heritage narratives?

This paper constitutes a provocation to rethink how public archaeology can articulate the sensory and affective dimensions of Roman "cities of the dead", and to question the interpretive frameworks through which they are presented to modern day audiences. In doing so, this paper will argue for greater reflexive engagement with Roman funerary heritage in order to recognise both the historical vitality of these landscapes and their potential to reframe contemporary assumptions about death and memory.

Methodological Approaches to the Reconstruction of Imperial Fashion in Late Antiquity: A Living History Perspective

Geza Frank

The reconstruction of imperial fashion in Late Antiquity poses significant methodological challenges, arising from the paucity of surviving textile artefacts and the fragmentary nature of the archaeological record. While direct physical evidence of garments, colours, and materials is exceedingly rare, the combined interpretation of iconographic, textual, and archaeological sources allows for the formulation

of credible and contextually grounded reconstructions. This paper explores how a living history framework can serve as a rigorous methodological tool for reconstructing and interpreting the dress of the late Roman elite, focusing particularly on the interplay between empirical data, experimental practice, and interpretative reasoning.

Through the systematic analysis of visual representations—such as mosaics, sculpture, and manuscript illumination—alongside literary and documentary sources that describe imperial attire, it becomes possible to infer the structural principles, aesthetic conventions, and symbolic functions of dress in the fourth to sixth centuries CE. Archaeological evidence concerning textile production, dye technology, and tailoring techniques further provides a material foundation for these interpretative reconstructions. The presentation argues that living history, when pursued with scholarly discipline and methodological transparency, constitutes more than an illustrative or didactic practice. Instead, it offers a form of embodied experimentation through which hypotheses about ancient craftsmanship, social display, and cultural identity can be critically examined. By recreating the textures, weights, and movements of reconstructed garments, the process affords unique insights into the sensory and performative dimensions of late Roman imperial representation. Ultimately, this study demonstrates that reconstruction, situated within a living history methodology, can meaningfully contribute to our understanding of the technological sophistication and cultural symbolism embedded in the fashion of Late Antiquity.

Project Periphery: A Collaboration Between Archaeology and Visual Arts

Olivér Borcsányi, Jason Bunton & Alexander Trausner

The “Periphery” project is a transdisciplinary collaboration between Archaeology and Visual Arts, focusing on the everyday culture of the lower social strata in the Middle Danube region during Late Antiquity (late 4th to early 5th century AD). We investigate an era of fundamental change, characterized by the gradual withdrawal of Roman administration from the areas of Lower Austria, North Burgenland, Western Slovakia, and Western Hungary.

This phase, immediately preceding the collapse of the Western Roman Empire, is historically associated with economic weakness and a significant decline in public and state-sponsored projects. Starting from the material culture of this region, which as a periphery of the Empire never attained the distinct characteristics of the imperial center, we aim to re-examine simple, everyday life.

Our project critically challenges the prevailing cultural narrative, which often implies a hierarchical superiority of technically more complex societies and social classes. We aim to present the supposedly “simpler” (i.e., less technically complex) culture of this often negatively connoted period of European history in a new light. Material evidence suggests that essential aspects of life could be maintained without a primary reliance on metal products: cooking and baking did not require metal; clothing and attire could be made aesthetically appealing without complex metal applications; and interiors were decorated using simple earth pigments.

By focusing on these practices of self-sufficiency, we hope to correct the established, often demonized view of Late Antiquity and stimulate a critical reflection on the role of technological determinism in historical and cultural perception.

Re-Visiting Roman Era Knitting

Niina-Hannele Nuutinen

The first evidence of open loop knitting is currently known to present itself in the first three centuries of the Common Era and is mostly known to be found from Roman settlements in the Eastern desert of Egypt. While the research of the second half of 20th century has been focused on disproving knitting as Roman era technique, mainly by separating knitting from nalbinding, the current evidence does also place some types of early open loop knitting into the Roman era. As tempting as it seems, it is important to acknowledge that open loop knitting is not a structure that can be made with an end led technique such as nalbinding. Although the research into looped textiles is rightfully focused on nalbinding (to correct the misinterpretations introduced last century), the early steps of open loop knitting should not be overlooked. Besides being an open loop structure, the Roman era knitting is mainly worked as compound knitting, or “knitted into the row below” in common knitting terms. This compound structure of open loop knitting is easier to achieve via the use of a bobbin, a spool, or in modern terms; a knitting loom. This suggests that the first evolution of knitting wasn’t created using needles. Unfortunately, no finds pointing to tools such as bobbins or knitting needles have been found (no, it wasn’t the dodecahedrons). Discussing the wider variety of possible tools used in creating open loop knitted textiles might aid in recognizing these tools. Recognizing the variety of different looped textiles from the vast majority of woven textiles is a key element in the better understanding of the development of all looped textiles, and the steps they took during Roman era.

Revitalizing the Dura-Europos Sock: Using Ratios to Estimate Original Size and Form of Fragmentary Nalbound Socks

Anne Marie Decker

Of the over 70 examples of nalbound socks found in Egypt and surrounding regions within the borders of the Roman Empire, many are fragmentary and often fragile. The mechanical support required for their conservation and/or display often obscures their initial form, rather than pointing toward it. This makes it difficult to visualize the appearance of the original object from its remains. The production of looped textiles entails the simultaneous crafting of both the component stitches and the intended garment. A fragment can readily reveal the stitch structure but extrapolating the larger object from it requires intermediate contextualization. This is provided by insight gained from detailed examinations of Roman Era nalbound socks. There is variation in the specific nalbinding stitches used. Additional distinctive attributes are the form of the increases in the nascent fabric, types of pickups, decorative welts, patterned heel cups/insteps, ankle treatments such as slits, ribbing, fringe, closures, etc. Examination has also revealed that while the socks range over both time and distance, substantially complete exemplars follow a general construction pattern that can be reduced to characteristic numerical ratios. These ratios correlate to the overall size and shaping of the sock. They are based on the number of: stitches at the start of the toe, increases in the multi-toe cup, rows in the toes, stitches and rows in the mid-foot body, stitches and rows in the heel flap, and the gauge of the sock's fabric. This paper illustrates how these ratios help determine the original size and likely decoration of fragmentary socks. Which then provides a more rigorous basis for reconstruction of their original three-dimensional form. The patterned heel cup/ankle fragment from Dura-Europos, Syria, has been particularly difficult to visualize as a sock. Its reconstruction by applying the methodology outlined above more clearly contextualizes, and revitalizes, this stunning example.

Making Abstract Ideas More Concrete: Using an Experiment to Make Opus Signinum as a Pedagogical Tool for Introducing Humanities Students to Archaeological Theory and Methods

James Harland

This study will examine the results from an experiment attempting to make opus signinum (Roman concrete which uses tiles, bricks, and ceramics as an aggregate), following the design of an experiment conducted by Martínez et al. 2024, which was conducted with students at the Bonn Center for Dependency and Slavery Studies on the 29th of November 2024 in a session on “Experimental archaeology” for the “Material Culture: Methods” module, taught in the first semester of the MA in Slavery and Dependency Studies.

In the study, I consider discuss the design, practice, and results of the experiment, specifically in reference to the pedagogical goals which lay behind the design of the experiment, which are informed by the principle of Inquiry-Based Learning (IBL, after Khan and O'Rourke 2005) and experiential learning (Kolb 1984). Students on the MA in Slavery and Dependency Studies come from a broad range of disciplinary, academic, and national backgrounds, but usually with little-to-no archaeological training and little prior background in the study of ancient history or archaeology (or often little European history at all). I will illustrate the value of archaeological experimentation (after Callahan 1999) for engaging such students with core principles in archaeological theory and method (such as studies of the chaîne opératoire (Mauss 1935; Lewis and Arntz 2020) and object biography (Kopytoff 1986)), and how such practical experimentation serves to develop students' understanding of using archaeological methods to study social and economic phenomena in premodern societies, including the specific concerns of inequality and dependency with which students at the BCDSS are concerned (Hodder 2011).

Romans in Eire: How Roman Reenactment Can Aid Museums with Their Interpretation within Irish History

Sean Ceannt & Shane Kent

This project will work to give a context and framework to the use of reenactment within Ireland. Roman archaeological material has been known of in Ireland since the 19th century; however, the context of these older finds has caused contention within circles of Irish historians and in academia. Thanks to recent excavations in Fingal in Dublin, more material is becoming known, and this will start a new issue, how to display and interpret it. Using Previous academic work of my own writing, new excavations, and my experience in Museum studies and in reenactment, I will aim to show you how the hobby that is reenactment can be a great boon to the field of interpretation and display of history to a wider public audience.

From Wool to Wood: How Re-Made Roman Dress Revives the Ritual Heart of Plautus

Benjamin Roth

Roman comedy was performed in temporary, wooden frame theatres during civic festivals, where costume acted as a ritual marker of status, gender and cultural identity. This paper proposes an experimental archaeological and living history investigation of how reconstructing Plautine dress—especially the pallium, palla, chlamys and footwear—affects the dynamics of a staged Menaechmi and the affective responses of a modern audience.

First, a modest suite of historically informed garments would be fabricated from period appropriate wool, linen and bronze fastenings, following Jan Radicke's (2023) typology and the textile analyses of Harlow (2017) and Haug & Hielscher (2022). A temporary theatre replica would be erected on a university campus, modelled on 3rd century BC wooden theatres as described by Richardson (1992) and Beacham (2002). The performance would open with a brief dedication ritual echoing the Ludi Romani, situating the play within an original religious context (Beard 2013).

During the performance, actors would wear the reconstructed costumes; afterward, audience members will handle the garments and complete a short questionnaire probing perceived character status, gendered power relations, and the sense of participating in a ritualised event. Qualitative focus group discussions will complement the survey data, building on the audience affect methodology of Dutsch (2013) and McGinn (2004).

By foregrounding materiality, spatial authenticity and ritual framing, the study aims to show that costume reconstruction renders the symbolic economy of Plautine comedy perceptible to contemporary viewers, enriching public understanding of Roman social hierarchies and cultural hybridity. The paper outlines the methodological design, anticipates interpretative outcomes, and argues for the value of such interdisciplinary experiments in bridging classical scholarship, experimental archaeology and public engagement.

TRAC3: Dry data? Archaeology on the Arid Fringes of the Roman Empire as Inter- and Trans-Disciplinary Research

Session organisers: Anna-Katharina Rieger & Gaëlle Tallet

Doing archaeology in arid regions offers advantages such as preservation and visibility, but it can suffer from scarce data spread across vast, hard-to-access areas. This is particularly true for research in parts of the MENA-region that were once within the Roman Empire. Long-standing studies along the Roman-Parthian/Sassanian frontiers in Syria and Jordan, the Egyptian oases, or alongside Nabatean or Palmyrean trade routes into the Arabian Peninsula has increasingly adopted interdisciplinary approaches. Evolving from 'classical' working with textual as well as material sources, a methodological and theoretical tool set evolved over the last few decades from geo-archaeology, remote sensing and various scientific dating methods. The knowledge gained from these - in Mediterranean perspective - marginal regions for the overall understanding of economic, political and socio-religious history cannot be overrated (Bourgeois et al. 2024; Bravard et al. 2016; Campmany Jiménez et al. 2022; Driessen - Abudanah 2018; Vetter - Rieger 2019). In light of current challenges such as desertification, insights into past economic strategies can inform today's sustainability and resilience efforts, beyond arid zones.

The panel seeks to explore emerging trajectories shaped by the described approaches: For instance, AI-applications have begun to facilitate surveys strategies (Ben-Romdhane et al. 2023), albeit requiring significant computational capabilities and generating large datasets. Despite of availability of refined scientific dating methods (Dunseth et al. 2017), national regulations and lab capacities restrict their application in the mentioned regions, leading to limited comparability and approaches. Additionally, while palaeo-climatic data offer higher resolutions in the Mediterranean and the MENA-region, they necessitate normalisation. Specialized studies on pottery and content analysis, aDNA, and isotope studies play pivotal roles in understanding economic production, exchange of commodities, connectivity, and mobility, however, need to be integrated to historical interpretation (e.g., Mattingly 2023). Finally, in rapidly developing desert zones, questions of cultural heritage, inclusive archaeology and ethno-archaeology with all its implications from restauration, musealisation

to decolonisation need to be addressed. These considerations contribute to broadening the interdisciplinary spectrum in order to gather as much data as possible from arid, data-scarce environments.

The contributors critically reflect on methods, approaches, material categories, or specific sites to delineate the current state and potential future directions of the field or research. They contextualise the marginal situation within the Roman Empire's perspective, integrating it into a broader historical narrative and considering our academic positions when researching MENA-regions. Ultimately, archaeology in arid zones can evolve from an interdisciplinary to a transdisciplinary practice of material historical research. to effectively study data-scarce landscapes.

Questions include:

- How can arid areas of the MENA-region be seen from a perspective of Roman Archaeology?
- How can AI, digitalisation and big data sets broaden approaches to arid landscapes?
- How can paelaeoclimatic data be normalised?
- In how far does geo-archaeology in arid regions need the specialisation of hydro-archaeology?
- How are pottery studies developing and what impact does this have on arid zone archaeology?
- How can built on local knowledge of (in some MENA-countries) marginalised people of arid zones?
- How can we deal with infrastructural development in desert zones impacting (often little visible) heritage?

“There was no rain anywhere and the prices of grains skyrocketed.”. To What Extent do Environmental and Non-Environmental Sources Provide a Consistent Picture of Climate Change in the Roman, Late Antique and Early Islamic Levant?

Tomasz Waliszewski & Nicolas Bernigaud

This literary topos, repeated in late antique chronicles from the eastern Mediterranean basin, is a telling source on the problems encountered by the population of the Roman and late antique East, including Syria and Palestine, in connection with emerging climate disasters. These had a direct impact on the local and global economy of the Mediterranean world and, consequently, on the lives of hundreds of thousands of people.

For over the past 25 years, the Roman and late antique Levant has been the subject of research into the climate of the time and its fluctuations. This is evidenced by numerous publications resulting from the collaboration of climatologists, geologists, historians and archaeologists. However, we sometimes have the impression that the research community still pays too little attention to verifying the results of these studies in the light of various sources, including archaeological ones.

In the context of the above comments, we would like to look at some climate change hypotheses concerning the arid margins of Syria and Arabia, as well as research from sites on the Mediterranean coast, in order to seek answers to the question of whether these hypotheses are consistent with the picture emerging from the analysis of non-environmental sources. Among different approaches, we will present some simulations of climate change in Antiquity processed by agent-based model (ABM) and their potential impact on agriculture. Results of these models will be discussed by their confrontation to archaeological and historical datasets.

Multi-Disciplinary Approach to Late Antique Animal Production and Consumption at Chimtou, Tunisia

Rosalind E. Gillis, Matteo Bormetti, Heike Möller, Melanie Roffet-Salque, Charlie A. Maule, Moheddine Chaouali, Corisande Fenwick & Philipp von Rummel

Chimtou (Jendouba Governorate, Tunisia) was an important urban centre for marble production during Roman times. Its position lying in the semi-arid Mediterranean environment, adjacent to the Sahel to the south and southwest making it an important area to study food production and land use in potentially increasing arid conditions. Animal remains provide insights not only into human diets but also subsistence economy and environmental context. Ruminant teeth host well-preserved stable carbon and oxygen isotopic records of their diet within a single annual period, directly reflecting human decisions namely herding strategies. Organic residue analysis of absorbed lipids in pottery sherds add another dimension to study human diet, food procurement bedded within the environment context. In

this paper we will present the preliminary result of a pilot study conducted on Late Antique to Early Medieval pottery and faunal assemblages excavated during the ISLAMAFR project (Institut National du Patrimoine, Deutsches Archäologisches Institut, University College London). This integrated analytical approach sheds light on animal management and consumption practices. The results encourage further application of biomolecular techniques in the region.

Remote Sensing and Rural Landscapes in North Africa during the Roman Period

Nichole Sheldrick

In the past 20 years, advances in remote sensing technology have had a massive impact on the ways that archaeological survey is undertaken in the arid landscapes of North Africa. The speed and ease with which survey can be undertaken using open-access, user-friendly remote sensing applications like Google Earth, and more recently combined with advances in machine learning automated detection methods, has resulted in an unprecedented amount of data being generated. These techniques are particularly effective in the rural landscapes of North Africa, where the relative lack of vegetation and dry climate have resulted in the excellent preservation of a variety of farm buildings, enclosures, field systems, and cemeteries from the Roman period, many of which show up very clearly on high-resolution satellite imagery.

While the extraordinary volume of data that is being collected via these techniques is producing much new and interesting research, it is also changing the way that archaeological research and survey is being conducted in the region and is creating new challenges in the interpretation, dissemination, and long-term curation of these data. In addition, as quickly as data is being generated, archaeological sites are now also being destroyed at an unprecedented rate due to rapid urban and agricultural expansion, conflict, and climate change. This paper will reflect on the impact that remote sensing has had on the study of rural archaeology and heritage of the Roman period in North Africa, and the ways in which projects like EAMENA (Endangered Archaeology in the Middle East and North Africa) are also using advanced remote sensing methods to document these sites and track landscape change in the face of modern threats.

Ancient Innovative Water Management and Agriculture in the Udhruh Region (Jordan)

Roeland Emaus, Mark Driessen, Fawzi Abudana & Maarten Sepers

Access to water is one of the greatest global challenges of the 21st century. Scholars from different fields of research around the world are dealing with the ever-growing demand for water, and the growing complexity of its supply. Ancient societies dealt with similar problems, and there is much to learn from antique engineering solutions. In the Udhruh region (southern Jordan) intriguing transformations in the organisation of water resources, agricultural systems, settlement patterns, communication networks and military control have been observed for the first half of the first millennium. The long-term development of innovative agro-hydrological systems around Udhruh - in the hinterland of Petra - turned the steppe into a green oasis.

This paper focuses on the recent results of our interdisciplinary research, with the focus on an elaborate and well-preserved qanat system. The Udhruh qanats consist of large-scale, predominantly underground components of extensive ancient agricultural complexes. Research on these systems requires both clearly defined research objectives and specific methods and techniques to document the extensive material remains of these complexes, especially since, due to their underground nature, they are not easily accessible.

The Udhruh Archaeological Project employs contemporary digital methods and techniques for the three-dimensional spatial documentation of all aspects of the qanat system. In addition to more traditional methods of archaeological work and documentation, the information produced in such a digitally-based approach is of a more holistic nature. The data can be approached as a spatial model within which other information and knowledge, such as soil analyses, dating, excavation results, and field surveys, can be brought together coherently. From a societal perspective, our aim is to examine what the key to this water management and agricultural success was in ancient times, and more importantly, how this knowledge can contribute to sustainable agriculture and water management solutions in the future.

The Next Phase: Plans for a Conservation Strategy of Qasr Bshir (Jordan)

Mark Driessen, David Breeze & Frans van de Looij

The current state of Qasr Bshir is overwhelming even in its decline. In the previous paper our team presented the nowadays situation by means of a 3D-(re)construction. This model has been used as base plan for an architectural blue-print, which was created by an architect involved in the project. Our archive of pictures going back to the 1890's will be refitted in this blue-print and the 3D-model, so we can monitor the long-lasting and more recent natural and anthropogenic disturbances and ruinisation processes. This can be used for a conservation strategy plan as Qasr Bshir's preservation and

consolidation can be considered one of the Outstanding Universal Values for a possible future World Heritage Nomination. Qaşr Bshir is already on the Jordanian Tentative List of the World Heritage Convention. The interests of the local Bedouin communities - and their enduring protection of the local water means and reservoir - should be fully integrated in the plans to be made. They and other stakeholders have proven to be reliable stewards in future awareness and protection plans. This can result following their wishes in bottom-up community-based tourism plans for Qaşr Bshir and its direct environs.

During this paper's presentation we would also like to discuss ideas on restauration; temporarily closing parts for the public due to serious collapse risks; other public and/or private event uses of the fort, which might be used for financing future plans etc...

The Qaşr Bshir Conservation Project (Jordan): The 3D-Reconstruction of a Desert Portal to the Roman World

Maarten Sepers, Mark Driessen, Roeland Emaus, Isaiah Claeys, Julian Baldwin & Loic Wilschut

Deep in the Jordanian steppe lies the best-preserved Roman fort in the whole Roman empire and the only one surviving with its original building inscription still in position over its entrance: Qaşr Bshir. The location of the fort was well chosen for it had good visibility, and close to good rainwater harvesting wadis enabling the construction of a large reservoir, which even contains perennial water supplies today. Such water locations were important assets to gain and maintain control over the region by military authorities. Qaşr Bshir's isolation and difficulty to reach the site have resulted on the one hand in its preservation, but on the other also in uncontrolled looting throughout the last decades. There has been catastrophic collapse of some walls so that the fort is now surrounded by a jumble of enormous stones. This unique fort deserves a solid plan for future consolidation. Next to that this iconic monument, its setting and surroundings can contribute to Jordan's small-scale community-based tourism, which can contribute to less future looting. Its cultural and natural environment, including its antique water system, is also of vital importance for the local farmers and Bedouins.

As a pilot study for a strategy plan of Qaşr Bshir, we did monitor its current condition. For this we made 3D reconstructions of the full exterior, interior and subterranean parts of the Roman fort plus its wider setting in the surrounding landscape. These 3D-reconstructions will be of pivotal use for a to be developed strategy of the fort's consolidation and restauration and its surrounding area and plans for involvement of local community for small scale community-based tourism plans.

TRAC4: Ritual Deviation and Variance in Roman Cults: Interdisciplinary Theoretical Perspectives

Session organisers: Blanka Misic & Abigail Graham

The Romans considered that performing religious rituals correctly was vital for their success. Rituals were structured, complex, and causally opaque; any deviance from correct ritual proceedings risked resulting in ritual failure and in the need to repeat the ritual until a favourable outcome was achieved. But should we automatically assume that ritual variance or ritual deviation led to ritual failure? While a ritual needed to maintain a certain structure to ensure continuity and successful transmission, at the same time a ritual had to adapt to new environments and worshippers in order to effectively spread and persist. This session explores how religious rituals transformed and persisted in the Roman world by applying diverse theoretical perspectives from sensory archaeology, cognitive study of religion, anthropology, religious studies and related disciplines. It aims to advance the field and provide cross-disciplinary insights to the following questions:

- How can interdisciplinary theoretical perspectives help us understand better ritual variance, ritual deviation and/or ritual continuity in the Roman world?
- How can a ritual change while maintaining continuity?
- How does variance and/or deviation in ritual proceedings impact the learning, remembering, and/or transmission of rituals?
- How can ritual variance/deviation/failure affect individual and/or collective ritual experiences of worshippers?

- How can repetition of ritual result in ritual variance?
- How can ritual variance/deviation/failure be traced in the material record?

Ritual (Dis)Continuity in Early Rome. Reflections on the Intergenerational Transmission of Memory and Ritual Knowledge

Francesco Vincenzo Timpano

The study of ritual behaviour in relation to ancient Roman culture, which is known to be characterised by a significant religious textual tradition, has long been based on the analysis of written and iconographic sources. Among the consequences of this tradition of study, in addition to a dangerous disconnection from the realia preserved in the archaeological record, is the widespread perception of ritual conservatism: that is, the principle of repetitiveness whereby a ritual is performed in the same way for a certain period of time, even when its essential elements and, above all, its meaning are no longer understood. In the case of ancient Roman religion, this feature has been explained as follows: for relatively short periods, such as one or two generations, it has been connected to information deduced verbally and/or gesturally from experienced ritual actors; in the case of longer periods, for example of the order of many decades or even several centuries, it has been related to the agency of objects used in rituals and that of the cult buildings where these were performed. In fact, these two elements, religious buildings and objects used in ritual behaviour, tend to maintain their typological and formal features substantially unaltered for a rather long period of time, a peculiarity whereby they have been considered entities with a specific mnemonic weight, i.e., agents of memory that guarantee the preservation and transmission of ritual knowledge between different generations.

With particular reference to Orientalising and Archaic Rome, this contribution adheres to such cross-disciplinary insights but, at the same time, examines the (im)material evidence documented in the archaeological record, demonstrating a ritual (dis)continuity over the long term: ritual procedures were modified in order to ratify changes and modifications in the architecture and constituent elements of religious buildings, despite their conservative nature.

Exemplarity and Deviation in Roman Prayer

Eric Orlin

This paper focuses on Roman prayer as a site where the discourse of unchanging continuity hid changes in ritual over time. I argue that insights from Matthew Roller's work on exemplarity in Roman culture can be applied to ritual practice in Rome to help explain this paradox. Most exempla concerning religious practice in Rome emphasize that deviation from the established ritual created a rupture in the *pax deorum* and thereby led to disastrous outcomes for the Roman state; individuals such as Gaius Flaminius or Appius Claudius come to mind. Specifically in regard to prayer Pliny the Elder notes that the magistrates of the state used fixed prayers (*certis precationibus*) to avoid deviating from established practice. Yet changes in Roman prayer language can be documented, most visibly in the prayers used during the Secular Games of 17 BCE and 204 CE, thanks to their preservation on marble stele. Nor was Augustus the first to alter a prayer, as Scipio Africanus apparently amended the prayer concluding the census to pray that the gods should keep the Romans "safe in perpetuity" rather than constantly enlarging the state. Roller's work suggests that positioning actions as an extension of established practice into a new arena or as going beyond others in the same arena, rather than as a rupture with established practices, allowed for the possibility of change. Scipio's variation on the prayer aims to extend Roman power in time rather than space, while the inclusion of "me, my household, and my familia" in the Secular Games prayer extends the traditional prayer into a new arena. Scipio's exemplum, related by Valerius Maximus in the years following the Augustan Principate, may even have served as a model for Augustus. Successful ritual change in Rome required such navigation around the discourse of continuity.

Reimagining the Gods on the Edge: Ritual Variance and Iconographic Adaptation along Hadrian's Wall

Stefania Golino & Rita Sassu

This paper examines how divine imagery and inscriptions from sites along Hadrian's Wall in northern Britain reveal processes of ritual variation, iconographic transformation, and cultural negotiation between the second and fourth centuries CE. The carved reliefs from this frontier region provide a vivid testimony to the interaction between Roman and local religious traditions.

The iconography combines well-known Roman motifs, such as Jupiter enthroned, Mars in armour, and Minerva with spear and aegis, with highly localized figures including the Wheel God, the Horned Deity, and the Hooded Spirits. These images are not provincial imitations of metropolitan art but creative reinterpretations of divine forms within new ritual and social frameworks.

By integrating iconographic and epigraphic evidence, the paper argues that such hybrid depictions express how communities redefined their ritual practices and divine relationships in a context of cultural plurality. The mechanisms of *interpretatio Romana* allowed local worshippers to align their gods with imperial ones, producing flexible systems of meaning that maintained both continuity and innovation. The religious landscape of Hadrian's Wall emerges as a dynamic arena of exchange, where soldiers, settlers, and indigenous populations participated in a shared yet diversified sacred experience. Rather than illustrating decline or provincial isolation, these reliefs embody the adaptability of Roman religion, showing how ritual and visual variance could sustain its vitality at the very edge of Empire.

Silent Sanctuaries? Reading Ritual Transformation in Pompeii's Archaeological Record

Tommasina Matrone

This paper investigates the concept of ritual deviation and variance through a comparative analysis of Roman and pre-Roman cultic practices, focusing on how rituals could transform while maintaining continuity. It examines how processes of ritual change, adaptation, and deviation can be identified archaeologically, arguing that the significance and persistence of a ritual cannot be evaluated solely through the quantitative presence of material remains. Adopting an interdisciplinary framework that integrates archaeological, anthropological, and historical-religious perspectives, this study reconsiders the complex relationship between ritual performance, material culture, and social transformation within evolving religious systems.

The city of Pompeii provides an exceptional case study for addressing these questions. Rather than reflecting a linear decline in religious activity during the 5th century BC, the archaeological record reveals a dynamic interplay of continuity, innovation, and local reinterpretation across the Archaic, Samnite, and Roman periods. The apparent "silence" of the votive record, often interpreted as evidence of cultic regression, may instead indicate transformations in ritual practices and depositional strategies within a shifting socio-political landscape. These changes suggest not rupture but reorganization—an adaptation of sacred activity aligned with new forms of communal identity and governance.

Through a detailed analysis of votive assemblages, coroplastic production, and architectural reconfigurations from major sanctuaries—such as those dedicated to Apollo, Athena/Minerva, and Venus—this paper explores how variations in material selection, iconography, depositional practice, and spatial reorganization articulate distinct local ritual grammars. Special attention is given to the emergence of new votive types, including representations of Athena with Phrygian helmet, Eros, and Hermaphrodites, which may signal shifting ritual meanings, evolving divine representations, and processes of religious reinterpretation.

By tracing these patterns of ritual difference, continuity, and disruption, the study argues that ritual variance functioned as a dynamic mechanism of adaptation and resilience, actively shaping religious experience, social cohesion, and communal identity across pre-Roman and Roman contexts.

Variation on the Same Tomb: Material Traces and Ritual Practice in Porta Nocera Necropolis (Pompeii)

François Fouriaux

This paper explores, through a new high-resolution field methodology, how repetition and variation shape ritual practice in Roman funerary contexts (Van Andringa 2021). Drawing on Lefebvre's distinction between dominated and appropriated space (Lefebvre 2000), I argue that variations in ritual performance express an appropriation of the ritual itself through practice. Each ritual instance appears unique, yet it participates in a broader system of practices that structure collective memory and social cohesion. Rather than assessing the success or failure of a rite against a fixed norm, this approach views ritual variation as a dynamic process of re-creation, where individual gestures sustain and transform collective tradition.

Ancient texts offer invaluable frameworks for understanding the commemorative sphere, yet they rarely capture the nuances of ordinary ritual action beyond exceptional events. Material traces – ceramic and glass fragments and food remains preserved in the soil of funerary spaces – provide a complementary perspective, revealing how gestures were actually performed. Studying these concrete traces allows us to explore how ritual practices were constituted, transmitted, and reformulated over time.

High-resolution research conducted in the Porta Nocera necropolis at Pompeii reconstructs the gestures performed and reveals their variations within a shared ritual framework. Archaeological material must be understood not as the static outcome of a funerary activity but as a dynamic assemblage in perpetual becoming, gradually shaped by repeated variations of the same gestures.

Combining spatial analysis, trace observation, and experimental breakage of facsimile objects, this study demonstrates both the intentionality and diversity of object breakage during funerary rituals. Experimentation further exposes the sensory and mechanical constraints of these acts, highlighting the embodied nature of ritual practice and the balance between collective repetition and individual expression.

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From the Galaxia to the Taurobolium - Romanisation of Cybele Worship in Athens

Margaryta Sardak

The rise and evolution of the cult of the Mother of the Gods in the Greco-Roman world constitutes a compelling area of study in ancient religious history, although numerous aspects of this subject remain insufficiently understood. In the 5th century BCE, and possibly even earlier, Athens was an important stop on the path of development and spread of this cult - crucial for the unfolding and consolidation of the goddess's iconography, as well as for the differentiation and enrichment of the rituals dedicated to her. This makes it even more fascinating to observe how this Hellenistic cult, which Athens had helped to shape in its early days, after being absorbed, adapted and further developed in Roman culture, returned to Athens in its triumphant march through the Roman Empire and revitalised Athenian rituals with new impetus. Thus, the Athenian cult of Cybele is a promising example for the study of long-term changes, deviations, variations, and actualisations of ritual practices, as well as for the mutual influence of ancient Greek and Roman religions.

This paper presents results of an in-depth interdisciplinary analysis of the transformation of the most important Attic rituals dedicated to Cybele during the Roman period. The proposed methodological framework enables the identification of alterations, deviations, and variations within specific rituals by systematically investigating material and written sources through archaeological, art-historical, epigraphic, and textual analyses. Additionally, it enhances the interpretation of findings through the application of sensory archaeology and anthropological approaches. This appropriate case study shows that changes in the sequence, execution, setting, understanding and interpretation of ancient rituals not only occurred, but were obviously one of the prerequisites for their continuity, a means of updating and maintaining them. The concluding discussion will examine whether the evidence points to a Romanised cult of Meter Theon or a Roman cult of Cybele.

From Blood to Bureaucracy: Ritual Adaptation in the Cult of Cybele

Lara Berry

This paper investigates ritual variance in the cult of Cybele (Magna Mater) through the evolving forms of the taurobolium and the roles of the galli and archigalli. Rather than interpreting divergence as ritual decay, I argue that variation was an adaptive mechanism that maintained continuity while negotiating Roman social, political, and sensory realities.

Epigraphic and archaeological evidence shows that in the mid-second century CE, the taurobolium functioned as a civic offering *pro salute imperii*, while by the fourth century it was reframed as an initiatory or purificatory act (*renatus in aeternum*). Sites such as Lyon and Athens illustrate how shifts in audience, setting, and performance reoriented the rite's meaning. The emergence of the criobolium as an alternative sacrifice further demonstrates the cult's ritual flexibility. Christian polemicists like Prudentius exaggerated the "blood baptism" motif, projecting late antique imagery onto earlier practices that were more restrained and civic in nature.

Drawing on sensory archaeology, I consider how the taurobolium's tactile sensations, and visual spectacle shaped embodied religious experience and created memorable affective states. Using cognitive ritual theory, I argue that such "imagistic" high-intensity rituals fostered deep but episodic memory, enabling meaning retention even as ritual form varied. Variations in setting, officiant status, and audience participation thus reactivated memory networks and maintained symbolic coherence. In this framework, the transformation of Cybele's rites was not failure but innovation: a cognitive and sensory recalibration that allowed her cult to remain intelligible and emotionally powerful across Roman contexts.

Shifting Belief / Changing Supply: Variance in the Material Record of the Gallo-Roman Votive Practice

Christiane-Marie Cantwell

This paper, using a case study of Gallo-Roman figurative votives, argues for the application of social economics to the material culture of ritual to identify variance in religious practice. Rituals in the Roman Empire were embodied acts, rarely documented, leaving scarce material traces (Scheid). Figurative votives, statuettes made specifically for ritual dedication, thus stand out as rare sources for reconstructing ritual. As the purpose-made material manifestations of ritual, they were highly meaningful, reflecting socio-cultural norms, with scholars equating variance in these objects to that of the ritual itself (Draycott and Graham). This is the case with Gallo-Roman figurative votives, which appeared in the province following Roman conquest (Cazanove). The variance in material and form of

these votives across time, from wood to terracotta and metal, from pilgrims to deities and body parts, have been read as ritual transitions towards “Roman” practices (Rey-Vodoz, Fauduet).

I propose an alternate reading through social economics. These objects were made and distributed specifically for consumption (i.e. dedication) (Morel). They were economic objects as well as ritual tools. Examining the mechanisms underlying their production and consumption, I identify that the material transition was a by-product of technological development, and did not seem to impact the overall practice, highlighting continuity. Further, I find that specific forms were associated to urban, rural, or natural sanctuary assemblages, suggesting ritual variance based on the context of the practice. The findings of this paper support the application of social economics as a framework to trace variance in ritual through material culture. It can be applied to all manner of material culture, (e.g. faunal remains, pottery), across the Roman Empire, identifying when material change is a factor of ritual or socio-cultural factors. This moves scholarship beyond equalizations of material change with ritual variance, towards more nuanced discussions of the evidence.

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Ritual Transmission and Deviation in Vulcan Worship in the Western Roman Empire

Sisi Xie

The expansion of the Roman Empire witnessed the transmission of deities, cults, and ritual practices across its territories. While the religious landscape of the Empire was enriched by the inclusion and dissemination of so-called oriental deities, such as Mithras or Jupiter Dolichenus, traditional Roman gods were also propagated and transformed as they entered the provinces. Among them, Vulcan, the Roman god of fire and craftsmanship, serves as an ideal case study for tracing the geographical transmission and transformation of ritual practices from Italy to the western provinces. One notable feature of Vulcan’s worship in the western Roman Empire is that he was never equated or paired with a native deity, thus not going through the process of *interpretatio Romana* and retaining a distinctly Italian identity. This paper investigates how the ritual practices associated with Vulcan’s worship were shaped in Italy and re-expressed in provincial contexts, drawing on epigraphic and archaeological evidence to explore patterns of continuity, deviation, and local reinterpretation.

While formal religious *collegia* are attested in Rome and Ostia, their presence appears limited beyond Italy. Dedications in the western provinces suggest that Vulcan was primarily worshipped within smaller communal frameworks, most prominently by the *vici* in Gaul, Germania, and Pannonia Superior, an resonance of practices known at Rome. The use of sacred spaces mirrors this pattern. Apart from a few cities, including Aquileia and Poetovio, no traces of temples dedicated to Vulcan are found. Instead, his worship often centred on individual altars or was incorporated into the sanctuaries of other deities. Despite the adaptation and localisation of Vulcan worship, his identity as the god of destructive fire and craftsmanship remained consistent. Worshipers in the western provinces continued to recognise his dual potency. Details of ritual practices indicate that knowledge of Roman mythologies and festive ceremonies was transferred and re-enacted within diverse local contexts across the western provinces.

Sacred Waters? The Religious Dimensions of Bathing in Roman Britain

Giacomo Savani

This paper explores the potential religious functions of baths in Roman Britain, challenging the conventional view of these structures as purely hygienic or recreational amenities. Drawing on

archaeological and contextual evidence from villa sites and sanctuaries, it argues that baths were often embedded within broader religious landscapes and may have served as focal points for ritual activity. Notably, sacred springs that supplied water to bathhouses at sites such as Great Witcombe (Gloucestershire), Chedworth (Gloucestershire), and Bourne Park (Kent) suggest that bathing in these waters could involve a sensory encounter with the divine. The multisensory nature of Roman baths, encompassing sound, scent, temperature, and visual stimuli, created immersive environments that fostered cultural and religious interaction and exchange.

The paper also considers the role of villa owners in shaping these experiences. By opening their baths to local communities during festivals or religious events, villa owners may have reinforced their social status and leadership roles. In some instances, baths likely functioned as semi-public venues for healing or ritual purposes. The duplication of bathhouses within villa complexes, as well as their proximity to shrines or water features, further supports this interpretation. The use of these buildings may have reflected a hybridization of Roman and local traditions, contributing to the negotiation of identity and power within the province's evolving landscape.

Casting the Divine: Material Traces of Cleromancy and Ritual Variance in Roman Latium

Loredana Lancini

When thinking about divination, one immediately recalls the great oracular sanctuaries of classical Greece. Studies on Roman divination, by contrast, have traditionally focused on the official and state-controlled practices—such as auspices or haruspicy—performed by priests and magistrates. In recent years, however, there has been a growing effort to recover the religious experience of the wider, anonymous community and to explore more personal, material, and sensory dimensions of the sacred. Cleromancy—the act of foreseeing the future through the casting or drawing of lots (*sortes*)—offers a unique angle from which to approach these questions. This form of divination could be performed with a variety of small, portable objects, sometimes within sanctuaries but also, as evidence from Asia Minor suggests, in other public spaces. While literary sources tend to depict these “lot rituals” as marginal or even deviant, the archaeological record tells a more nuanced story: inscribed lots, astragali, and other artifacts associated with sortilege indicate a complex ritual practice that intersected with both official and personal religion.

This paper revisits the dossier of cleromantic practices in ancient Latium by combining archaeological, epigraphic, and literary evidence. Focusing on the materiality of the objects and on their sensory and performative aspects, it aims to reconstruct how such rituals were actually enacted and perceived. Were these practices deviations from the normative ritual order, or rather parallel and complementary forms of communication with the divine? By tracing the *longue durée* of cleromantic rituals, this study seeks to identify patterns of continuity and transformation, contributing to a broader understanding of ritual variance and the multiplicity of sacred experiences that shaped communication with the gods in the Roman world.

Variation in Consistency, Consistency in Variation: Ritual Depositions in the Central Sanctuary of Nida/Frankfurt-Heddernheim (Germany)

Frederic Auth

Since 2016, excavations in the centre of the Civitas capital NIDA/Frankfurt-Heddernheim (Germany) have uncovered a sanctuary dedicated to, among others, Iuppiter Dolichenus. It is the only known ‘large-scale’ sanctuary in the vicus, which, due to its size, must be regarded as a central point of contact for the entire Civitas Taunensium.

With more than 80 earth shafts within the temenos, ritual deposits played an important role in the sanctuary. While the shafts do not differ significantly in shape and morphology, the material contents and their composition are not as uniform. The deposits range from a few burnt animal remains to selected pottery ensembles or *pars pro toto* depositions. Ritual manipulations such as halving, scratching, substitution or graffiti also occur occasionally. In contrast to this variance in content, all shafts are almost identical in size and consist of two layers, with the bottom layer containing all intentionally deposited materials.

The different types of depositions, which took place within a relatively short period of approximately 70 years, raise questions about the characteristics of the ritual (rituals) at the Nida sanctuary and the people involved. Do the differences in the composition of the materials indicate variations in the ritual itself or in the deity addressed? Does the deposited material reflect the willingness or financial capability of the individuals involved? How can the contrasting regularity in the morphology of the shafts be explained in this context?

This paper presents an interim report on an interdisciplinary project that attempts to answer these (and other) questions, involving classical and Roman archaeologists as well as specialists in archaeozoology, palaeobotany and computational archaeology.

Proselytism and the Propagation of Polytheistic Cults

Aaron Irvin

It has been noted that polytheistic cults apparently proselytize and move, but beyond broad and vague generalities little attention has been given towards explaining how or why polytheistic cults spread. Such is the goal of this paper.

In examining the concept of the movement of polytheistic cults and rituals, this chapter will build off of work on a series of interconnected purity cults tied by common rituals involving the sacrifice of young canines, what I have termed the Puppy Purification Cult, or PPC. With the PPC, there exists direct archaeological evidence of this particular cult and ritual's movement across both time and space, but without the inherent aid of imperial conquest, or existing social or economic networks. This paper will explore the movement of cult and ritual largely within the context of the Roman Empire, how and why rituals moved, how rituals were reshaped to fit within new religious landscapes, and the active participation of the proselytized alongside the proselytizer in the spread of cult community and ritual.

Ritual Deviation in Roman Imperial Army: Freak Exceptions in Institutionalised Religion, or Facing the Unknown with no Instructions?

Tomasz Dziurdzik

The study of Roman military religion during the Empire is in a peculiar place: the truth could not be farther from the initial impression people often get that the hundreds of publications must certainly cover all of its aspects. One of its main weaknesses is that it remains undertheorized, even in comparison to the generally negligible role of theory in Roman frontier studies. The other is a fixation on rules and institutionalisation, inherited in a straight line from Alfred von Domaszewski and scholars of the Durham school, with their vision of Roman Imperial army as an organisation with a level of complexity and uniformity matching modern militaries. This resulted in the treatment of anything deviating from (entirely reconstructed) 'universal set of military religious rules' as freak exceptions, episodes of brief lapse in discipline, and as such lacking importance.

This papers applies the 'religion in the making' perspective adopted from the Lived Ancient Religion approach to test a new way of looking at the problem. Case studies combine traces of ritual deviation visible in material record, e.g. the different arrangements of venues of ritual, with epigraphic evidence. Together they point to the prevalence of ritual deviation - and its role in religious innovations, attempts at negotiating the complex realities of cult practices which were subject to superficial control by the military hierarchy. In the context of glocalised religious practices of the army, any 'rules', ill-defined as they were, contended with traditions of a place or a unit. If faced with uncertainty of a new situation demanding ritual action, with no precedent available, the commander used his sanction to resolve the issue in a way that fulfilled his religious obligations, but was also acceptable for the community of the soldiers. Only a rather loose framework of what was deemed appropriate informed his decisions.

TRAC5: Water Cultures Beyond Roman Italy

Session organisers: Henry Clarke & Giacomo Savani

Water was a powerful resource in the Roman world, with a complex set of symbolic and ritual associations perhaps even more important than its many practical purposes. It played a pervasive role in religions and rituals, particularly given the sensory implications of water and water infrastructures. Different types of water, from springs to fountains to rivers, could be imbued with different cosmological roles and importance. Water also had a unique influence on people, bringing them together in distinctive ways and facilitating interactions in diverse settings, from urban areas to the countryside.

Water sites and infrastructures provide a unique opportunity to explore how various individuals and social groups in the Roman world interpreted, used, and interacted with water in complex and sometimes conflicting ways. In this session, we aim to examine different theoretical and interdisciplinary approaches to water and water cultures across the Roman world, from the Near East to Britain. We are interested in methods that include phenomenological and sensory perspectives, as well as studies informed by post-humanism and new materialism.

We are particularly eager to de-centre the narrative of the Roman Empire, focusing instead on the human-water interactions and lived experiences of diverse social and cultural groups outside of Rome and Roman Italy. We seek to understand the comparative experiences of

different social groups, both elite and subaltern, and whether certain groups were excluded from specific interactions with water due to their status, power, and resources. For example, the privileged access of the elite to water suggests that they engaged with it differently than other groups, potentially missing the social interactions that water afforded to subaltern communities. Ultimately, our goal is to achieve a deeper understanding of the central role that water played in local societies and cultures throughout the Roman Empire.

Old Men and the Sea: Boat Owners in Ancient Rome, Their Vessels, & Their Relationship to the Water *AJ Korzeniewski*

The ancient Roman landscape was dominated by the Mediterranean, and working with - and having dominion over - that Sea was paramount to her success, both on the state-level, but also for scores of private Romans, both those who controlled access to the sea vis-à-vis boat ownership, and those who relied on said boat owners for maritime access.

Just how close were boat owners - whether or not they relied on their vessels for their livelihood - to their vessels? How connected were they to the water, which their status as boat owners granted them access to? Boats, while serving a functional need in the livelihoods of maritime communities, were viewed rather impersonally by their owners and they themselves generally engaged with water lackadaisically and transactionally. Their experience with - and connection to - water was a vastly different one from the crew - or, commercially, passengers - who actually sailed the seas and interacted with the water.

And speaking of those people, just how close were sailors - whether we are talking about those on large galleys or more modest crafts; whether we are talking about coastal community residents who must rely on the water for their daily bread (or should I say daily fish?), or those who take to the sea for adventure or necessity - to their vessels and the water itself? My talk will look at episodes of boat ownership and those actually employing them from different pockets of the Roman world, from the high seas to minor streams and ponds, to foster a deeper understanding of the central role that water played to those who could access it, and those who actually did. Thank you.

Gold and Water: Hydraulic Systems and Mining Technology in North-Western Hispania

Damián Romero Perona, Almudena Orejas Saco del Valle, Brais Currás Refojo, Inés Sastre Prats & F. Javier Sánchez-Palencia

In the 1st and 2nd centuries AD, hundreds of gold deposits were mined under the control of the imperial fiscus. After the conquest was completed (under Augustus), Rome deployed all its means of control over the population (thus guaranteeing labour for the mines) and territories (with all their resources). Ancient mining works have left permanent traces on the landscape, sometimes truly impressive, but no less impressive are the systems of canals and water reservoirs that made mining possible.

Their implementation is the result of the adaptation to each terrain of technical solutions already tested in the Hellenistic world (Greece, Aegean, Egypt) and the Roman republican period (La Bessa, Italy) and of an accurate knowledge of the territories of northern Hispania.

The recent systematic study of the hydraulic network of Las Médulas (World Heritage Site since 1997) is an outstanding example (2021-2024). This research has contributed to a better understanding of mining technologies applied in the different sectors of the mine and its absolute and relative chronology. The methods used to collect, channel and regulate the flow of water have been documented, as well as its role in different phases of exploitation, until the final washing of gold-bearing material to separate the gold, and the removal of wastes. Las Médulas hydraulic system covers an area of almost 50,000 hectares and includes 39 reservoirs and 32 preserved channels, totalling some 800 km in length.

Less extensive hydraulic networks have been studied in many other mining areas in the Hispanic northwest, and in all cases, it has been confirmed that their archaeological and geoarchaeological analysis also provides relevant data on palaeoenvironmental issues and on integral resource management strategies. Furthermore, they have contributed to shaping landscapes, their topography, connectivity and vegetation, and today they constitute an amazing heritage that is little known and underappreciated.

The Significance of Urban and Rural Cuniculi at Veii

Christina Monroe

As part of my PhD project, for which I am creating a comprehensive study and mapping of cuniculi (subterranean water systems consisting of shafts and tunnels) in Italy during the first millennium BCE, I have found that the cuniculi of Veii (north of Rome) offer evidence to foster a better understanding of the major Etruscan city, which continued during the Roman period. The cuniculi of Veii have been

discussed by archaeologists more frequently than cuniculi elsewhere. This is partially due to the occurrence of cuniculi in the urban and extra-urban landscape and the potential to offer a general date (prior to the end of the fifth century BCE) for some of the urban cuniculi. Nevertheless, cuniculi are still defined in broad terms and the urban cuniculi are rarely studied in tandem with the rural cuniculi.

This paper aims to review scholarship on cuniculi of Veii to provide a more valuable definition of a cuniculus and to form an understanding of all the cuniculi within the urban area and the territory of the city. A comparison between the urban and rural cuniculi shows that they probably were created with the same shaft-and-gallery tunnelling technology. The urban cuniculi were used to direct water to the edges of the city's plateau, such as to the Portonaccio Sanctuary, and they were created to keep the land free of excess water by avoiding unnecessary surface systems. Similarly, the rural cuniculi drained and reclaimed land to keep it dry. Thus, I have used QGIS to find an estimated amount of land that the cuniculi would have reclaimed. I then assess the potential agricultural and/or pastoral use on the reclaimed land to offer a hypothetical economic value for the cuniculi. The findings demonstrate that cuniculi were politically, culturally, agriculturally, and economically important to Etruscan and Roman Veii.

(Hard) Water Determinism in the Chalklands of Roman Kent

Jay Ingate

In the 21st century, water has receded into the background of our lives: it is always there, but our daily routines are planned around seemingly more important concerns. When we move into a new house, we do not worry about the availability of water; we worry about how fast our broadband connection will be! Water is so ubiquitous that it has become an impressionable substance upon which we impose meaning: hard water is bad because it leaves marks on glassware; tap water is dirty because it travels through pipes; bottled water is better because a company tells us it is 'pure'.

As archaeologists, we inevitably follow a similar pattern when interpreting the past, elevating or diminishing the meaning of water based on subjective attitudes towards human interventions: the waters of a well are significant only if we find a votive deposit, while the waters of an aqueduct are mundane because the intervention is too great.

This paper proposes that we attempt to invert this logic, looking to the diverse nature of water itself to provide a greater understanding of why certain sites or structures became important in the Roman period. The mineral-rich waters derived from the chalk downlands of Kent will be used as a case study to demonstrate how sensorial and biological attributes could combine to create perceptions of uniquely productive places in the past. In doing so, we can better acknowledge how different our relationship with water has become in the 21st century, and consider how evidence from the Roman period might play a meaningful role in shaping future reforms.

Between Utility and Worship: The Meaning of Nymphaea in Roman Arabia

Kaja Bator

This paper examines the architecture and significance of monumental fountains (nymphaea) in the cities of the Roman province of Arabia, with particular focus on examples from modern Jordan, Israel, and southern Syria. Introduced to the region in the second century CE as a characteristic Roman architectural form, nymphaea soon became a permanent element of the urban landscape, adapting to local climatic conditions, building materials, and urban layouts.

Fountains in the southern Levant display a high degree of uniformity, both in their placement within the urban fabric and in their architectural plans. A nymphaeum served not only a practical function within the city's water distribution system, but also a representational one – manifesting the wealth, prestige, and identity of the civic community. This was expressed not only through rich architectural decoration, but also through the visible and controlled "expenditure" of water, a resource of exceptional value in this arid environment.

The study situates nymphaea within the broader context of provincial urban planning, considering their practical and aesthetic roles, as well as the possible symbolic meanings associated with water in public and sacred spaces. Through comparative analysis of examples from Amman, Gadara, Gerasa, Petra, Kanawat, As-Suwayda, Bosra, and Scythopolis, the paper demonstrates that nymphaea functioned simultaneously as elements of hydraulic infrastructure and as markers of controlled abundance and prosperity.

In the dry landscapes of Roman Arabia, monumental fountains may therefore have taken on meanings extending beyond their utilitarian roles. In addition to their practical and decorative functions, they could serve as symbolic or ritual spaces in which water mediated between the everyday and the spiritual spheres. The nymphaea of Roman Arabia thus reveal the complex nature of water architecture, uniting technical, aesthetic, and conceptual dimensions within the urban space of the province.

The Ways of Water: Transitions and Transformations of The Syrian Goddess Atargatis

Agne Pilvisto

Atargatis, commonly known as Dea Syria or the Syrian Goddess, served as a matron deity to the “homeless” Syrian slaves and sea-merchants, eventually gaining popularity throughout the Roman Empire. The Syrian Goddess is most familiar to us through the eponymous treatise by Lucian (2nd cent. AD), which, though unique in its detailed description of her cult within the otherwise elusive context of Roman Syrian religion, still leaves us wondering about the actual character of the goddess herself. A somewhat more coherent picture of her divine nature can be pieced together from the wider literary tradition, compiled by P. L. van Berg in the *Corpus Cultus Deae Syriae* (1972).

The vast majority of the passages as presented by van Berg, along with the prevailing mythological motifs they contain, revolve in one way or another around water. Water carries both transformative and cathartic properties in these stories, reflected in motifs such as her birth from the river, drowning or plunging into water, and post-marital bathing. Another recurring peculiarity in these accounts is the idolization or even deification of fish, while several myths are presented as an aition to their cultic worship by the Syrian people. Incidentally, the son of the Syrian goddess is also called Ichthys [i.e. ‘Fish’ in Greek].

As we will see, water motifs permeate the cult of Atargatis on multiple levels. Not only is water the key element among her many attributes as a fertility goddess - evident both in iconography and cult practices -, but most of her cult sites are also located near natural water sources or bodies of water. These cultic aspects, along with mythological examples, will be explored to offer a deeper understanding of Atargatis as a water goddess and the conditions that facilitated the expansion of her cult across the Roman Empire and beyond.

TRAC6: FRAGILE IMAGES: The Fragility, Instability, Ambiguity, and Self-Reflexivity of Images in Roman Art

Session organisers: Annette Haug & Marlis Arnholt

The session introduces the project FRAGILE IMAGES (ERC Grant No. 101141247) based at Kiel University, Germany, and invites to challenge the dominant notion of images as powerful actors. Moving away from the prevalent focus on the affective, persuasive, and immersive image the contributions focus on the temporal instability, semantic ambiguity, and/or ontological self-reflexivity of images. Starting from the gaze as a mediator between image and viewer, between activity and passivity, between power and weakness, we propose to intertwine a praxeology of showing with a praxeology of viewing. This radically new approach brings together a Visual Studies perspective and a cultural-historical approach and applies them to Roman imagery from the 2nd century BC to the 4th century AD. Based on archaeological and written evidence of this period, the contributions of this session explore the potential of ‘fragility’ as a pictorial quality. For this the one or other aspect may be emphasized:

- Temporal instability alludes to any processes of image creation and transformation, but also encompasses their biographies, translocation and the changes of both their spatial, functional and social contexts. This likewise includes ephemeral images such as reflections and shadows.
- Semantic ambiguity tackles the role of polyvalence, openness, and indeterminacy in images. Thus, we acknowledge that images may stimulate more than one meaning, offer contradictory meanings and even perform without communicating anything at all.
- Ontological fragility addresses the self-reflexivity of images, i.e. on meta-images. These are images that address, reflect upon, or question their ontological status (pictoriality). They do not communicate in a propagandistic, catchy, or one-dimensional way but in a subtle and complex one; they require an intensive process of reflection. We claim that this is not (only) a (post-)modern phenomenon, but also was an ancient strategy.

Ambiguities and Ambivalences in Images of Nature in Public Contexts in Roman Art (1st c. BC - 1st c. AD)

Lidia Chiné Zapater

The status of nature between the 1st century BC and the 1st century AD reveals a strong relationship between humans and the natural world, a relationship that became codified through a complex set of ideas and traditions.

The encoding of meaning in images of nature inevitably leads to an exploration of the openness of meaning inherent to such representations—that is, their ambiguities. In particular, it involves the openness of meaning that arises in the process of image reception, as images always offer multiple interpretations to a viewer. Ambiguities, however, can emerge at different stages of the processes of perception and interpretation. Therefore, they are not static but dynamic, and they depend on a number of factors. These include whether the image itself offers a possible interpretation and action (agency), the context in which it is received, and the meanings attributed to it by the viewer.

Moreover, images are not only materially manifested; their meaning goes beyond the factual. That is, the efficacy, power, and agency of images vary depending on their form, materials, media, and contexts. This opens the possibility of analysing different categories of representation of nature and vegetal imagery in public contexts, not only through the openness of a motif to interpretation or the combination of diverse elements in an image (its syntax), but also by considering its material and reception contexts. This paper, therefore, seeks to define a theoretical framework—drawing on “affordances” and frame theory—with which to analyse which meanings and interpretations may have gained greater relevance depending on the changing context of an image. By considering how different contexts can lead to different interpretations, the aim is to offer a new perspective from which to study the ambiguities in images of nature within the public contexts in the 1st century BC and 1st century AD.

A Fragile Rock: Aeneas' Altar on the Ara Pacis

Ann Kuttner

Central to discourses on ideologically active Roman monuments, with actors/authors aiming to propagandize dutifully swayed viewers, the Ara Pacis Augustae (13-9 BCE) is a purported prime instantiation of a ‘Power of Images’ enforcing the Principate and endorsing its princeps for careful spectators. I contend the monument also rewarded, by intention or accident, fast looking, idle looking. And viewers could depart dogma's path, any time. They could take ancient story as common property, ignore most content.

I inspect the west facade's salvific sacrifice by Trojan refugee Aeneas, arrived at Latium, of a god-sent white sow in the wilderness at a handy natural rock used as altar, beside a wild oak. It sparks debate now, as likely in 9 BCE. Are the little Penates watching from opened box on rocky spur the statuettes Aeneas carried from Troy? Is this their eventual temple in a city still unbuilt? Who could/did construe ‘official’ plot? People could cursorily grasp iconic basics - ritual, ‘nature’. All recognized wild stone: momentarily powerful, nameless. All knew sacrificial rituals. Altar at altar ... it tropes, people say, the altar within the shell-wall from whose ground the pictured rock emerges. Let's say more: we /they can see its fragility as tempory object/ subject, in worlds of accident, emergency. Ephemeral garland on it, as those inside the shell-wall, works to that effect, too.) The skilled stone-carver will have felt in his very hands that he made boulder from stone. Upon well-quarried, richly carved Italian marble surface, its blank roughness challenges cura, intimates arbitrariness of its monument's meanings. Even quick human eyes saw not-here, not-now, not city, and might grasp the Urb's once and future wilderness, feel marble paving underfoot shaken by ancient tree-roots: that well-known willed Roman vision of their Urbs' past, and perhaps its future, made it, too, fragile

Playing with Plurality through Half-Fabricated Sarcophagi in Roman Phoenicia

Nicholas Aherne

From the 2nd-3rd century AD the sarcophagus habit took hold across the Roman Empire. Amongst the decorative types is the so-called half-fabricated garland, resembling the vague outline of a garland. Initially conceived as an intermediary product in an early stage of the carving process, in of itself it found great demand. Thus far, the type has been studied primarily from an economic perspective. Some scholars have shared theoretical interpretations, that it reflects a new-found desire for the aesthetics of abstraction or a need to represent the collective dead. This paper contributes novel perspectives from my PhD thesis on the ritual function of sarcophagi of Roman Phoenicia and situates the half-fabricated imagery within their material, epigraphic, archaeological, and spatial contexts. The results unravel the polysemy, ambiguity, and fragility of the motif and demand us to rethink the efficacy and experiences of Roman imagery. Furthermore, amongst imported and local types, those shipped from Assos in particular offer semantic complexities. Their overall composition, iconographic components, and material properties all present fragility, ambiguity, or self-reflectivity of either the sarcophagus or

funerary customs more broadly. One component of the composition was the *tabula ansata*. It highlights empire-wide and localised transformative processes that took place during the *longue durée* or more recent standardisations which witness the *tabula* develop from an inscription panel to ornamentation, and in the case of the Assian sarcophagi, a novel motif that alludes to localised funerary customs. I argue that the fragility of the imagery was responsible for its popularity across diverse clientele. Distinct local customs meant that the design could have intentionally and unintentionally catered to a variety of options which transformed its ultimate appearance and functionality. To optimally understand the motif, this paper encompasses comparanda from sites beyond Phoenicia that further elucidate the productive mechanisms, self-reflective designs, and localisations.

Ontological Instability in Roman Pictures: Evidence, Method, Questions

Giulia Bertoni

The paper presents the research project on a third way in which Roman images show signs of fragility, their ontological instability, and a preliminary case-study. In Petronius's *Satyricon*, Encolpius almost falls on his back at the sight of the picture of huge dog at the entrance of Trimalchio's house (Sat. 29.1) in a parodic demonstration of the "power" of images. The project addresses the simultaneous tendency to deflate their power, for instance by utilizing visual strategies that point at the image's own illusion, deceptiveness and flatness. The interplay between immersion and detachment, persuasion and distrust, results in a sense of instability - one that generates ontological questions: what is real and what is fake? What is the difference between picture and reality, if any? *Lusus* on this unstable distinction are especially frequent in the corpus of Roman wall-painting and mosaics. They are evident in both thematic choices (e.g. the myth of Narcissus who mistakes a flat representation for reality) and ornamental ones. I focus on the latter ones, often neglected since at the periphery of pictures and spaces. Framing elements are commonly used to demarcate the different ontology of a representation (e.g. picture frames and movie curtains in modern conventions). By studying the choice and manipulation of particularly unstable, and potentially transgressive, decorative elements such as curtains and birds (ones that Kant and Derrida would label as *parerga*), I investigate varying levels and degrees of ontological instability on these painted spaces. The study is historical, tracking qualitative and quantitative changes in plays with the unstable ontology of images through framing devices from First to Fourth Style. As my first case-study, I demonstrate the destabilizing effect of the painted curtains which flow along the baseboard of the walls of a room in the late-Republican sanctuary of Brescia, and the questions curtains raise.

TRAC7: Beyond Names and Numbers: Quantitative Epigraphy and the Discovery of Historical Patterns

Session organisers: Petra Heřmánková, Tomáš Glomb & Vojtěch Kaše

Roman epigraphy has traditionally focused on qualitative analysis of individual inscriptions, with scholars engaging in restoration, translation, and contextual interpretation. While this approach has yielded invaluable insights, it often overlooks the potential of these inscriptions as a collective dataset capable of revealing broader historical patterns and social dynamics. This session explores how quantitative approaches to epigraphic evidence can transform our understanding of Roman society and culture. By applying computational methods, statistical analysis, and data visualisation techniques to large epigraphic corpora, we can address inherent biases in the surviving record, quantify uncertainty in our interpretations, and restore missing contextual information. These distant reading approaches enable us to uncover patterns undetectable by traditional methods, revealing demographic shifts, tracing cultural diffusion, and identifying evolving linguistic conventions across time and space that would remain hidden through close reading of individual inscriptions alone.

Papers address:

- Natural Language Processing (NLP) techniques for reconstructing and extracting semantic meaning from fragmentary texts.
- Distant reading methods for identifying previously undetected linguistic or thematic patterns.
- Statistical methods for mitigating selection biases in the epigraphic record.

- Computer-assisted restoration of damaged inscriptions and prediction of missing content.
- Digital methodologies for integrating epigraphic data with spatial and archaeological longitudinal data to uncover cultural and societal patterns in geographical space.

Contributions in this session explore theoretical frameworks for interpreting quantitative epigraphic data, methodological innovations in digital epigraphy, and offer case studies demonstrating how computational approaches have yielded new historical insights. The session aims to demonstrate how quantitative methods can complement, rather than replace, traditional epigraphic scholarship, providing new avenues for interrogating these crucial primary sources.

The Religious Epigraphic Habits of Enslaved Persons in Roman Samnium, Picenum, Umbria, and Etruria (Regiones IV, V, VI, and VII): Quantitative Trends

EB Rummel & Nicholas Rummel

Recent developments in the field of Roman slave studies have given rise to a renewed interest in the topic of Roman slave religion. Part of this has been studies of the religious inscriptions (dedications, votives, tituli sacri, etc.) produced by and in association with enslaved and formerly enslaved persons. It is the intention of this paper to contribute to this area of inquiry through a quantitative analysis of large datasets of epigraphic evidence. In affiliation with the ERC funded SLaVEgents project, a thorough survey of the epigraphic material from Roman Samnium, Picenum, Umbria, and Etruria (Regiones IV, V, VI, and VII) dating the last two centuries BCE and first three centuries CE has been conducted. A Monte Carlo simulation approach has been adopted in order to account for the temporal uncertainty of epigraphic evidence. Through this, chronological trends of the inscribed objects are established. Further statistical analysis of inscription attributes is performed. These include the deity to which the object was dedicated, its geographic origin, the taxonomical shape of the object, the material of which it is made, its dimensions, and the formulae employed in its text. Finally, the body of inscriptions created by or in affiliation with enslaved persons can be compared to those created by freeborn or freedpersons using a two-sample Kolmogorov-Smirnov test in order to ascertain if there is a meaningful difference in the religious epigraphic habits of populations on the basis of legal status. This work reveals more of the place that religion occupied in the lives of enslaved persons and the impact that it would have had on their lived experiences.

Investigating Human Agency and Agency of the Place: A Quantitative Approach to Epigraphic Evidence of Religion in Roman Apulia

Francesca Mazzilli, Giuliano Volpe & Roberto Goffredo

On the one hand, the temple's benefactors and worshippers constituted and commissioned sanctuaries through their dedications and participation in ritual practices. On the other hand, the location where the temple was erected, along with its natural characteristics and/or human infrastructure, also played a role in shaping the nature and development of a sacred place.

Can a quantitative approach to inscriptions dedicated to gods help us to move beyond the identification of names of temples' patrons and dedicators to evaluate the significance of the place for a cult centre versus the impact of individuals, communities and identities in ancient religion? The paper will investigate this through a computational and spatial approach, using an excellent case study: Roman Apulia. It is a region with diverse terrain, delimited by the sea for over 800 km, which has impacted the region's cults. Its economy was based on cereal agriculture and transhumance, which determined routes for seasonal movements and religious traditions. It presented a complex cultural heritage rooted in a variety of local pre-Roman groups (the Messapians, the Peucetians and the Daunians) and in constant flux due to the influence of Greek colonies and Roman occupation.

The data collection of a wide range of inscriptions –from those in Roman cities to those recovered in caves –along with their use in formal applications of network analysis and their spatial distribution, will enable us to identify patterns among gods, people, and lived spaces with their own physical features. These data patterns can be interpreted as evidence of cultural connectivity, clusters, and isolation. They can offer fresh insights into the historical narrative of Roman Apulia, triggered not only by individuals and communities but also by the places where religious life took place, while providing systematic data collection that follows FAIR principles.

Quantitative Approach to the Epigraphic Cultures. Case Study of Palmyra

Aleksandra Kubiak-Schneider

The Epigraphic Cultures of the Ancient Eastern Mediterranean project led by professor Krzysztof Nawotka at the University of Wrocław pays attention on the development, particularities and history of the epigraphic cultures in different corners of the ancient world, taking into account alphabetic inscriptions. It permits to see patterns within the cities and regions, political constitutions and habits of people of displaying the written information in public. It finds on the quantitative and qualitative approach. This paper brings a case study of Palmyra to discuss the epigraphic culture in the most remarkable cities of the Roman Near East. It will present through the quantitative approach the significance of religion in the city as well as the particularity of the epigraphy of Palmyra, displaying the inscriptions often in 2 languages: Greek and Aramaic with a prevalence of the West-Semitic texts. I will present also the methods which are applied within the project in question and the perspectives of their reuse in the research in the domain of epigraphy.

Uncovering the Bona Dea Theonym - A Spatial Study of Bona Dea among the Great Mother Goddesses

Luna Carina Liv Christiansen

This presentation is based on my MA thesis about uncovering the theonym of Bona Dea, using inscriptions in the reconstruction of the name and identity of Bona Dea within the Roman religious system. The reason for focusing on Bona Dea in this thesis, rather than on iconographically assimilated divinities such as Fortuna or Hygiea, is that although numerous Great Mother goddesses share themes such as fertility, health, abundance, agriculture, female virtues, and oracular qualities, these deities, while similar, remain onomastically distinct from one another. Unlike the other divinities in the category of Great Mother goddesses, the name Bona Dea is nothing but a theonym. This means that Bona Dea does not seem to be a divine entity in herself and does not exist as an independent divinity. Instead, Bona Dea and her cult are best understood as a complex concept rooted in a network of mythologies. To acquire a more comprehensive understanding of Bona Dea, the breadth of this study extrapolates the scope from Bona Dea inscriptions to a selection of associated female deities. This is accomplished by collecting extensive epigraphical data and visualizing them on distribution maps with temporal context classification. The output explores the geographic spread and development of the cult temporarily, regarding religious centres and their evolution. Therefore, the theonym Bona Dea is positioned within the framework of Great Mother goddesses rather than explicitly as the Bona Dea goddess. This premise decontextualizes the divinity from the name to associate it with the spatial context of analogous deities, emphasizing the cult and the conceptual networks independently. The hypothesis for the analysis is that the distribution of material evidence will demonstrate patterns of religious dynamics, including continuity or diffusion of religious focalization, or suggestions that sanctuaries for Great Mother goddesses facilitated co-worship with similar goddesses, such as Bona Dea.

Mining and Medical Infrastructure as Potential Predictors for the Spatial Distribution of the Cult of Asclepius in Dacia

Sebastian Kheml

The Danubian provinces of the Roman Empire have proven to be a fertile ground for current research employing spatial modeling approaches, owing to the abundance of epigraphic and archaeological evidence for different aspects of Roman society. An example of this trend is a recent study, *The Spread of the Cult of Asclepius in the Context of the Roman Army: A Spatial Proximity Analysis* (Glomb 2021), which demonstrated that epigraphic evidence mentioning Roman physicians spatially positively correlates with material evidence for the healing cult of Asclepius in the Danubian region. However, the province of Dacia stood out as an outlier in this analysis, showing a high number of Latin inscriptions mentioning Asclepius but very little epigraphic evidence for the presence of physicians. Therefore, in this paper, we revisit the “Dacia” research problem, testing whether the spatial distribution of Latin inscriptions dedicated to Asclepius was potentially impacted by factors such as attested mining and medical infrastructure. The rationale behind the selection of these factors is that 1) mining posed significant health risks for miners, which could have led to increased worship of healing deities, and 2) medical infrastructure was directly associated with healing, potentially inviting the worship of Asclepius. With regard to data, mining activity in the region is digitally documented in the OXREP database, while proxies for medical activity in Dacia include attested epigraphic evidence of specialists (e.g., eye doctors), archaeological finds of medical tools, and geocoded spa facilities. The epigraphic data are drawn from the Latin Inscriptions in Space and Time (LIST) dataset, which has a detailed set of attributes that allow for conducting a spatial proximity analysis in a Geographic Information System (GIS).

Salt Mines and Sacred Rites: Tracing Connections between Roman Salt Trade and Mithraic Worship in the Roman Dacia

Aleš Chalupa

Salt was a vital commodity in the economy of the Roman Dacia. The substance under consideration was utilized not only for the preservation of food, but also constituted a critical element in metallurgical technologies, particularly in the process of smelting gold and silver. The province of Dacia was known by the presence of numerous substantial salt mines, which constituted a pivotal element within the economic infrastructure of the Danubian provinces. Recent epigraphical evidence from the mithraeum III, unearthed in 2008 in Alba Iulia (ancient Apulum), reveals the involvement of slaves serving under the supervisor (conductor) of salt trade, P. Aelius Marius, in the Roman cult of Mithras. The present study explores the potential correlations between individuals engaged in salt mining and trade and their involvement in the Roman cult of Mithras. The employment of spatial proximity analysis facilitates the correlation of the locations of Mithraic inscriptions and iconographic monuments with recognized sites of salt extraction, precious metal mining, and the transport networks that interconnected these economic and religious spaces. The objective of this study is to illuminate the possible interplay between material economy and religious worship in a frontier province of the Roman Empire.

Roman Marriage Ages: No Longer Graveyards for Historians, but Still Treacherous Terrain

Adela Sobotkova

Population studies using Latin inscriptions remain methodologically challenging despite valiant efforts to rehabilitate this rich corpus of evidence. Nearly 40 years ago, Keith Hopkins declared age formulations on Roman tombstones intractable, relegating even the most tenacious attempts—like Bruce Frier's—to the 'graveyards for historians' (Hopkins 1987; Frier 1982). Richard Saller and Brent Shaw (Saller and Shaw 1984; Saller 1987; Shaw 1987; Shaw 2002) subsequently developed an ingenious approach that exploited rather than avoided the biases in funerary commemoration, gauging marriage ages by tracking the shift in commemorations from parents to spouses. This focus on commemorative practice rather than face-value ages effectively silenced debate for nearly two decades.

In 2003, Lelis, Percy, and Verstraete raised new concerns: they identified confounding factors including the commemorative obligations of surviving *patres familias* and missing inscriptions for young, childless wives. Walter Scheidel (2007) mediated this debate, acknowledging that while Lelis et al.'s objections could theoretically produce the observed epigraphic patterns, Occam's razor and long-term demographic modeling consistently support Saller and Shaw's methodology. Surprisingly few publications have addressed this topic since *Debating Demography* (2017) appeared, despite Scheidel's call for testing new evidence and despite the progress in the digitisation of epigraphic data spanning the western Roman Empire, which enable unprecedented reproducibility and detailed spatio-temporal analysis (e.g., EDCS, EDH, LIST).

To test the power of these new datasets, I applied Shaw and Saller's methodology for assessing women's age at marriage to the EDH people and LIST datasets, while exploring one dimension scholars have only puzzled over: temporal change. Of ~90,000 inscriptions with identifiable persons, only ~6,000 contained persons whose gender, role, age at death, and family relationship was defined enough for analysis. Despite the data being roughly a half of Shaw and Saller's (1984) size, the results were consistent in the aggregate: dedications to wives overtake dedications to daughters around age 19-20. The marriage age shifts down in larger urban contexts and up in rural regions. When plotted over centuries, the crossover point declines, though the modal marriage age remains persistently in the 20-25 year bracket, surprisingly high for Mediterranean model and likely a result of problematic age parsing and a 5-year moving average rather than reality.

One additional puzzling phenomenon emerged: conjugal dedications to girls aged 5-15 especially in the latter centuries. A quick look at the text reveals problematic data encoding is the culprit—for example, "vixit cum viro novem continuis annis" is miscoded as age 5 at death. Clearly, detailed age review and curation will be necessary before arriving at any firm conclusions. Yet the promise of a revised (and gradually growing) dataset is that we gain enough regional and temporal resolution to finally start addressing Scheidel's question: whether "the mean age of marriage could change considerably over time, from one century to the next, in response to the disease environment and economic opportunities" (2007, 401).

Poetry for a Few, Poetry for All: A Quantitative Approach to the Social Impact of Epigraphic Poetry through the MAPPOLA Database

Chiara Cenati

The democratisation of epigraphic poetry in the Roman Imperial period is well attested, yet its broader social implications remain less clearly understood. A quantitative analysis of epigraphic material can help clarify the extent to which epigraphic poetry functioned as a popular form of art and how this

reflected social patterns. The MAPPOLA database (<https://db.mappola.eu/>), with its strong socio-historical orientation, provides a framework that enables such quantitative investigation into the role and meaning of epigraphic production across the Roman Empire.

This presentation outlines the steps toward a quantitative and thus more systematic assessment of the social impact, accessibility, and re-elaboration of epigraphic poetry across different social strata and cultural contexts. These steps include: (i) defining relevant social statuses and milieus within Roman society; (ii) developing new tags and research filters within the database; (iii) conducting combined searches that compare prosopographical descriptors with textual and metrical features; and (iv) presenting preliminary results from this analysis.

Contextualising Roman Inscriptions with Aeneas

Thea Sommerschild

Recent advances in quantitative epigraphy have shown how large-scale analyses of inscriptions can complement traditional scholarship, opening new ways to study social and cultural patterns in the Roman world. As datasets expand and computational tools mature, the challenge now lies in integrating these quantitative approaches with interpretive methods capable of addressing fragmentary and context-dependent evidence (tasks that remain difficult to scale beyond close reading).

To meet this challenge, this paper introduces Aeneas, a generative neural network designed to extend quantitative epigraphic methods by contextualising Latin inscriptions through large-scale computational comparison.

Unlike existing or traditional methods that rely on literal string matching or narrow corpora, Aeneas uses deep learning to identify textual and contextual parallels across thousands of inscriptions, incorporates visual inputs, and generates restorations of arbitrarily fragmented texts. It thus enables distant reading techniques that highlight recurrent phrasing, functions, and cultural settings across extensive datasets. In addition, Aeneas integrates statistical methods to mitigate fragmentary bias by proposing probabilistic restorations and ranked parallels, providing a reproducible framework for computer-assisted interpretation. To assess its value for historical research, we conducted a user study with historians, who evaluated the system's outputs as starting points for their own analyses. In 90% of cases, the retrieved parallels were judged useful, while collaborative workflows pairing historians with Aeneas improved confidence in restoration and attribution tasks.

Finally, a case study of the *Res Gestae Divi Augusti* demonstrates how generative methods can be combined with spatial and historical contextualisation to refine readings of a canonical text. By embedding machine-learning modelling for distant reading into epigraphic practice, this paper shows how quantitative methods can move beyond counting toward the discovery of new historical patterns in the Roman epigraphic record.

Dates-as-Data for Inscriptions: Using Summed Probability Analysis with Latin Epigraphic Databases to Investigate Changing Complexity in the Western Roman Empire

Shawn Ross

Since the 1980s, archaeologists have used radiocarbon dates as data points to reconstruct demographic trends. This 'dates as data' approach rests on the theory that researchers acquire radiocarbon dates because they relate to occupation events, and that large datasets of such dates 'constitute a representative sample of occupation events' (Williams 2012). Summed Probability Analysis (SPA) is the technique used to translate the number of dates from a site or region into a population proxy. This method recognises the uncertainty of the dates, calculates the likelihood that a date falls in a particular year (e.g., a date with a 100-year uncertainty has a 1/100 chance of falling in any year given a uniform distribution), combines probabilities from many dates (100s to 1000s), and sums the probability for each year. Inscriptions also provide a source of dates situated in space - this time undoubtedly the product of human activity. Large, machine-readable epigraphic datasets are now available, providing date ranges and find spots for each inscription. Only one paper, however, appears to have considered using SPA on inscriptions (Hanson 2021). This paper presents an application of SPA using the LIRE epigraphic dataset, which contains over 180,000 Roman-era inscriptions. As a demonstration of the approach, I perform SPAs on subsets of the data from the western empire, including at the level of province and municipality. Results are not read not simply as a reflection of population, but as a proxy for complexity (the sum of various components, including population, wealth, social stratification, and other factors). To begin disentangling these factors, I then compare my results with independent estimates of population using other proxies (proposed by Hanson and Ortman) to isolate the population component and begin to understand the information conveyed by this composite measure.

Miles and Inscriptions by the Thousands: Quantitative Approaches to Latin Milestone Inscriptions, and What they Reveal about Roman Road Maintenance

Mathias Holland Johansen

The Roman road network remains to this day one of the most impressive construction projects of the ancient world. Yet, despite a huge network of roads, spanning 250,000 miles, which was key to Roman military success, and ease of trade and travel, we are left with precious little information regarding the scale, or the frequency, of maintenance. When was the disparate parts of the roads built, and just as important, yet rarely talked about, when was it rebuilt, reconstructed, or maintained?

One of the largest corpus of inscriptions from the Roman world, may help us to quantify, and date, the maintenance efforts. The more than 8,000 milestones with Latin inscriptions provide us with an excellent firsthand account of when, where, and why, road construction and maintenance was undertaken, or at least commemorated. This will allow us to understand, at least to some degree, the work necessary to maintain this sophisticated logistical network, which has implications for the cost, and burden that it placed on local councils, and the authorities in Rome.

This is a quantitative analysis of the milestone inscriptions in Latin, which seek to use the data contained within to uncover patterns in road construction and maintenance. This is done by analyzing the inscriptions and collating the data into categories, the main being: Dating, Emperor named, agent named, action taken on road, reinscribed date, location, and type of maintenance conducted. This is done to visualize patterns, allowing us to follow changes over time.

In total, the dataset contains 8,389 milestones, written in Latin, which have been analyzed for this study.

Global Patterns of Commemoration in Roman Epitaphs: A Quantitative Spatial Analysis

Lynne Bennett

In his seminal work on the epigraphic habit, published in 1982, Ramsey MacMullen stated, 'other than the entire epigraphic habit itself,' the recording of age was the only aspect of an inscription that could be described statistically. This assumption was a product of the limited computing resources available at the time and a lack of imagination in the potential provided by epigraphic data. Based on an analysis of epitaphic formulae use in over a thousand inscriptions, this paper will demonstrate the transformative effect a quantitative spatial analysis can have on epigraphic studies.

Epitaphic formulae have never been subjected to a large-scale analysis such as this. Their mass appeal and repeated use have often been seen as an indication that they have little value in epigraphic research. However, their use across the Roman world and their repetition in thousands of epitaphs make them an ideal subject for the quantitative analysis presented in this paper. By analysing epigraphic signatures for regions and cities, and the prevalence of an expression as a percentage of the total number of epitaphs, this paper will demonstrate how significant an expression was in the epitaphic record and enable the identification of differences and similarities between and within different regions of the Roman world.

The results underline the need for a thorough appreciation of the geographic distribution of these expressions and show that most expressions in the study, despite their frequency in the epitaphic record, display substantial regional variation. They indicate that certain regions had a tradition of using particular expressions and demonstrate that some of those patterns previously thought to be significant are simply reflections of a local epigraphic habit when viewed in a broader context.

TRAC8: Graphs have Feelings Too: Empirical Approaches to Theoretical Problems in Roman Archaeology (and Vice Versa)

Session organisers: Owen Humphreys & Peter Bray

In this session, papers explore the complex intersection between theory and data. We are all familiar with the tropes of quantitative and theoretical archaeologies; that one generates data with no meaning, and the other generates ideas with no proof. If this was ever true, it is increasingly less so. The embedding of theory into archaeological training and practice has led to explicitly pragmatic approaches emerging. Many are increasingly appreciating how advances in theory, methodology and data have emerged and operated in tandem, opening up new opportunities for diverse and meaningful explorations of social questions.

As the diversity of experiences examined by theoretical movements has expanded, so too has the volume of data available to Roman archaeologists; from almost anecdotal factoids about

key discoveries, to vast datasets created by synthetic research projects, commercial excavations, the PAS, and new scientific techniques. Computer databases, GIS, and digital dissemination have been powerful forces shaping the discipline. This data brings with it new opportunities for exploring the complexity and scope of the Roman period, but also poses new challenges for research design, data organisation and storage, data analysis and interpretation.

We see empirical data not as an unbiased arbiter of truth, but as a complex resource, shaped by practice, through which we can explore the variability of experience and agency in the past. At the same time, we believe that empirical data requires integration with theoretical frameworks, new and old, that explicitly engage with the complexities and opportunities afforded by this data. Papers in this session draw on quantitative, typological, metric, statistical, and landscape studies, and incorporate scientific analysis techniques.

Drawing on Theory

Elizabeth Shaw

Using the example of my research into the social significance of Roman representations of feet and footwear this paper explores how my theoretical and methodological approaches influenced my project design and enabled me to produce visual records of data in the form of maps, charts and graphs.

I opted for theoretical 'bricolage' rather than purism, which enables a better understanding of things that are too complex for any single theory. My research was based mainly on object biography, and contextual archaeology but also included agency and post-colonial theory. This pragmatic stance led me to a mixed research methodology, where quantitative and qualitative research techniques are combined, answering a broader and more complete range of research questions, and adding insights that using a single method might miss. The contextual nature of pragmatism is particularly useful for my research.

As a result of my mixed theoretical and methodological stand-points I designed a project that involves collecting and storing data about foot-shaped artefacts in Microsoft Access. This database application allows the data to be sorted according to a variety of criteria, or fields, such as findspot, context, map coordinates, material, size, date, and type, which are crucial for object biography and contextual archaeology, and permits the inclusion of illustrations. The greatest benefit of this method is that it facilitates the observation of chronological, spatial, depositional, and typological distribution patterns. It also produces quantitative data, which I entered into Microsoft Excel spreadsheets, in order to produce graphs, charts and maps to facilitate my data analysis. Such visual depictions help to identify patterns of data which would not be as easily apparent from a purely qualitative approach.

Thus the complex relationship of carefully chosen methodological and theoretical approaches should influence project design and help to ensure that a study is as reliable as possible.

Are we Obscuring Archaeology with Bad Data Science? Breaking Open the Statistical Black Box

Kathryn Murphy & the REMADE team

Archaeology has always included some level of quantitative analysis, and also has a habit of adopting methods from other fields. This is most notable in archaeological science and related areas of study. Since the push of processual archaeology, this quantitative approach has included the use of more complex statistical analyses. The use of statistics has continued to increase as we move further into the era of archaeological Big Data. Statistics are seen as a way to analyse and break down the complexity of these large data sets, allowing researchers to arrive at some underlying truth hidden within the numbers. Are all of these methods fit for purpose, or are we using them simply because we are expected to do so? How far do the methods themselves create structure in our results, or lead us to certain conclusions?

This paper examines the principles and applications of several major statistical data analysis techniques (Principal Component Analysis, hierarchical clustering, and Kernel Density Estimation) using archaeo-chemical data generated by the REMADE (Roman & Early Medieval Alloys Defined) project. Through this, I will show how the choice and application of statistics, and the selection and shaping of input data, impact the outcomes of analysis. We will see how the use of different statistical packages can be misaligned with the expectations of the archaeological user, flattening datasets rather than drawing out nuance in the data. Finally, this paper will demonstrate how simpler approaches to data analysis and visualisation can produce results that are more nuanced and robust than those created through the blanket feeding of data into a statistical black box.

Patterns in Metal: Materiality of the Roman-Germanic Interactions through the Compositional Analysis of Roman Period Brooches from the Middle Danube Marcomannic Settlement Zone

Matěj Kmošek, Marek Vlach & Balázs Komoróczy

Brooches are one of the most visible and abundant artefact categories of the Roman Period, widely produced in both Roman and Germanic contexts and central to debates about cross-cultural interaction. Their frequency is especially clear in the recently compiled MARCOMANNIA dataset, which integrates published evidence with regulated metal-detecting finds and now records around 4,000 brooches, representing over 20% of all movable finds from the Middle Danube Marcomannic settlement zone. Because these objects are predominantly made of copper alloys, they are particularly suited to chemical characterisation. More than 1,250 portable X-ray fluorescence (pXRF) measurements, supplemented by control analyses of core drillings, provide one of the largest archaeometric datasets of Roman-Period copper alloys in the region. This scale of evidence allows us not only to trace alloying practices and recycling behaviours but also to interrogate broader interpretative frameworks.

Our approach combines multidimensional statistics and probabilistic simulation modelling to identify compositional patterns across typological, chronological, and cultural dimensions. By embedding archaeometric results within theoretical debates about identity, technological choice, and material life cycles, the paper demonstrates how large-scale empirical data can both inform and be shaped by conceptual models. This paper argues that compositional analysis is not merely an empirical exercise but a theoretical intervention: it challenges assumptions about Germanic metalworking traditions, reframes the role of recycling in frontier economies, and highlights the active role of materials in structuring cross-cultural relations. In doing so, it exemplifies how scientific datasets can be mobilised to address wider questions about variability, agency, and interaction in the Roman world.

The Economics of Perishability: Olive Oil Production and Producer Choice in Roman Baetica

Andrew Welser

This paper demonstrates an agronomically-informed approach to estimating Roman olive oil production. By explicitly modelling variables like planting density, harvest timing, and quality trade-offs, I show that responsible quantification requires acknowledging wide ranges of possible outcomes and the economic choices embedded in production. This approach reveals the possibilities and limits of quantitative analysis of Roman agriculture.

Estimating land requirements for oil production is complicated by material constraints. Press capacity can be calculated theoretically, but Roman producers were incentivised to maintain excess capacity: processing olives quickly after harvest yielded higher-quality, more shelf-stable oil. Presses in large operations likely never operated at maximum capacity, meaning that archaeological remains of pressing facilities provide only upper-bound estimates of production.

More fundamentally, the quantity and quality of oil produced from any orchard depended entirely on harvest strategy. Green olives required hand-picking, produced less oil per volume, but yielded superior, shelf-stable product. Waiting for full ripeness increased yield but reduced quality and stability. These were economic choices shaped by market positioning, labour availability, and risk management—not fixed biological outputs.

Nevertheless, it is possible to establish production bounds at some sites. Press capacity establishes a production maximum. Cato the Elder's advice to plant olives about eight meters apart aligns with the upper reaches of orchard density in traditional Mediterranean orchards, suggesting a maximum density of c.156 trees per hectare. In Hispania Baetica, stamps and tituli picti on Dressel 20 amphorae can link oil quality to specific sites. Taking these factors into account, I calculate how much land would be required to produce oil under different production regimes at sites in Baetica. This approach produces ranges rather than false precision, demonstrating how Roman producers' decisions about quality—shaped by biological constraints of perishability and ripeness—structured labour mobilisation, capital investment, and agrarian organisation.

Using the Digitised Dataset of Roman Roads to Explore the Effectiveness of the Roman Terrestrial Transport Network and its Relation to Trade in Africa Proconsularis

Louise Matilde Harreby Møller

The vast Roman road network, particularly in modern-day Tunisia, has long fascinated scholars due to its preservation and historical significance. In Africa Proconsularis, Roman roads remain highly visible in both the landscape and epigraphic evidence, drawing academic attention since the early 20th century. Recent research has highlighted their political and economic importance, supported by regional surveys, studies of African ceramics, and investigations into the province's agricultural economy. These suggest a prosperous, trade-driven society. However, the direct relationship between Roman roads and trade facilitation has not been thoroughly examined - until now.

This study utilises digitised data from the MINERVA Project to analyse the Roman terrestrial transport network in Africa Proconsularis and examines whether it facilitated trade. Using GIS and Least Cost Path (LCP) analysis, the research models optimal travel routes based on slope-dependent cost functions for ox carts, pedestrians, and pack animals. This approach assesses the road network's efficiency based on travel time, distance, and cost.

The results indicate that Roman roads connected key production and trade centres via optimal routes and supported various transport modes, including walking, pack animals, camels, caravans, and ox carts. Their planning and construction promoted both small- and large-scale trade.

To support the quantitative analysis, qualitative data from regional surveys and ceramic and epigraphic studies are examined. These reveal a correlation between increased agricultural activity, settlement patterns, widespread ceramic distribution, and heightened road maintenance- all pointing to a flourishing trade economy.

Ultimately, this research deepens our understanding of the Roman road network's crucial role in Africa Proconsularis and the broader Roman economy. It introduces a new methodology for exploring ancient transport systems and emphasises the strategic planning behind Roman infrastructure that enabled economic success.

Quantifying Urban Experience: Statistical Modeling of Spatial Use at Roman Street Intersections

Matthew D. Selheimer

This paper examines the interplay between archaeological inquiry, theories of urban development and morphology, and statistical modeling, using spatial use data from street intersections in Pompeii and Ostia. Recognizing intersections as experience-rich loci of decision-making, movement, visibility, and social interaction, the study analyzes 87 intersections in Pompeii and 47 in Ostia, applying descriptive statistics and multivariate regression (both linear and logistic) to assess eight categories of spatial use—including commercial, domestic, religious, and recreational functions. The paper argues that variable selection and model design are not neutral acts, but reflect the researcher's assumptions about spatial logic, urban agency, and the interpretation of built environments. The careful treatment of categorical, continuous, and ordered data, the role of outliers, and consideration of nodal versus metric distance are examined. Regression outputs are reviewed for the selected case studies, not only for their predictive power but also for what they reveal about the challenges of analyzing the multivariate complexity of human experience and spatial decision-making. Divergent patterns of use between the two cities—Ostia's commercial dominance at intersections versus Pompeii's more varied allocations—serve to illuminate the contrast between urban environments shaped by distinct locations, temporal horizons, and development trajectories. Ultimately, this paper contends that the construction of archaeological datasets, the application of theoretical frameworks, and the use of statistical modeling are best pursued in tandem. It demonstrates that statistical analysis is not merely a tool for quantification but offers a valuable method for evaluating and refining archaeological theory regarding the lived experience of the Roman urban landscape.

TRAC10: General Session

'Classless Public Ground?' Hostile Design in Ancient Rome

Penelope Davies

The terms hostile or unpleasant design, or disciplinary or defensive architecture, describe objects of public and semi-public spaces that combine social control with interaction design to discourage or prohibit usages typical to targeted populations, usually the marginalized, a minority, or the powerless. A growing concern of contemporary architectural criticism, hostile design is rarely explored in pre-modern architectural history. Scholars acknowledge that typically Roman forms, even construction itself, helped establish and maintain control in conquered territories; but assessments of their experiential qualities rest on seminal work by MacDonald, who characterized essentials of Roman urbanism as 'sophisticated responses to the universal urban need for an architecture of connection and passage - for unimpeded movement and casual assembly', concluding that 'much of a city or town was given over to nearly classless public ground'. Such overly optimistic notions continue to underpin much of our writing on the subject.

Starting from the premise that in one way or another every design process is ideological, and that imposing spaces and monuments are simultaneously enticing to some and hostile to others, this paper deploys recent research in contemporary architectural criticism to suggest degrees and types of less perceptible hostilities embodied in Roman state architecture, to expose power structures beyond pure surveillance. It focuses on the late second century BCE, when consensus deteriorated and violence

brewed, to the onset of authoritarianism under Augustus, and into the early second century CE. Regulatory tactics to protect against insurrection included laws against arson and sedition, and, with Augustus, a (para-) military presence that outsized the most policed cities in the US; but architecture played a special role, which can be explored using Rosenberger's taxonomy of hostile design mechanisms, particularly processes he terms physical imposition, concealment, self-coercion and absence.

Beyond Deception: Revisiting Authenticity and Forgery in the Roman World

Elisa Bernard

This paper challenges the anachronistic application of modern concepts of authenticity and forgery—typically defined as the deliberate deception of a viewer or buyer—to the classical world, where such notions likely held different meanings and functions. Literary sources from both Greek and Roman contexts document acts of replication, often tied to religious or civic purposes—for example, Dionysius of Halicarnassus' account of the replication of Troy's Palladion, or Ovid and Plutarch's descriptions of King Numa replicating the divine ancilia tied to Rome's safety. However, these cases do not align with modern definitions of forgery rooted in the pursuit of financial or social gain.

In the context of Roman collecting practices, neither literary nor archaeological evidence supports the idea that artisans or collectors intentionally exploited the names or reputations of famous individuals through false attributions to Greek masters—as is only seemingly suggested in the works of Phaedrus and Martial, or in retrospective attributions added to Roman statues like the Quirinal Dioscuri—or through implausible provenances involving historical figures, such as Novius Vindex's Seated Herakles, which Martial and Statius report was claimed to have belonged to Alexander, Hannibal, and Sulla. Rather, the evidence points to a genuine effort to associate artworks with esteemed cultural traditions, particularly that of classical Greece.

This paper proposes a distinct framework for understanding authenticity in the Roman world—what may be termed culturalist authenticity. This concept emphasizes value not in the identity or prestige of an individual creator, but in the broader cultural lineage to which an object could be linked. Such a reframing allows for a more nuanced understanding of Roman attitudes toward artistic value, originality, and tradition.

Re-evaluation and Restitution Proposal of the Antioch Hippodrome by New Results

Hatice Pamir, Büşra Kocaman Sakin & Sila Öykü Akça

Although the Antioch hippodrome was excavated in the 1930s, a complete evaluation had yet to be conducted. New discoveries at the excavation site since 2013, along with subsequent analysis, have led to a re-evaluation of the hippodrome and the proposal of a reconstruction plan. Dating back to Hellenistic times, the structure was reconstructed and restored several times after sustaining earthquake damage and continued to exist until the second half of the sixth century. The earthquakes of 526 and 528 AD, which destroyed the entire city, also caused significant damage to the structure.

According to the excavation results, the structure measures 513-113 metres and features two-storey seating rows/cavea, a 283-metre-long and 8.3-metre-wide euripus/spina and carceres with thirteen-doors. This structure, one of the largest of its time, is to have been inspired by the Circus Maximus.

The Velabrum: A Locus of Abandonment

Mark McCaffery

Cicero seizes my interest when he states: "in considering the place where the act was performed, account is taken of what opportunity the place seems to have afforded for its performance" (de. Inv. I.38). This concept of being able to read and interpret Rome's cityscape was heavily utilised by Vasaly (1993) in her analysis of imagery in the oratory of Cicero, and it has served to inspire my current undertaking of a PhD thesis entitled "How Geographical Topography Combined with Cultural Heritage in the Formation of Rome's Narrative Cityscape". The chapter of this work which I intend to focus my paper upon examines how the locus of the Velabrum adopts the role of a lieu de memoire, perpetuated through its association with the foundation legend of Romulus and Remus. On the one level the origin legend of Romulus and Remus preserves a cultural memory of the inundations which brought the Tiber right up to the boundary of the Forum Romanum, recognising the Velabrum in the process as a vital entry point into Rome's early urban development. Yet, closer consideration of the legend leads us to question why the act of the legendary twins' abandonment was specifically associated with the locus of the Velabrum. To answer this question recourse needs to be taken to the plotlines of the comic playwright Plautus, in which the act of infant abandonment (patienta expositio) is placed in the context of the urban landscape of Rome. Thus, the premise of the chapter contends that this cultural habitus, represented within the literature and persisting within the urban landscape, would serve to articulate a

sense of urban identity for an urban dweller of late-Republican Rome stimulated by the inherent narrative within the physical locus of the Velabrum.

Affective Scripts and Practices After the 62-63 CE Earthquake in Pompeii

Leonardo Massantini

Some aspects of affectivity (i.e., emotions, moods, etc.), such as how people felt emotions in their bodies, escape archaeological reconstruction. However, archaeologists can investigate the relations between material culture and affectivity. Bridging philosophy and archaeology, this paper advocates for the notion of “scripts”, which are context-sensitive structures that describe an affective behavior in terms of events and social roles. Essentially, scripts describe how emotions unfold through time in a specific social context. The paper analyzes the affective responses to the 62-63 CE earthquake in Pompeii. In Seneca’s *Naturales Quaestiones* (VI 1,1-8), we see that people not only feared death, but also that in the aftermath of the earthquake they felt considerable distress from losing the sense of security once provided by public and private buildings (Nat. Quaest. VI 1,5-6). In terms of social cognition, Seneca describes a script: the fear during the earthquake and the subsequent distress. However, his script is incomplete. He merely proposes philosophy as comfort to this distress, but the archaeological record goes further and testifies to the actual practices that the inhabitants of Pompeii performed after the earthquake for coping with distress. Not only did they reconstruct buildings (often reusing materials), but they also memorialized the event (as in the marble reliefs of Casa di Cecilio Giocondo, which represent the earthquake), and installed apotropaic phalluses in some of the reconstructed walls. The challenge is determining which practices held affective significance and identifying their affective meaning. I argue that we can attribute affective value to a practice (e.g., reconstructions and restorations) only if it can be identified as a constitutive part of a broader script (e.g., beginning with fear during the earthquake, followed by distress in its aftermath, and culminating in the private and social need to materially restore the sense of security).

Modular Proportions of Early Christian Churches in Transjordan

Ewelina Kosztka

Early Christian architecture of the Roman provinces in the Near East provides a plethora of information about the Christian community at the time and the cultural influences that impacted it. Early Christianity is something of a cultural transition, which highlights the inspiration drawn from the “pagan” antiquity being adapted into Christian culture, art, and architecture. This includes Nabatean, Greek, and Roman traditions which are clearly visible in these structures.

The churches exhibit a simple basilical form, although they deviate from the typically Byzantine archetype due to the absence of a cruciform plan, domes, or ornaments. On the other hand, the presence of other elements common in this period - such as arcades, double-pitched roofs, and clerestories - suggests, that the overall trend of Byzantine architecture in Transjordan was shaped by the architects’ deliberate choice to adapt certain details while rejecting others, rather than their lack of knowledge of said archetypes.

Their skill and expertise are reflected in the characteristics which can only be appreciated upon closer inspection - namely, the geometry of their floor plan. Seemingly dictated by simple proportions, it hides much more complex ideas based on Pythagorean theorem and modularity of these deceptively simple shapes. They allowed the architects to design a space that was both harmonious and structurally sound while multiplying the modules to easily adjust the scale of these buildings to their geographic context and environment.

This research covers all viable Byzantine basilical churches in modern Jordan. The overarching goal is to establish general tendencies in the architectural design of these churches, identify possible regional variations, and recognize common building guidelines. This allows for deeper insights into the choices made by the architects within their cultural context and establishes a reliable method for analyzing the ecclesiastical architecture of this region.

Stone Cold Murders: Interpreting the Medea Sarcophagi of the Second Century CE

Sarah Anne Cox

Attempts to understand the depiction of the myth of Medea in Corinth, found on second century CE sarcophagi, have focused on Medea and Jason’s relationship and narratives about the destruction of a marriage. The murders of a king, a bride, young children, and the psychic destruction of Jason feature as central points in this story of justice and revenge; like violence at a funeral, most people find it impossible to understand how this marriage narrative would be appropriate for funerary art. Why the Medea in Corinth story? How could it function as commemoration, consolation or memorial? I argue that in the sarcophagi, this mythic cycle is not about the marriage of Jason and Medea, but rather the scenes tap into the visceral anxiety surrounding infant and maternal mortality exemplified by the deaths

of one young woman and two babies. I show how Medea functions as a birth deity whose presence attempts to explain the inconceivable. I briefly catalogue Medea as she appears in various media: sarcophagi, wall paintings, sculpture, and literature. Next, I discuss the interpretations of the sarcophagi by Buchanan, Zanker and Ewald, Gessert, and Koortbojian, including their methodologies premises and my arguments for why none of them is comprehensive enough. My goal is to add to the scholarship and further explore the prevalence of maternal and infant mortality in the Roman material world. I show how Medea, in Roman funerary art, possesses qualities comparable to Mediterranean birth deities like Lamashtu, Bes, Tawaret, and the Roman strix. I demonstrate that through correlation of Medea to a birth deity, Romans expressed the deep loss of mothers and babies in childbirth.

A God on the Move: Tracking the Iconographic Journey of Jupiter Dolichenus

Maciej Marciniak

The cult of Jupiter Dolichenus, whose center was located in Doliche in northern Syria, spread rapidly across the Roman Empire from the early 1st century CE to the mid-3rd century CE. The concentration of finds related to this cult—primarily in military contexts and along the Roman limes—has led scholars to emphasize its strong association with the army. The remarkable speed with which the cult expanded remains a matter of debate, as does the exact route by which it reached the Danubian provinces from northern Syria. This rapid dissemination also hinders precise dating of the material evidence, resulting in the recurrent attribution of a general timeframe between the 1st and mid-3rd centuries CE.

This paper presents a preliminary attempt to analyze the iconography associated with Jupiter Dolichenus in order to establish its relative chronology. By examining the imagery of the god from Doliche in both pre-Roman and Roman contexts, and by comparing it with motifs found at Roman sites across Europe, it becomes possible to identify elements that deviate from the original iconographic tradition. The first category of objects selected for study—due to their rich and varied iconography—are the so-called standards. A comparative analysis of known examples reveals what appears to be a visual progression: from early forms still reflecting Bronze Age symbolism to later ones incorporating a dense array of Roman motifs. This observation raises a fundamental question: are we truly witnessing an evolution?

Introducing and Keeping Roman Imperial Imagery in Macedonia and Thrace: On the Sulcus Primigenius and Other Subjects in Coin Finds and Local Mints (the case studies of Heraclea Sintica and Deultum)

Hristina Ivanova-Anaplioti & Lily Grozdanova

This paper explores the transmission and persistence of Roman imperial imagery in the coinages of Macedonia and Thrace, with a focus on both colonial and non-colonial contexts. Using Deultum and Heraclea Sintica as case studies, it examines how Roman motifs were introduced, adapted, and reintroduced to shape regional identities. In Heraclea Sintica, although not a Roman colony, coin finds bearing the sulcus primigenius from Philippi suggest a deliberate framing of Roman presence from the Republican period onward. Roman influence in Macedonia predates this, as Amphipolis had already issued Roman-denominated coinage. Heraclea's coinage reflects a unique blend of Macedonian and Roman identity, resisting later Thracian cultural dominance. Special Roman coin types were not only permitted but locally imitated, raising questions about selection criteria and ideological intent.

In contrast, Deultum in Thrace, a closed colonial community, reflects Roman imagery which with the time seems to be increasingly affected by local Thracian and Black Sea Greek concepts. Thus, it indicates specific aspects of the local dynamics of the process of Romanisation.

The comparative analysis highlights how coinage served as a medium for asserting Roman character in diverse provincial settings, with Heraclea and Deultum representing two poles of cultural negotiation between imperial imagery and local identity.

The Confluence of the Thames, the Nile and the Euphrates: Objects of Ancient Near Eastern Mediterranean Origin Reported through the Portable Antiquities Scheme

Jason Ludock

Prior to the Modern Period, the Roman period provided the time within which Britain was most directly connected, both economically and culturally, with many regions far beyond her shores. This paper shall contribute to the understanding of this connectivity by examining objects of eastern Mediterranean association reported through the Portable Antiquities Scheme to examine how this global connectivity may have affected rural culture and material experience. While the Roman period is the most likely period of deposition for the majority of these objects, comment shall be offered on other possible processes of deposition and how this may also inform our understanding of cultural practice in rural Britain. Comment will then be offered on how such objects of material culture can serve as a window into our understanding of the connection and assimilation/adaptation of ideas into the identity and the lived experience of the inhabitants of the British countryside.

Multispecies and More-Than-Human Communities? The Evidence from Cavalry Tombstones in Roman Dalmatia

Ewan S. Coopey

This paper addresses what may, at the outset, seem to be a relatively simple question: What do cavalry tombstones reveal about the social dynamics of Roman military communal life? However, in line with the growing scholarly interest in the multispecies and more-than-human (or non-human) nature of life in the Roman world, this paper seeks to go beyond anthropocentric reconstructions of community and unpack how animals, humans, and objects were all caught up in the throes of social life. Combining relational understandings of community with Haraway's concept of 'becoming-with,' this paper presents a more-than-human model of community, centred around social relations and associated life. Then, using a case study of 1st-2nd century CE inscribed funerary stelae depicting cavalrymen and horses ('Reitergrabsteinen'), this paper argues that military communal life in Dalmatia emerged out of a distinct social arrangement of cavalrymen, their dependents, their horses, their funerary monuments, and their necropoleis. From the 'becoming-with' of human and horse, to the capacity for funerary reliefs to reach across military life and be implicated in the assembly of socially significant signs, this paper stresses that community is always more-than-human, without losing sight of the fact that it is also always human.

Roman Fishing: An Ethnoichthyological Approach to Lagoon Environments

Lee Graña

Within the Mediterranean region alone, there are an estimated 400 coastal lagoons varying in size, shape, and freshwater/marine connectivity. With an average lifespan ranging between 1000 and 6500 years, many of the ancient lagoons would have been morphologically inconsistent with current environments or would not have existed. Equally, much of the now reclaimed Mediterranean coastline would have contained diverse wetlands, since drained. These ephemeral ecosystems were nonetheless key fishery sites, as they continue to be today. Archaeologists are faced with an arduous task when attempting to decipher the fisheries that would have existed in ancient lagoon environments. Not only are the artefact remains poorly researched, but traditional lagoon fisheries are quickly disappearing, removing a crucial ethnographic resource as well.

This paper follows the completion of a two-year fellowship researching the northern Venetian lagoon. What started as an archaeological assessment of the fishing gear alone, extended to an ethnographic assessment of traditional fisheries and interviews with some of the few remaining artisanal fishermen of the area. This study was informed by ethnoichthyological approaches and positive feedback has promoted further research into additional lagoon environments in Spain and Portugal.

A better understanding of the traditional fisheries demonstrate that lagoons were not merely transitional zones between fresh and marine water, but highly complex and composite ecosystems, favouring particular species and fishing practices. The interdisciplinary study includes an environmental and biological assessment of these ecosystems leading to the current proposal of discernible ancient fisheries in lagoon environments. Further archaeological investigation is required, but the main proposal is the crucial retrieval of ethnographic data via interviews, before this resource vanishes.

The paper will outline the theoretical framework of this two-year investigation, highlight the current results and seek to gain support and feedback for continued research.

Triple Bronze and Oak: Emotion in Ancient Seafaring

Madison Scrobeck

It is difficult to imagine a world where emotion does not exist, yet archaeological narratives are often devoid of any attempt to discuss emotion. When research has undertaken the difficult task of examining emotion, it has primarily stayed within the domain of death due to its status as an "emotionally heightened space" (Fleisher & Norman 2016: 8); however, humans experience heightened emotions during different events in different spaces throughout their lives, particularly concerning events like giving birth, coming of age, travel and movement between places, and enduring natural disasters. This study centers the discussion of emotions within ancient seafaring, as the act of seafaring is positioned to answer questions about emotion as well as travel and movement itself in connection to identity, perception, and 'being' in the world.

The research is concerned primarily with the creation of a fit-for-purpose theoretical framework to examine the relationship between the process of seafaring and the practice of emotion, utilizing case studies throughout the Mediterranean region during the Roman period (509 BC - 476 AD). This framework models the communicative and cognitive relationship between humans at sea, supra-human agents, sailing stimuli, and the temporo-spatial aspects of sailing; building on concepts established within the disciplines of anthropology, sociology, and psychology.

Case studies have been selected to stress-test the performance of the theoretical framework in its efficacy to create a more nuanced understanding of emotionally heightened spaces. The case studies fall

into three methodological categories: 1) cross-examination of archaeological media within shipwreck contexts and harbor contexts, 2) examination of historiographical accounts of sailing and shipwrecking, and 3) engagement with data generated by experimental archaeology and phenomenological approaches.

Archaeology of Everyday Life: How Can the Ordinary Become Systemic?

William Van Andringa

“What happens when nothing happens” (G. Perec).

In the vein of the history and sociology of everyday life, I aim to show how archaeology—by revealing the concrete dimensions of human experience—can help restore the agency of daily practices over individuals and social groups. In this perspective, Roman communities, before becoming civic institutions normalized by the imperial order, were groups of people structured by family time and neighborhood solidarities. These networks produced a daily life far less homogeneous and far more inventive than the one portrayed in conventional “histories of everyday life.”

Archaeology reveals that the ancient societies we study are strange, complex, and extraordinarily diverse—a finding that runs counter to our globalizing categories (Romanization, Gallo-Roman, etc.) and to the tendency to underestimate the exceptional complexity of the social systems under analysis. No urban or rural society of the Roman period is ever quite the same as another, even a few kilometres apart.

Following Foucault’s view of the everyday as a strategic arena where power and meaning take form (Discipline and Punish, 1975), I propose an *archéologie du geste* (Van Andringa 2021), centred on the field and on human experience, to trace sequences of human action and show how small-scale practices gave tangible shape to broader social systems.

To explore this theoretical and methodological proposition, I will draw on case studies and excavations carried out in Pompeii and Saint-Bertrand-de-Comminges.

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New Evidence for Roman Rural Settlement in the Safita Region, Syria from the 2024-2025 Field Survey

Hadi Ibrahim & Hadi Alrasses

This paper presents new evidence for Roman-period settlement in the coastal hinterland of Syria, based on original data from field surveys conducted in 2024-2025. Although the Şāfītā region has long been recognized for its historical importance, previous archaeological work has been limited to two international surveys focused on medieval remains and a few small-scale rescue excavations carried out by local teams. Consequently, the region’s Classical-period landscape has remained largely unexplored.

The 2024-2025 surveys documented a variety of features that illuminate rural life and infrastructure during the Roman era. Among the most significant discoveries are sections of a Roman road that appear to have formed part of a wider settlement network, despite their absence from known itineraries such as the Tabula Peutingeriana and the Antonini Itinerary. Funerary remains include hypogea, rock-cut tombs, and a pit grave, while components of agricultural production—such as oil and wine presses—reflect the economic foundations of local communities. The pottery assemblage, mainly utilitarian and related to cooking and storage, underscores the domestic character of these settlements. Evidence of monumental architecture was also identified, with structural features suggesting the presence of a Roman temple rather than later reuse as a rural church.

In addition, oral history collected from local villagers provided unique information about sites now obliterated or endangered, offering critical insights that complement the material record. By introducing this new dataset, the paper contributes to the broader debate on rural settlement dynamics, mobility, and cultural interaction in Roman Syria. It also highlights the potential of micro-regional surveys to refine our understanding of provincial life in the eastern Mediterranean and the urgent need for systematic documentation in threatened archaeological landscapes.

The 2023-2024 Archaeological Survey in the Massyaf Area (Hama Governorate, Syria): New Evidence of Hellenistic and Roman Rural Settlement

Hadi Alrasses & Hadi Ibrahim

Archaeological research on the Roman and Hellenistic periods in the vast area of Massyaf (western countryside of Hama governorate of Syria) has been limited, with only three national and two international studies conducted. Most of these studies only briefly mentioned these periods without

providing a detailed analysis. Furthermore, the general trend in Syrian classical archaeology has traditionally focused on major urban centers, leaving rural hinterlands such as Massyaf largely overlooked. It is this significant research gap that prompted the present study, which aims to shed light on the rural settlement system in the Massyaf area.

Through the analysis of existing data on Hellenistic and Roman-era Masyaf, combined with an archaeological survey conducted in 2023, this study—initiated as part of a master's thesis—has established a preliminary framework for the area. The research facilitated the creation of a specialized database, led to the identification of a previously unknown archaeological site, two new cemeteries, a tomb, and provided a new interpretation of a recently discovered Latin inscription. Furthermore, it offers a critical reassessment of previously recorded archaeological features and proposes evidence for a dense Hellenistic settlement in a specific part of the region.

Analysis of key site elements—including tombs, architectural remains, water management systems, transportation networks, and material culture—this study has successfully delineated some forms and characteristics of Hellenistic and Roman rural settlements. Furthermore, it has systematically documented the oral history of the local community, integrating it with the archaeological data.

Poster Session

The Impact of Construction Activity on Public Events in the Forum Romanum during the Late Republic and Early Empire

Amelia Betscher

This poster presents research based on a completed BA dissertation examining the impact of construction activity on access to public assemblies in the Forum Romanum between 54 BC and AD 14. Using 3D modelling and GIS analysis, the project evaluated whether theoretical models of construction obstruction previously proposed by other scholars accurately reflect historical realities. The findings suggest limitations in applying such models to political accessibility. The poster also outlines planned MA thesis, which will expand this study by reassessing the impact of construction on movement and public events in the Forum Romanum as ongoing research.

Cutting in Roman Times. Morphological Analysis of Scissors in Hispania

Macarena Bustamante-Álvarez

We present a study on a set of scissors from Roman times. This analysis is based on a research project on textile craftsmanship -the TEXLUS project- in Roman times in one of the provinces of Hispania, Lusitania. In addition to a morphological study, we conducted a contextual and functional analysis of these tools. We also considered their production mechanisms. We hope that this pioneering study will allow progress on this subject and encourage the publication of other works.

Roman Water Culture in Castillejo De Belda Archaeological Site. A Multidisciplinary Approach from the Hydroremote Project

María del Mar Castro García, Antonio J. Ortiz Villarejo, Alejandro Fornell Muñoz & Antonio Luis Bonilla Martos

This poster presents the preliminary results of an ongoing large-scale I+D+i research project (Hydroremote), focused on the Iberian-Roman archaeological site of Castillejos de Belda (Martos, Jaén, Spain). The study combines archaeological field survey with historical sources, aerial photogrammetry, and multispectral drone imagery (NDVI) integrated within a GIS environment. Initial findings reveal technological advances in water management and the introduction of integrated water-supply systems from the late Turdetanian to Roman periods, as well as cultural changes in the use of water resources within the settlement and its surrounding territory.

Displaying the Pompeii Body Casts: Reflecting 19th Century Literature or 21st Century Archaeological Analysis? To What Extent Are the Current Displays of Pompeii's Plaster Casts Reflective of Recent Shifts in Scholarship from a Focus on Storytelling to Prioritising Scientific Analysis and Preservation?

Anna Colman

This research asks how scientific reappraisal of the plaster casts in Pompeii from the last decade has impacted the manner in which these casts are currently displayed to the public. It compares choices of display in the 19th century to 2024, questioning if the changes are reflective of recent shifts in scholarship from a focus on storytelling to prioritising analysis and preservation. The analysis considers how: grouping of casts, changes to location, signage and 'set dressing' impact public impression. It began as research for an undergraduate dissertation, with the view to further exploration under a project allowing for broader scope.

Dressing the Votives: A Ritual Use of Actual Adornments at Carsoli and Oricola?

Corradi Federico

This poster presents a work in progress within an ongoing PhD project on the votive assemblage of the Aequan-Roman sanctuaries of Carsoli and Oricola, where 20,000 votives are currently under study and largely unpublished. Focusing on votive heads, the contribution explores evidence suggesting that some of these were dressed or adorned, as indicated by clearly readable traces. Concentrating on this case study, the poster reflects on the ritual and decorative role of actual garments, headdresses, veils, jewelry, and perishable materials such as flowers or leaves in both the production and offering of terracotta votives in central Italy between pre-Roman and Roman periods.

Dwelling Amidst the Frontier: The Case of Castlehill, East Dunbartonshire

Alexander Crest

Castlehill is the former site of a Roman fort on the Antonine Wall. It is a place where community and place relationships are defined by distances, as much as closeness. These distances are mediated across contemporary space and into deep time, where different belonging and place relationships play out in constant flow. This poster introduces the findings from a mixed-methods case study of heritage

values developing amidst the Antonine Wall world heritage property in suburban Bearsden, East Dunbartonshire, Scotland as part of a wider PhD project into heritage values of the Antonine Wall.

Following Paving Stones in Ancient Roman Roads. A Pilot Study

Phaedra Criaco, Tymon de Haas, Ray Laurence & Peter Attema

The volcanic paving stones of roads like the Via Appia, Flaminia and Latina constitute a significant material feature, yet the provenance of this stone and the supply organisation within the Roman Hinterland are understudied. This cotutelle PhD-project (Macquarie University/ University of Groningen), addresses this critical knowledge gap by investigating the stone's origin, restudying original research of the Tiber Valley Project and expanding this to the larger Roman Hinterland. This poster presents preliminary findings of the 2025 pilot study. The chemical composition of the paving stones is compared to possible geological sources using portable X-ray fluorescence (p-XRF) measurements to determine their point of origin.

From Education to Public Archaeology: An Integrated Approach to Encourage New Approaches in Research, Dissemination, and Communication of Roman Archaeology

Ludovica Xavier de Silva

Certain aspects of Roman archaeology—like the lives of poor people, women, and children—now receive greater research attention but remain underrepresented in museums and public dissemination. Within the European ARCHAEO DIGIT project (Interreg Italy-Croatia), which develops innovative methodologies for preserving, interpreting, and enhancing archaeological sites in Italy and Croatia to promote inclusive tourism and community participation, we created practical educational activities and hands-on workshops linked directly to these sites. These foster diverse research approaches, better engaging students, researchers, and professionals with tangible and intangible heritage, ultimately improving Roman world communication.

New pictures for Novaesium: Viae Castra Legionis

Eckhard Deschler-Erb, Carl Pause & Clemens Sels

Novaesium-Neuss is located on the Lower German Limes and was the site of Roman legions in the 1st century. A look at the main axes of the camp (Via Praetoria and via decumana) during the stone construction phase reveals a lively community that was not only populated by soldiers.

Be a Lady, but Not Like That

Ştefania Dogărel

Ancient literature is abundantly opinionated on how women can make themselves enticing, agreeable and, generally, easier to bear by men. From looks to conduct and from benevolence to reprimand, it seems like most writers had something to add to or subtract from the perfect woman. This poster is neither intended as a historical commentary, nor as a reiteration of critics. Rather, its intention is to collect the often-contradictory topoi of female perfection and envision what a woman following this advice should look like. Drawing on Semonides of Amorgos' typology of women as its starting point, this is an excursion through centuries of physical and moral beauty standards.

Treasure Trove Scotland: Recent Roman Finds

Emily Freeman

Treasure Trove Scotland is the system through which finds recovered by members of the public and through organised fieldwork must legally be reported. The Treasure Trove Unit (TTU) is therefore in the privileged position to see all new archaeological/historical finds from across Scotland, from the earliest stone tools to modern militaria. This poster highlights a small selection of recent significant Roman finds reported to the TTU, and explores how metal detecting in particular is enhancing our understanding of Roman activity in Northern Britain.

Who Do They Think They Are? Ethnic Identity of the Auxilia on Hadrian's Wall

Reece Garrett

Epigraphic analyses for the frontier of northern Britannia have been undertaken for many decades now, with Peter Salway (1965) offering a substantial contribution. However, there are very few comprehensive studies that attempt to reconstruct elements of life along Hadrian's Wall. Following on from research undertaken for an undergraduate dissertation, a series of identity categories for the auxilia soldiers of the Wall were investigated, with particular focus on ethnic labels. The research assessed the extent to which ethnic diasporas can be identified and sustained from the epigraphic record using quantitative and qualitative data.

How Does Your Garden Grow? With Cockle Shells and Fish Bone Remains.

Lee Graña

This poster is an overview of the ichthyofaunal assemblage collected over five seasons of excavation at the Casa della Regina Carolina, Pompeii (collaboration: University of Cornell and Bologna). This villa (VIII.3.14), located not far from the forum, comprises one of the largest gardens in the city. Throughout the investigation of the garden features, consisting of root cavities, yellow planting pits, and intact planting pots, numerous ecofacts have been recovered. The 100% sieving strategy and on-site flotation has provided substantial ichthyofaunal data, often absent from earlier excavations in the city. This has provided new insights into the local Pompeian diet.

The Norton Disney Roman Dodecahedron

Lorena Hitchens

In 2023, an intact Roman dodecahedron was excavated in Lincolnshire, and I wrote the specialist report about it for the 2024 site report. My ongoing PhD research is on these artefacts. The poster would present some preliminary findings on this unique example.

The poster will introduce dodecahedra and include a distribution map across Roman Britain, providing context for this particular find in the province. I will highlight specific features of the Norton Disney dodecahedron and share some of my laboratory findings about it. What can archaeological science reveal about this object? Can it "speak for itself" through empirical data?

Cocktail Party Effect on the Forum Romanum

Kamil Kopij, Adam Pilch & Kaja Glomb

This paper examines Roman public speaking as a ritualized civic performance within the Forum Romanum. We conceptualize the Forum as an oratorical taskscape, where architecture and topography shaped sensory engagement. Using acoustic simulations and visibility analyses of virtual reconstructions, we investigate how the material environment conditioned oratorical practice. By applying the cocktail party effect to speech perception under varying background noise, we estimate the "effective audience" – those capable of both hearing the voice and seeing the orator's gestures. This multimodal approach reveals how embodied communication functioned within Rome's complex acoustic landscape.

The Last Line of Defence Castra and the Defence of Italy in Late Antiquity

Ana Kovačić

Based on recent archaeological excavations at the site, this poster presents the Late Roman fortress of Castra as a key element of the inner defensive line of the Roman Empire, illustrating a shift in the Late Roman concept of the limes. As part of the *Claustra Alpium Iuliarum*, Castra controlled strategic routes between Italy and the provinces, demonstrating a fundamental change from frontier defence at the edge of the Empire to the defence of Italy itself. The fortress served as both a military installation and a node of mobility and trade, regulating the movement of troops, goods, and information, and remained in use into the fifth century, as evidenced by associated material culture.

New Pictures for Novaesium (DE) - Fort and Watchtower at the Reckberg

Aleksandra Kruglova, Eckhard Deschler-Erb & Franziska Weber

The poster "New Images for Novaesium (DE) - Fort and Watchtower at the Reckberg" was created as part of a course offered by the Cologne Archaeological Institute in cooperation with the Clemens Sels Museum in Neuss. In total, four new images depicting life in Roman Neuss were developed and integrated into the museum's redesigned permanent exhibition.

The Reckberg is located south of the famous legionary camp and was home to a watchtower and a small fort. These structures served to monitor the nearby Rhine river road and the Rhine crossing. The reconstructed bird's-eye view also shows the surrounding settlement areas, combining the latest research findings and presenting a vivid micro-region along the Lower German Limes.

Giving, Saving, Celebrating: The Purpose of Decorated Roman Money Banks

Robyn Le Blan

This poster explores the function of decorated ceramic Roman savings banks. This group of mould-made objects, largely dating to the second and third centuries CE from central Italy, appear in beehive and lenticular shapes decorated with Mercury, Fortuna, or victory imagery. Archaeological contexts rarely indicate how or why they were used, and few are found containing coins. This poster argues that the banks were Saturnalia or New Years gifts, based on their imagery and geographic extent. This is an independent study and work-in-progress that forms part of a broader project on money storage in ancient Rome.

Power and Order in Roman Bath Architecture: Interpreting the Baths of Lugdunum Convenarum through Space Syntax Analysis

Yang Mei

This doctoral thesis explores two bathhouses in Lugdunum Convenarum in the Pyrenees Mountains through their spatial layout, viewing them as reflections of Roman power and social order. Through spatial syntax analysis, it reveals how the layout of the bathhouses guides the flow of people and emphasizes the hierarchical system, leading key spaces to direct bathers from public areas to private ones. The study suggests that the bathhouses not only have bathing and social functions, but also reflect the norms of the Roman Empire and the loyalty of the local elite. Therefore, the northern bathhouse demonstrates how architecture codes social order in Roman provincial cities and promotes cultural assimilation.

A Tribune's Residence in Novaesium (DE) - A 3D Life Reconstruction

Sophie Merten, Aleksandra Wiese & Linda Reckmann

The poster was created as part of a course offered by the Cologne Archaeological Institute in cooperation with the Clemens Sels Museum in Neuss. In total, four new images depicting life in Roman Neuss were developed and integrated into the museum's redesigned permanent exhibition

Six architecturally similar structures at the via principalis at Neuss legionary fortress are identified as tribunes' residences. Building 54 is the most well-preserved one and thus was used for reconstruction efforts. The poster presents the most appropriate options for the reconstruction from the external walls to the tableware on the dining table.

Transport in Roman Britain: by Land or Water?

Luke Platt

This poster explores land versus water transport in Roman Britain, particularly regarding commerce. It briefly covers the background concerning water versus land transport in antiquity. Through exploring product distributions it appears that land transport was more prominent, challenging the notion of water transport's primacy and that long-distance land transport was inherently uneconomical. Rivers appear relatively unimportant; sea transport was almost exclusively military and confined to specific areas of the coast. This is a work in progress, forming part of a PhD thesis, but builds on extensive Masters-level research which explored transport technology, its organisation and the economic impact of this.

AMULUM: Experimental Archaeology, Roman Pastry, and the Taste of the Past

Angelina Raičković Savić

This poster presents AMULUM, an experimental archaeology project originating from Viminacium, in modern Serbia. The project recreates Roman pastries by combining archaeological evidence and ancient culinary texts. Ceramic reliefs provided the models for casting moulds, while authentic recipes inspired the preparation of the dough. The result is more than a pastry: a tangible souvenir that is both edible and educational, conveying the stories of Roman daily life through taste and material culture. AMULUM demonstrates how food can bridge scholarship and public engagement, creating a memorable sensory experience that connects modern audiences to the heritage of the Roman world.

Roman Mobility: The RoBMobS Approach

Leah Reynolds, Rachèl Spros, Sophy Charlton, Richard Madgwick & David Roberts

Human mobility was a defining feature of the Roman world, yet its scale and social impact in Britannia remain poorly understood. Research has focused mainly on military and urban contexts, leaving rural communities underrepresented. Roman Britannia: Mobility and Society addresses this gap through the largest holistic study of mobility in Roman Britannia. Isotope and aDNA analyses of nearly 400 individuals from 20 cemeteries across England and Wales are integrated with archaeological and historical evidence to reconstruct patterns of movement and their changing social implications. In this poster, the preliminary oxygen isotope results from five cemeteries are presented.

Assessing Economic Mobility and Strategy in Roman Spain

Maarten Schmaal

This poster introduces my PhD project on economic mobility and strategy in Roman Spain in the 1st-2nd centuries CE. The project evaluates different economic strategies in the Hiber and Baetis Valleys through a combination of archaeological and historical methods. After reconstructing the economic landscape of the two regions based on excavation and field survey data and contextualizing it based on epigraphic and literary evidence, Agent Based Modelling will be used to assess different economic strategies in these environments for individuals in different social positions. The project thereby illuminates regional differences that enabled and constrained economic mobility for specific groups.

New Images for Novaesium (GER) - A New Aerial Image of the Legionary Camp

Johannes Seespeck

The poster „New Images for Novaesium (GER) - A new aerial image of the legionary camp“ was created as a part of a course offered by the Cologne Archaeological Institute in cooperation with the Clemens Sels Museum in Neuss. In total, four new images depicting life in Roman Neuss were developed and integrated into the museum’s redesigned permanent exhibition.

The poster shows the camp from a new perspective and now also conveys the connection to the surrounding area with Cannabae Legionis and the Erft crossing. The location of the camp on the newly reconstructed course of the river Erft is noteworthy.

Whispers of Worship: What Archaeological Discoveries Tell Us about Religious Identity

Katalin Sidó & Szilamér-Péter Pánczél

Situated near the eastern frontier of Roman Dacia, the Roman military site of Cristești (Mureș County, Romania) has yielded a wealth of artefacts over the past century, offering a compelling insight into the religious life and diverse identities of its inhabitants.

One particularly significant find is a statue of a Genius Nautarum. Depicted wearing a modius on his head and holding both a cornucopia and a patera, the figure is accompanied by a ship positioned beside his left leg. The statue’s distinctive stylistic features, together with the provenience of the marble, suggest an eastern origin. It was discovered in the vicinity of a large apsidal building, which likely functioned as the headquarters of a collegium. Numerous tile stamps and a military diploma attest to the presence of the ala I (Gallorum et) Bosporanorum at the site during the second and third centuries AD.

The pottery assemblage also points to rich ritual practices. Numerous ceramic vessels, including turribula, perforated jugs and plates bearing traces of burning, appear to have been used in cultic contexts. While some of these vessels reflect Norico-Pannonian traditions, this cultural connection is further reinforced by the distinctive Norico-Pannonian garments depicted on funerary monuments discovered at the site.

This poster aims to explore these varied religious influences, highlighting their distinctive characteristics and illustrating the diverse origins of the population in Roman Dacia, with particular emphasis on Cristești.

New Approaches to Inveresk: Interpreting Roman Scotland

Bethany Simpson & Fraser Hunter

This poster will discuss ongoing research on the site of Inveresk and approaches to interpreting this evidence for public dissemination. Modern re-evaluation of finds from multiple excavations at Inveresk over a period of 50 years, together with new scientific analysis and facial reconstruction, is transforming our understanding of Inveresk’s communities. Shedding new light on old finds has enabled re-interpretation of a key site in the infrastructure of Antonine Scotland. This work will bring together evidence to inform our understanding of Rome’s northernmost frontier and explore innovative techniques to bring this research to life for public audiences in a new exhibition.

Løsning Søndermark - New Finds of Roman Origin in a South Scandinavian Armament Deposition

Elias Witte Thomassen

In 2024-25, the Vejle Museums carried out a developer-funded archaeological excavation of an Iron Age settlement in eastern Jutland, Denmark. During the campaign, several armament depositions were excavated, all of which were deposited in high-status dwellings. These dryland depositions were carried out in the 5th century AD. Among the artefacts were several items of Roman origin, including swords, mail armour, as well as the neck and cheek guards of a 4th century ridge helmet. This poster will report on the preliminary results of the excavation, relating to the Roman artefacts and the context in which they were found.

A Sardinian-Punic Coin and the La Chiusa Necropolis: Insights into Exchange Networks and Romanisation in Inner Southern Etruria

Alessandro Tizi & Biancalisa Corradini

This paper presents the integrated analysis of a Sardinian-Punic bronze coin depicting the goddess Tanit, recovered in 2013 during a non-systematic field survey at Banditella di Sopra (Arlena di Castro, Italy), and the nearby La Chiusa necropolis. The coin, from a probable settlement dated between the 5th and 2nd centuries BC, belongs to the final phase of the “Sardinian style” series and represents a rare find in the Etruscan context, being the only known specimen in mainland Italy bearing three ears of wheat on the reverse. The La Chiusa necropolis, investigated between 2007 and 2010 after episodes of illegal excavation, consists of two sectors: Sector A, with a chamber tomb and pit graves linked to a

rural settlement active between the 2nd century BC and the 1st century AD, and Sector B, with chamber tombs dated to the late 3rd century BC. Together, these data provide significant insights into exchange networks, Roman conquest dynamics, and processes of Romanization in inner southern Etruria.

Creating a High-Resolution, Open-Access Database of Roman-Period Roads near Rome

Steven van Ens

Despite many surveys in the countryside of Rome, some of which are now integrated into the Roman Hinterland Project (RHP), knowledge of the road network that connected all these rural sites with one another and the larger Mediterranean world is still relatively lacking. This poster presents the first part of a new PhD-project within the RHP, which aims to learn more about the network's effect on the development of the countryside. Much like the recently published gazetteer *Itiner-e* but focusing on the regional scale, the poster presents a high-resolution database of roads, and the challenges of compiling such a dataset.

From Crisis to Control: Landscapes of Power at Roman Arausio (Orange, France)

Anouk Vermeulen

Periods of political crisis in the Roman Empire were often followed by intensified efforts to reassert control over provincial territories. The wider project investigates how literary (technical) sources present land division as an instrument of order and restoration, alongside its material implementation on the ground. Using the microregion of Orange as a case study, this poster examines the Flavian cadastral reorganization following the civil wars of 68/69 CE. It investigates how imperial authority was enacted through landscape reorganization, boundary-making, and environmental intervention. Integrating archaeological evidence, epigraphic data (formae and boundary stones), and spatial analysis, the study explores how land division articulated power within the provincial landscape.

Padlock, capsae or...? - Four Mysterious Objects from Insula 22 in Augusta Raurica (CH)

Sophie von Prónyay

As part of her completed master thesis at the University Cologne the author evaluated an excavation in the roman Colonia Augusta Raurica (Switzerland). During the evaluation of Insula 22 four unknown bronze objects were found. They belong to a find complex dating to the 3rd century AD and were associated with the remains of a chest that had been destroyed by fire and remained in situ. Despite intensive research no parallels have yet been found for these round, concave objects made of thin bronze sheet metal. They appear to be rare objects, possibly capsae attachments or decorative elements of furniture.

Modelling Roman Mobility: A Newly Identified Temporary Camp in the Netherlands

Wouter K. Vos, Jens Goeree & Jeroen Oosterbaan

Within the Constructing the Limes research project, students and staff of Saxion University of Applied Sciences developed an integrated methodological framework that combines LiDAR analysis with a model-based predictive approach. Using the R programming language, key landscape and logistical variables—such as Roman troop mobility, plausible route corridors across sandy soils, the exclusion of peatlands, and proximity to freshwater—were operationalized into a spatial probability model. This analysis led to the identification of a temporary Roman camp in the Netherlands. The approximately 8-hectare site, which preserved well-defined remnants of the rampart and titulus, was subsequently confirmed through systematic trial trenching.

Ritual, Rubbish and Retrieval: New Approaches to Roman River Finds

Philippa Walton & Hella Eckardt

This poster will showcase some preliminary findings from our AHRC/DFG-funded project exploring the phenomenon of object deposition in rivers in Roman Britain and beyond. It will present some of the case-studies we have undertaken which focus on individual objects, assemblages and finders while outlining the new theoretical and methodological frameworks we have developed to study river finds from across the Roman empire.

Iron Bolt-Heads in Dacia

Nagy Zsolt-Szabolcs

During the study of ballista bolt heads from the site of Călugăreni/Mikháza, numerous cases were identified in which these objects had been incorrectly classified. The reinterpretation of these finds significantly alters the distribution map of ballista bolt head occurrences.

