



UrbNet Annual Report 2022

A Centre of Excellence funded by the Danish National Research Foundation
Hosted by Aarhus University



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UrbNet Mission Statement

Centre for Urban Network Evolutions (UrbNet) explores the archaeology and history of urban societies and their networks from the Ancient Mediterranean to medieval Northern Europe and to the Indian Ocean World.

We are an interdisciplinary research initiative, which integrates new methods from contextual cultural studies rooted in the humanities with the natural sciences.

Approaching urbanism as a network dynamic, we aim to develop a high-definition archaeology to determine how urban networks catalyzed societal and environmental expansions and crises in the past.



Group photo from UrbNet trip around northern Jutland, here at Hohøj (photo: Adam Pažout)

Annual Report 2022

Cover illustration:
Hieroglyph for town (from the Min Senwosret I relief (UC14786i-ii) in the Petrie Museum of Egyptian and Sudanese Archaeology, UCL. Photo: Søren M. Sindbæk).

Editing: Christina Levisen, Eva Mortensen, Rubina Raja, and Søren M. Sindbæk
Layout: Eva Mortensen

Centre for Urban Network Evolutions
Aarhus University
Moesgaard Allé 20
DK-8270 Højbjerg
Denmark

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Greetings from the Director

In ancient myths and folklore all around the world, the number 7 is considered a lucky one, often connected with magical traits. And so, I am pleased to present the 7th UrbNet annual report, covering our 2022 activities. At UrbNet 2022 was a year of great achievements and lucky circumstances – not least because it was the first full year since 2020 without Covid-19 lockdowns and restrictions impacting our work. This enabled us to canalize renewed energy into organizing key events in person – conferences, workshops, and PhD courses – and inviting international specialists to present their newest research and, together with UrbNetters, make pushes for high-risk/high-gain attempts at tackling centuries-long questions and reforming archaeological practices.

Taking stock

In 2022 UrbNet passed the halfway mark of the second round of funding from the Danish National Research Foundation (DNRF). I am proud to say that numerous of our joint efforts led to conceptual breakthroughs and methodological advances, both within and across the disciplines that the centre spans. I wish to particularly draw attention to our agenda conference *Comparing Urban Heterogeneity*, hosted in June at the Royal Danish Academy of Sciences and Letters – now well underway to publication as a special issue in *Journal of Urban Archaeology*; our many high-impact publications, including in monograph form, such as *Pearl of the Desert: A History of Palmyra*, published by Oxford University Press; the first volume of the monumental final publications from Ribe; the publication of the Ingholt Archive in four massive volumes; as well as several journal articles in *Nature*, *PLOS ONE*, *JAS*, and many more. There is no doubt that UrbNet's researchers produce results that are recognized worldwide – both in teams and in their capacities as frontrunners within their own fields of expertise. The Friedrich Wilhelm Bessel-Forschungsbpreis awarded by the Alexander von Humboldt Foundation in November was a milestone acknowledgement of the outstanding research produced at UrbNet, and all the centre's employees have a share in the attention given to our research over the past year – whether focus is given to the individual or the group as such. The fact that this award, which in 98 per cent of the cases goes to natural sciences, was awarded to a humanities professor is in and of itself an underlining of the quality, visibility, and impact of UrbNet's research on the international research community.

Staff

Several new employees joined the centre in 2022, including three post-docs, two of whom brought in their own funding (a Margarita Salas Postdoctoral Researcher and a Marie Skłodowska-Curie Postdoctoral Fellow, respectively); two research assistants; one PhD student; and three student assistants. As always, it has been incredible to be part of and witness the successful integration of new scholars into the existing UrbNet framework. There has been a genuine, mutual willingness to share knowledge and contribute expertise, while simultaneously investing time and energy in new colleagues, thus adding positively to our daily working environment. This is also reflected in the annual university-wide workplace assessment. I am immensely proud of the inclusive UrbNet spirit that has characterized our community from day one.

We also bid farewell to a number of staff members who ventured into new territory, in many cases taking up long-term and tenured positions or climbing the career ladder in other ways. This included seven postdocs, three research assistants, and one student assistant. Although it is always with a hint of melancholy that we let go of great people who have been an integral part of the centre, our celebration of their successes is greater than the sadness of letting them go, and it is with equal parts pride and cheering that we send them off to conquer new frontiers in research and teaching. We have entered official collaborations with numerous of them, and I take this as a testimony of the legacy we are already actively building.

Educating the next generation

In 2022 UrbNet filled the remaining two PhD positions at the centre. Derek James Parrott's project focuses on the relationship between craftsman and the early coastal emporia towns of Viking Age Scandinavia through the lens of ceramic nonferrous metalworking moulds from Ribe. By digitally modelling these objects via 3D laser scanning, his project will lead to a firmer establishment and more refined view of how Viking Age urban centres developed.



Mette Lang Jansen investigates the changing network dynamics of urban centres in the Roman Near East, focusing on the developments of the transport infrastructure in and around Palmyra and the Decapolis. By combining this information with modern network-science analyses, her project will enhance our understanding of the role of transport infrastructure in the development of human societies.

Mahir Hrnjić obtained his PhD degree 16 March, based on his dissertation *Relinking Networks of Silver: The Archaeometry of Viking-Age Ring Ingots and Early Medieval Islamic Coinage*. His research shed light on supra-regional trade and networks between Scandinavia, eastern Europe and Asia by analysing the chemical composition and isotopic signatures of silver found in early medieval Danish hoards.

The unwavering commitment that PhD students at UrbNet experience by their supervisors and colleagues is commendable, and it is truly a joint UrbNet effort to pave the way for upcoming scholars in the archaeologies and beyond.

Events

The centre hosted a multitude of international events in 2022, including five conferences, two workshops, and four PhD courses. Among these was the key UrbNet conference *Comparing Urban Heterogeneity*, which was held 27–28 June at the Royal Danish Academy of Sciences and Letters in Copenhagen. The aim was to reframe comparative archaeological studies of early urban societies to focus on the evolution of heterogeneity, and the conference featured thirteen stimulating and thought-provoking papers by leading experts from across Europe and the US, which critically explored the data and methodologies that allow robust comparisons between places and societies, as well as the models that can frame an understanding of patterns, trajectories, and causation. The conference proceedings will appear in 2023.

Fundraising

In an increasingly competitive funding environment, I am proud that UrbNet employees successfully attracted a number of external grants in 2022. In total, we raised 4,520,539 DKK in new funds and carried over projects worth 32,163,491 DKK. Regardless of the size and the scope of each grant, the creative effort and the hard work that went into the application processes deserve praise. I also genuinely commend those who – despite their efforts – were not awarded a grant in the end, but who were not defeated by their disappointment and instead pressed on with indomitable spirit and fierce determination.

Acknowledgements

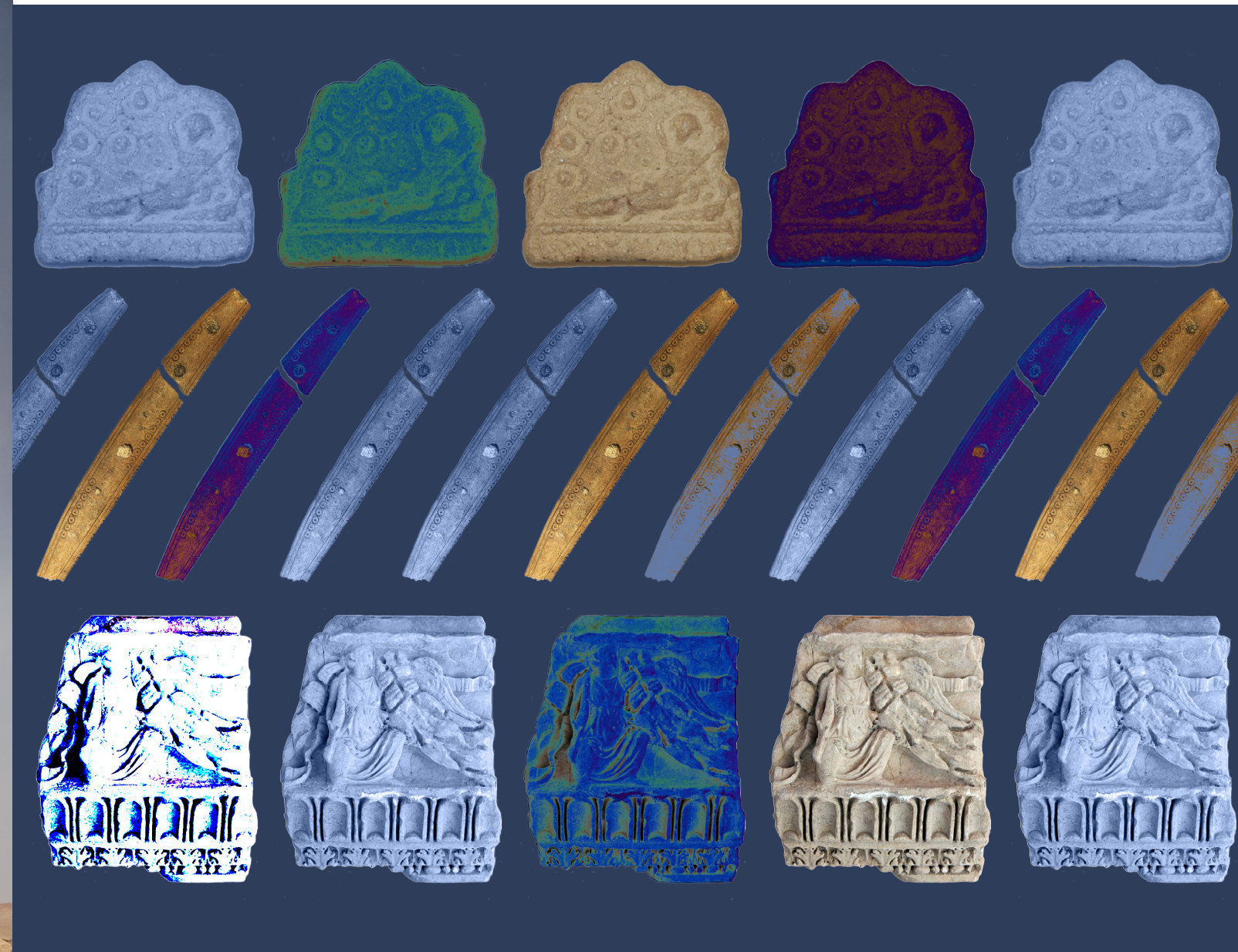
Since 2015 it has been my privilege to head the most substantially funded Centre of Excellence within the humanities in Denmark, and time and again I am taken aback at the opportunities afforded to me, my employees, and collaborators as a result of this platform. During a time of dwindling political support and an abrasively lacking recognition of the significant value and public impact of the human sciences, I am deeply appreciative of the backing by the Danish National Research Foundation and Aarhus University, without which UrbNet would simply not exist. Likewise, a big thanks is owed to the many other public agencies and private foundations who continue to fund our research projects. I wish to also extend my gratitude to UrbNet's partners and collaborators, with whom we happily share our achievements and successes. And finally, I would like to express a heartfelt thanks to the delightful UrbNetters – both past and present. I see your hard work, and I admire your dedication. You constantly amaze and inspire me to reach higher, and together we push the boundaries for how archaeology and history are investigated and written.

Aarhus, March 2023

Rubina Raja



Tomb no. 86 in Palmyra
(photo: Rubina Raja).



TOP row: Banqueting tessera from Palmyra
(photo: Rubina Raja, with permission from the Ny Carlsberg Glyptotek)
MIDDLE row: Comb found during the excavations in Ribe
(photo: Northern Emporium project/Museum of Southwest Jutland)
BOTTOM row: Architectural marble from the Caesar's Forum excavation
(Sovrintendenza Capitolina and the Caesar's Forum Project)

Staff

UrbNet Leadership



Rubina Raja

Professor, Centre Director
School of Culture and Society, Aarhus University

Rubina Raja's research focuses on urban societies and their manifestation in material and written culture, particularly in the Mediterranean and the Levant. She takes a special interest in regional and interregional development patterns from the Hellenistic to the early medieval period.



Søren M. Sindbæk

Professor, Deputy Director
School of Culture and Society, Aarhus University

Søren M. Sindbæk's research focuses on early urbanism and urban archaeology in Viking Age Scandinavia and early medieval Europe. He has a special interest in early medieval communication and social networks.

Associate Professors



Tom Brughmans

Associate Professor
School of Culture and Society, Aarhus University

Tom Brughmans's research interests include the study of Roman economic and urban phenomena, past social networks and visual signalling systems. He performs much of his work by applying computational methods such as network science, agent-based simulation, and geographical information systems.



Sarah Croix

Associate Professor (1 February–31 December 2022)
School of Culture and Society, Aarhus University

Sarah Croix specializes in Viking Age archaeology in South Scandinavia and its broader historical, European context. She also focuses on urbanization and Christianization as social transformations, identities and social inequality, method development (3D methods), and archaeological fieldwork.

Postdocs • Assistant Professors



Irene Bavuso

Postdoc (1 January–14 September 2022)
School of Culture and Society, Aarhus University

Irene Bavuso's work concentrates on the socio-economic history of north-western Europe between the end of Late Antiquity and the beginning of the early Middle Ages. She focuses especially on the development of social hierarchies and urban networks through trade and production.



Olympia Bobou

Assistant Professor
School of Culture and Society, Aarhus University

Olympia Bobou specializes in ancient sculpture. Her main tasks include coordinating the work within the Palmyra projects and finalizing the vast catalogue of funerary sculptures.



Cristina Boschetti

Postdoc (*Caesar's Forum* project, funded by the Carlsberg Foundation and UrbNet)
School of Culture and Society, Aarhus University

Cristina Boschetti's main research subject is the economy and technology of glass from the Roman to the medieval period in Europe. She is also interested in the aspects of making mosaics, paintings, and jewellery.



Thomas Schrøder Daugbjerg

Postdoc (1 January–31 August 2022)
Department of Physics and Astronomy, Aarhus University

Thomas Schrøder Daugbjerg works with radiocarbon and radiometric dating for the determination of absolute ages. He is especially experienced in the development of methodology, radiocarbon dating of lime mortars, and radiocarbon dating of bones.



Ioana Andrada Dumitru

Postdoc
School of Culture and Society, Aarhus University

Ioana Andrada Dumitru investigates the climate-environment-society nexus, focusing on strategic resource exploitation, human-environment interactions, trends in settlement patterns, and human cooperation.



Guido Furlan

Postdoc
School of Culture and Society, Aarhus University

Guido Furlan's research focuses on Roman archaeology and methodological issues concerning the study of ancient cities, including the dating of contexts and rubbish management.



Kirstine Haase

Postdoc (1 March–31 December 2022)
School of Culture and Society, Aarhus University

Kirstine Haase is a medieval archaeologist specializing in urban archaeology. She works on 3D-mapping of archaeological deposits in medieval cities based on existing archaeological and geological data, thus identifying potentials and threats to the existing sub-urban archaeological record.



Eduardo Napoleon Herrera Malatesta

Postdoc (1 September–31 December 2022) (Marie Skłodowska-Curie Postdoctoral Fellowship)
School of Culture and Society, Aarhus University

Eduardo Napoleon Herrera Malatesta focuses on developing a new framework methodology for landscape archaeology to better assess the inherent uncertainties contained in field data, particularly coming from non-systematic surveys, and its resulting models and visualizations.



Emanuele Ettore Intagliata

Postdoc (1 January–28 February 2022)
School of Culture and Society, Aarhus University

Emanuele Ettore Intagliata's research interests range across the history and archaeology of late antique and Byzantine cities in the Near East. He explores how cities transformed in the early Byzantine period (c. seventh–ninth centuries AD), with an eye on the role of urban networks in this process.



Amy Christine Miranda

Postdoc (1 January–31 October 2022) (*Archive Archaeology* project, funded by the ALIPH Foundation)
School of Culture and Society, Aarhus University

Amy Christine Miranda is a specialist of the art and architecture of the Roman imperial period with a focus on the Middle Eastern provinces.



Adam Pažout

Postdoc (*MINERVA* project, funded by the Independent Research Fund Denmark)
School of Culture and Society, Aarhus University

Adam Pažout's research interests span Roman roads and army, Hellenistic and Roman fortifications, landscape archaeology, GIS and computational methods in archaeology, and a particular region of interest is the Levant and Israel. He is employed in the project *MINERVA* focusing on the Roman travel networks.



Alba Antía Rodríguez Nóvoa

Postdoc (Margarita Salas Postdoctoral Researcher)
Universidade de Santiago de Compostela

Alba Antía Rodríguez Nóvoa specializes in Late Iron Age and Roman pottery in north-western Iberia, as well as in Roman trade and economy in the Atlantic region. Her project explores the applications of computational archaeology to Roman trade.



Iza Romanowska

Postdoc (*Circular Economy* project, funded by AIAS and the Carlsberg Foundation)
School of Culture and Society and Aarhus Institute of Advanced Studies, Aarhus University

Iza Romanowska is a complexity scientist working on the interface between social sciences and computer science. She specializes in agent-based modelling – a simulation technique used for various research questions, from mobility in prehistoric cities to large-scale economic interactions across the Roman Mediterranean.



Sine Grove Saxkjær

Postdoc (funded by the Carlsberg Foundation, Reintegration Fellowship)
School of Culture and Society, Aarhus University

Sine Grove Saxkjær's research focus is the study of urban ethnicities and the relation between people and cities in ancient Latium during the first millennium BC, including the interaction between city formation, urbanization and migration patterns, ethnogenesis, and cultural exchange.



Julia Steding

Postdoc (1 January–30 September 2022)
School of Culture and Society, Aarhus University

Julia Steding explores the economy of cities in the Near East and in how far circular processes can be found in the archaeological data, e.g. through the reuse of building materials.

PhD Students



Rowan Stanley English

PhD Student
School of Culture and Society, Aarhus University

Rowan Stanley English's research concerns the funerary archaeology of the North Sea in the fifth–seventh centuries AD. His project focuses on long-distance trade goods that appear in graves in this area.



Rhiannon Garth Jones

PhD Student
School of Culture and Society, Aarhus University

Rhiannon Garth Jones uses an interdisciplinary approach to analyse the many ways the 'Abbasid caliphs, from AD 754–861, deliberately and dynamically used 'Graeco-Roman' traditions to assert their political and religious authority.



Line Egelund Hejlskov

PhD Student (1–27 January 2022) (*Caesar's Forum* project, funded by the Carlsberg Foundation)
School of Culture and Society, Aarhus University

Line Egelund Hejlskov's project reinvestigates the long-term development of the use of public spaces in the heart of Rome by focusing on Caesar's Forum during Late Antiquity and into the medieval period.



Mette Lang Jansen

PhD Student (1 February–31 December 2022)
School of Culture and Society, Aarhus University

Mette Lang Jansen investigates the changing network dynamics of urban centres in the Roman Near East by focusing on the developments of the transport infrastructure in and around Palmyra and the Decapolis.



Derek James Parrott

PhD Student (1 February–31 December 2022)
School of Culture and Society, Aarhus University

Derek James Parrott specializes in Viking Age material culture. He studies the relationship between craftspeople and the early coastal emporia towns of Viking Age Scandinavia through the lens of ceramic nonferrous metalworking moulds from the town of Ribe.



Mette Lang Jansen

Research Assistant (1–31 January 2022) (*Circular Economy* project, funded by the Carlsberg Foundation)
School of Culture and Society, Aarhus University

Mette Lang Jansen helps prepare the corpus of funerary portraits collected by the *Palmyra Portrait Project* for publication.



Katarína Mokránová

Research Assistant (1 March–31 December 2022) (*Circular Economy* project, funded by the Carlsberg Foundation and UrbNet)
School of Culture and Society, Aarhus University

Katarína Mokránová specializes in the archaeology of the Roman Near East with a particular interest in the application of computational methods to study the past. Her research interests further lie in the study of ancient demography and economy.



Nikoline Sauer

Research Assistant (1 January–31 August 2022) (*Archive Archaeology* project, funded by the ALIPH Foundation)
School of Culture and Society, Aarhus University

Nikoline Sauer is a classical archaeologist working with copyediting, literary searches, and image processing.



Julia Steding

Research Assistant (1 October–31 December 2022) (*Circular Economy* project, funded by the Carlsberg Foundation)
School of Culture and Society, Aarhus University

Julia Steding supports the work on the material remains from Roman Palmyra and Harald Ingholt's archival material relating to the site.

Research Assistants



Taylor FitzGerald

Research Assistant (1 March–31 May 2022)
School of Culture and Society, Aarhus University

Taylor FitzGerald focuses on linguistic revisions to the two volumes that will be published in relation to the *Northern Emporium* project.



Joan Campmany Jiménez

Research Assistant (*Circular Economy* project, funded by the Carlsberg Foundation)
School of Culture and Society, Aarhus University

Joan Campmany Jiménez is a classical archaeologist, specializing in the archaeology of the Roman Economy and landscape archaeology. He is studying population change in ancient Palmyra.





Core Collaborators



Søren Munch Kristiansen

Associate Professor
Department of Geoscience, Aarhus University

Søren M. Kristiansen’s work revolves around soils, and he works across a wide range of scientific and professional fields, including geoarchaeology, soil science, groundwater chemistry, medical geology, soil chemistry and geomorphology.



Peter H. Mikkelsen

Head of Department and Vice-Director
Department of Conservation and Natural Science, Moesgaard Museum

Peter H. Mikkelsen is an expert in archaeobotany, and his work focuses mainly on Iron Age and medieval agriculture and consumption.



Jesper Olsen

Associate Professor
Department of Physics and Astronomy, Aarhus University

Jesper Olsen’s research focuses on radiocarbon and stable isotopes. He specializes in a number of statistical methods used in earth/archaeological sciences, including 14C analysis, and he is director of the Aarhus AMS Centre (AARAMS).



Stephanie Wynne-Jones

Professor
Department of Archaeology, University of York

Stephanie Wynne-Jones specializes in material culture and its relationship with practice. Her research focuses on craft and production for trade as well as daily life and the use of space at Songo Mnara where she uses scientific techniques to create a high-resolution picture of life in the town.

Administrative Employees



Christina A. Levisen

Centre Administrator
School of Culture and Society, Aarhus University

Christina A. Levisen heads the centre’s administrative team and coordinates UrbNet’s editorial processes. She is a linguist, and she has worked with centre administration in both Denmark and abroad.



Mie Egelund Lind

Assistant Centre Administrator
School of Culture and Society, Aarhus University

Mie Egelund Lind is a classical archaeologist. She works closely together with the centre administrator, managing the day-to-day operation of UrbNet and pushing the centre’s editorial processes. She is also in charge of UrbNet’s SoMe profiles.



Eva Mortensen

Research Administrator (*Circular Economy* project, funded by the Carlsberg Foundation)
School of Culture and Society, Aarhus University

Eva Mortensen is a classical archaeologist. She is part of UrbNet’s editorial team and acts as editorial assistant for the UrbNet-founded *Journal of Urban Archaeology*. She is also in charge of a range of communication initiatives at UrbNet.

Research Affiliates

Professor Roland Fletcher
University of Sydney

Postdoc Trine A. Hass
University of Oxford

Professor Maura K. Heyn
University of North Carolina – Greensboro

Researcher Jan Kindberg Jacobsen
The Danish Institute in Rome

Assistant Professor Elizabeth A. Murphy
Florida State University

Professor Jörg Rüpke
Max-Weber-Kolleg, University of Erfurt

Professor Eivind Heldaas Seland
University of Bergen

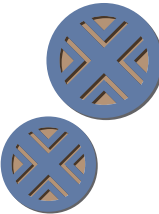
Professor Christopher Smith
University of St Andrews

Professor Mike E. Smith
Arizona State University

Senior Research Associate Federica Sulas
University of Cambridge

Research Assistant Professor Barbora Wouters
Free University of Brussels

Director Jean-Baptiste Yon
Laboratoire HISOMA



Student Assistants

UrbNet
Lasse R. Olsen
(1. January–2 June 2022)

Neena P. Ø. Pagh
(1 July–31 December 2022)

Gry S. Petersen

MINERVA
Funded by the Independent Research Fund Denmark

Jens Emil Christoffersen
(12 September–31 December 2022)

Louise H. Møller
(7 November–31 December 2022)

Visiting Researchers

PhD Student Álvaro Rafael de Balbín-Bueno
University of Oviedo

PhD Student Andrea Cipolatto
Ca’ Foscari University of Venice

Professor Richard Hodges
The American University of Rome

PhD Student David Laguna Palma
University of Granada

PhD Student Olga Palacios Martínez
Autonomous University of Barcelona

UrbNet Highlights



Research objective

To evaluate methods that address uncertainty inherent in past material culture remains (data) and embedded in computational models (methods) in landscape archaeology. A diverse range of uncertainty quantification (UQ) methods will be applied to different archaeological databases and models to define best practices for landscape research.

A New Framework
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To advance the (incipient) relationship between network science and landscape archaeology, which could enhance our understanding of past human activities and spatial statistics will be combined with network science methods.

To explore methodological limitations and opportunities.

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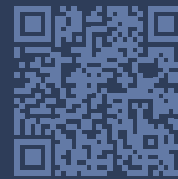
Legacy Data from Palmyra
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Solar Event Sheds Light on Trade

between the Islamic Middle East and Viking Age Scandinavia

Funding	The Carlsberg Foundation and UrbNet
Authors of study	Project Researcher Bente Philippsen , Curator Claus Feveile , Associate Professor Jesper Olsen , and Professor Søren M. Sindbæk
Project	Northern Emporium

"Single-Year Radiocarbon Dating Anchors Viking Age Trade Cycles in Time", *Nature* 601, 392–396.



The *Northern Emporium* project and Museum of Southwest Jutland's excavations of settlement and workshop layers in a central part of early Ribe in Denmark have uncovered a wealth of trade objects from all corners of the world. Now we are able to establish an exact sequence of the arrival of the different trade objects at the market in Ribe, and the emergence of Ribe's vast network of trade connections can be traced.

In a study published in the leading international journal *Nature*, we used new astronomical knowledge about the past activity of the sun to establish an exact time anchor for the arrival of trade goods from the Middle East to Viking Age Scandinavia. We have identified a so-called 'Miyake event' (a solar particle event creating a sharp spike in atmospheric radiocarbon in the year of the event) from AD 775 in one of the floor layers in Ribe. This means that the entire sequence of layers and 140 radiocarbon dates can be anchored around this year.

We can then show that the expansion of Afro-Eurasian trade networks, characterized by the arrival of large numbers of Middle Eastern beads, can be dated in Ribe to AD 790±10. However, imports brought by ship from Norway were arriving as early as AD 750.

In addition to challenging the hitherto widely accepted explanation, that maritime expansions in the Viking Age were a response to growing trade with the Middle East, the high-resolution data from the study will also enter into a future update of the radiocarbon calibration curve. The calibration curve is a huge international effort with contributions from many laboratories around the world, and the study will contribute to improving the precision of archaeological dates worldwide.



LEFT: A selection of so-called 'segmented beads' imported from the Middle East to Ribe after c. AD 790.

BELOW: The archaeological stratigraphy of the site has secured an improved understanding of global trade flows in the Viking Age (photos: Museum of Southwest Jutland).



Farming the Desert

Food Security in Palmyra's Hinterland

Funding	The Augustinus Foundation and the Carlsberg Foundation
Authors of study	Research Assistant Joan Campmany Jiménez , Postdoc Iza Romanowska , Professor Rubina Raja and Professor Eivind Heldaas Seland
Project	Circular Economy and Urban Sustainability in Antiquity

"Food Security in Roman Palmyra (Syria) in Light of Paleoclimatological Evidence and its Historical Implications", *PLOS ONE* 17:9, e0273241.



Ancient Palmyra has long attracted scholarly attention, and since 2012 Rubina Raja has been heading several projects focusing on various aspects of the city's archaeology and history. Now after more than a decade of detailed research, it has become possible for UrbNet researchers and collaborative partners, as part of the UrbNet-affiliated project *Circular Economy and Urban Sustainability in Antiquity*, to uncover key factors and dynamics driving Palmyra's historical trajectory.

In an article recently published in *PLOS ONE*, entitled 'Food Security in Roman Palmyra (Syria) in Light of Paleoclimatological Evidence and its Historical Implications', we have developed a formal model of agricultural productivity for Palmyra's hinterland, taking into account factors such as soils, rainfall, and irrigation possibilities. This allowed the team to establish a ceiling for the maximum possible inhabitants of Palmyra and the agricultural population of its hinterland. The model produces robust estimates for the agricultural output of the Palmyrena, that is, the hinterland of the city, but also allows for estimates of agricultural output under different rainfall regimes. This made it possible to evaluate the evolution of the hinterland carrying capacity over time, and showed that there would have been a significant decline by the third century AD. This coincided with the high water mark of Palmyra, both in size and monumentality. The results suggest that food security would have been a crucial issue for third-century Palmyra, and that the deteriorating food-security levels could be one of the deep causes that also called for the gradually growing militarization of the city that eventually led to the appointment of Odaenathus as leader of Palmyra.

The model, along with all relevant instructions for its use, are now publicly available and accessible. They will form the basis for further discussions on agricultural production and food security of Palmyra, and provide a template for future studies of other sites in similar circumstances. The results of this study will add to the growing corpus of formal studies of Palmyra produced by UrbNet in the past years, creating a new basis for understanding the city's urban trajectory.



Palmyra and its immediate surroundings, 1920's
(© Rubina Raja and Palmyra Portrait Project).

Entangled Identity Markers at Osteria dell'Osa

Latium, Central Italy

Funding The Carlsberg Foundation and UrbNet
Author of study Postdoc **Sine Grove Saxkjær**
Project Urban Ethnicities: Centre and Periphery in Ancient Latium

"Entangled Identity Markers at Osteria dell'Osa", in: F. Saccoccio & L. Vecchi (eds.), *Who Do You Think You Are? Ethnicity in the Iron Age Mediterranean*, Specialist Studies on the Mediterranean 8, London: University of London, Accordia Research Institute, 97–114.

The study considers the potential of a multi-layered ethnicity concept using the Osteria dell'Osa necropolis as a case study. When working with the concept of ethnicity in archaeological research, the focus is often on a macro level – i.e. large ethnic groupings such as the Etruscans or the Latins – but it is worth considering whether the concept of ethnicity constitutes a stronger theoretical tool if it also takes into account collective identities at a micro level, i.e. community level.

The Osteria dell'Osa necropolis, situated some 20 km east of Rome, was in use as a burial site from Latial Periods IIA to IVB. In the study, I argue that the Osteria dell'Osa necropolis reflects an elite segment of the corresponding community. From Latial Period III onwards, however, there is a noticeable decrease in the number of burials, and extensive changes took place in their spatial organization. In the past, this development has been interpreted as pointing to the presence of competing

kin groups and the emergence of the *gens* system, while analyses of ethnic markers have centred on material style and on the presence of foreigners at the site. Anna Maria Bietti Sestieri, who led the Osteria dell'Osa excavations, has interpreted the cemetery as belonging to a residential community during Latial Period II, but the remaining burials in Latial Periods III–IV as belonging to members of the original community who at this point had relocated to Gabii, which was rapidly developing into the central urban settlement in the area.

I argue that the development of the necropolis area could also be explained with the emergence and reinforcement of an ethnic identity at community level. The archaeological material reflects shared practices, kinship, and potentially a common descent, as well as a shared link with the territory of the site marked by the elite group's continued use of the Osteria dell'Osa necropolis after its relocation to Gabii. In a time of social tension due to the increasing urbanization in Latium, this group used their ethnic identity as a social strategy created through shared practices that emphasized their shared descent and origin.

The Osteria dell'Osa necropolis
LATIAL PERIOD II-IV

The Osteria dell'Osa necropolis, Latial Period II–IV (illustration: S. G. Saxkjær, after Bietti Sestieri, A. M. (1992). *La necropoli laziale di Osteria dell'Osa I–III*, Quasar: Rome, tav. 4–5).

○ Latial Period II
● Latial Period III
● Latial Period IV

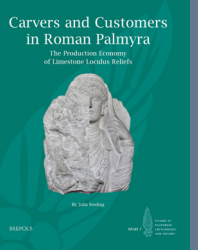
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Carvers and Customers in Roman Palmyra

The Production Economy of Limestone Loculus Reliefs

Funding The Carlsberg Foundation
Author of monograph Postdoc **Julia Steding**
Project Palmyra Portrait Project

Carvers and Customers in Roman Palmyra: The Production Economy of Limestone Loculus Reliefs, Studies in Palmyrene Archaeology and History 7, Turnhout: Brepols.



Based on her PhD thesis, written within the Palmyra Portrait Project and funded by the Carlsberg Foundation, Julia Steding has published the monograph *Carvers and Customers in Roman Palmyra: The Production Economy of Limestone Loculus Reliefs*. The book came out in July 2022 (Brepols Publishers).

The focus of the book is the Palmyrene loculus reliefs, the largest group of funerary sculpture from the city. In different case studies, their placement in the graves, the carving techniques, and the organization of the production are explored. Through these studies it became evident which tools the Palmyrene carvers used, how this toolset changed over time, and how the relation between customers and carvers and the production model must have looked like.

In past scholarship it has often been stated that the portraits look rather alike, but through the conducted analyses it was possible to prove how diverse they actually are. This leads to the suggestion that each relief was carved on commission, and that the customers' influence on the reliefs must have been quite substantial. Not only does the study of the production economy enhance our understanding of ancient limestone carving (an understudied topic in itself), it also improves our understanding of the Palmyrene elite and the stone carvers, as essential actors purchasing and making the portraits.

The work was made possible through the access to the collected corpus of Palmyrene funerary portraiture. In the last ten years, the *Palmyra Portrait Project*, funded by the Carlsberg Foundation and headed by Professor Rubina Raja, has been collecting information about all known portraits from Palmyra, and based on the corpus of the c. 4000 portraits that have been catalogued so far, it has been possible to pursue a variety of research directions.

TOP LEFT: Close-up of a loculus relief with marks of a tooth chisel. Ny Carlsberg Glyptotek, Copenhagen, inv. no. 1155 (© Ny Carlsberg Glyptotek / Photo: Palmyra Portrait Project).
RIGHT: Common stone carving tools (photo: Julia Steding).



Tracing Centuries-Long Changes

of Wine and Oil Consumption in Roman Germania

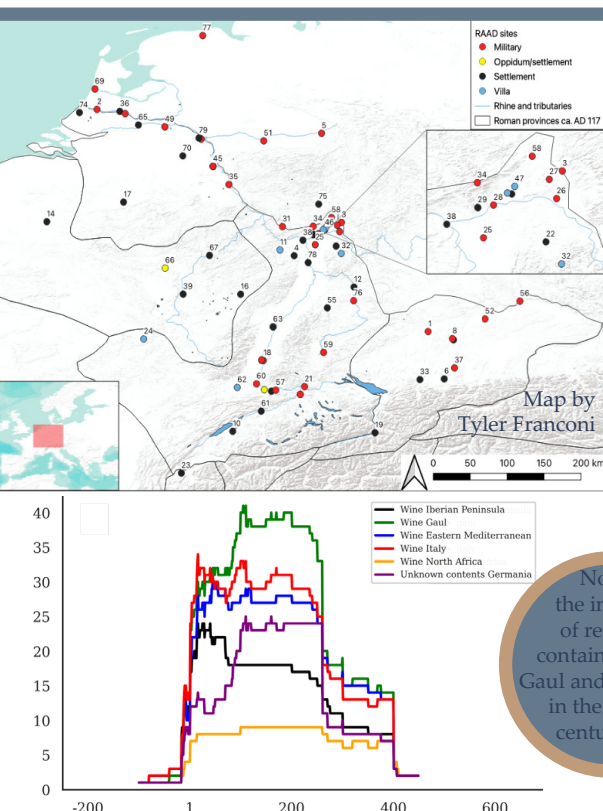
Funding Independent Research Fund Denmark

Authors of study Assistant Professor **Tyler Franconi**, Associate Professor **Tom Brughmans**, Research Assistant **Ekaterina Borisova**, and Junior Developer **Laura Paulsen**

Project MINERVA

Amphorae were the plastic bottles of the ancient world. They were containers for packaging and transporting mainly liquids like olive oil and wine, and were sometimes even reused. Just like plastic bottles, they do not degrade very fast when thrown away, resulting in tons of ceramic amphora refuse being found at archaeological sites. But this is of course a gold mine for classical archaeologists.

The study of Roman amphorae over the last century or so has resulted in a good understanding of what types there were, where they came from, when they were made, and sometimes even what contents they were typically filled with. But archaeologists cannot seem to agree on whether and how to count and publish them.



"From Empire-Wide Integration to Regional Localization: A Synthetic and Quantitative Study of Heterogeneous Amphora Data in Roman Germania Reveals Centuries-Long Change in Regional Patterns of Production and Consumption", *PLOS ONE* 18:1, e0279382.



Ceramic records from excavation reports demonstrate enormous heterogeneity, making the study of amphora patterns from more than one site a challenge.

This challenge was recently tackled by applying replicable data-analysis approaches to a body of 33,707 ceramic entries from seventy-nine sites in the Germania provinces of the Roman Empire. The results were published in the high-impact interdisciplinary journal *PLOS ONE*. We identified how the imports of food-stuffs along this frontier of the Roman Empire changed over a 550-year period, identifying first a reliance on oil and wine from far-off regions like the eastern Mediterranean, Italy, and Spain, followed by a period in which products from Germania itself but also nearby Gaul started to dominate imports. These centuries-long amphora patterns have never before been published in such a quantified way, drawing on the excavated evidence from so many sites.

We also addressed the heterogeneity of this dataset head-on by exploring to what extent the data patterns were impacted by the different quantification methods used by excavators, by the different chronological dating evidences, by differences in the type of settlement, and how temporary military forts during the reign of Augustus shape the data pattern. These chronological patterns provide insight into a regional market within the larger Roman economy, and it is an important case study in changing economic connections over a long period, demonstrating in a transparent and reproducible way a geographical and chronological pulsation in market activity that was otherwise unknown and undemonstrated.

Top: Map of sites included in the study, with inset detailing the region of northern Hesse. Bottom: Number of sites at which wine amphorae from different origins were excavated (© Franconi et al. 2023, Figs. 1 and 7).

Invisible Circularity

from the Roman Period to the Middle Ages

Funding The Carlsberg Foundation and UrbNet

Written by Postdoc **Guido Furlan**



From the conference at Moesgaard Museum (photos: Rowan English).

During the last decade, the topics of reuse and recycling received momentum in historical and archaeological studies; at the same time, the debate on the role of circular models in contemporary economies has reached the general public as a key element in tackling climate change.

On 7–8 September 2022, UrbNet hosted the conference *Invisible Circularity from the Roman Period to the Middle Ages* at Moesgaard Museum. The conference brought together specialists in different fields of archaeology, material studies, and history to achieve a more holistic view of circular economies in Roman and early medieval societies. The conference was organized by UrbNet postdocs Irene Bavuso, Guido Furlan, and Julia Steding together with former UrbNet assistant professor and current research fellow Emanuele Ettore Intagliata (Università degli Studi di Milano).

Practices such as secondary use, recycling, maintenance, and refurbishing were challenged from different, often unexpected, perspectives, and with reference to different materials (metalware, glasses, glazes, textiles, ceramics, building materials), whole monuments, and case studies focusing on selected sites. Topics such as economic sustainability and the cultural value of reuse were also addressed.

Among the many points of interest that emerged during the discussion slots, one came through particularly clearly: circularity has almost always been an integrated part of economic systems. Contemporary 'western countries' seem to represent the real exception, as they are rediscovering only very recently the benefits of an approach which was still widespread before the mid-twentieth century. Furthermore, in contrast to the title of the conference, the papers highlighted that circular processes are not invisible when studying the right archaeological and historical sources. Instead, practices such as recycling, repair, and renovation are widespread and can contribute to our understanding of premodern economies.

This is in direct line with the research conducted at UrbNet and contributes to the discussion of urban settlements and their functioning as well as the networks that were used for the supply of cities with raw materials for everything from building projects to objects of daily life.

The papers delivered at the conference are being turned into an edited volume, which is due to be published by Oxbow in 2023.

A New Framework

for Landscape Research in Archaeology

Funding Marie Skłodowska-Curie
Written by Postdoc **Eduardo Herrera Malatesta**
Project A New Framework for Landscape Research in Archaeology

A New Framework for Landscape Research in Archaeology (NeFLaRA) is a newly initiated interdisciplinary project that will help address landscape archaeology’s most fundamental challenge: the inherent uncertainty in archaeological reconstructions of past landscapes as a result of the fragmentary nature of archaeological data.

Landscape archaeology studies the relationship between past societies and their environments. Computational and other methods in archaeological landscape research, and in the humanities more broadly, focus almost exclusively on spatial elements, although there is a clear notion that time and histories are fundamentally connected to the landscape. Yet, this dominance of space in landscape research suffers from the major challenge of the fragmentary nature of archaeological data, particularly when this data comes from ‘non-systematic’ regional surveys as opposed to ‘systematic total area’ surveys. While landscape archaeology has benefited from computational developments, a procedure to overcome the embedded uncertainty of spatial data is absent.

Methodological gaps	Research objectives
The uncertainty embedded in past material culture remains due to their fragmentary nature and irregular spatial distributions on or beneath the surface, as well as the uncertainty in the models developed through the application of Geographical Information Systems (GIS), spatial statistics, and network-science methods.	To evaluate methods that assess the uncertainty inherent in past material culture remains (data) and embedded in computational models (methods) for landscape archaeology. A diverse range of uncertainty quantification (UQ) methods will be applied to different archaeological databases and models to define best practices for landscape research.
The highly underexplored relation between spatial statistics and network methods, a combination of which could maximize their potential for enhancing our understanding of the relations underlying past events in space.	To advance the (incipient) relation between spatial methods and network science in the context of archaeological landscape research: Methods from GIS and spatial statistics will be combined with network science methods.
The integration of partial data (data uncertainty) and spatial methods (model uncertainty) in spatial visualizations and visual exploration for digital mapping.	To explore methods for producing geo-visualizations that take into account uncertainty as well as multiscalar spatial relations: Methods from geo-visualization and information visualization, as well as approaches from Digital Humanities will be explored.

By defining best practices, identifying optimal methods, and outlining clear protocols for different datasets and spatial analyses, this project will create a new robust quantitative framework for more accurate computational models of past landscapes, improving their reliability and enhancing their interpretative potential. To achieve this, NeFLaRA will focus on filling in three methodological gaps, and from these and the mentioned fundamental challenge, three research objectives have been formulated (see table).



Pearl of the Desert

A History of Palmyra

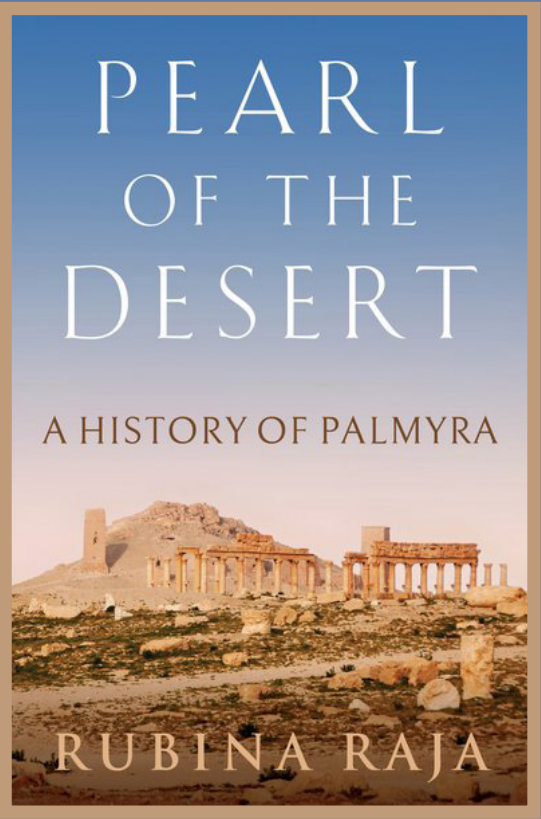
Author of monograph Professor **Rubina Raja**
Project Palmyra Portrait Project

Pearl of the Desert: A History of Palmyra,
 New York: Oxford University Press.

In a new book, Rubina Raja explores urban Palmyra and the desert city’s cultural, social, and mercantile networks. Many chapters take their point of departure in her research on the Palmyrene funerary portraiture, adding entirely new knowledge about this nodal point in the Syrian steppe desert.

Raja lays out the history of Palmyra through its archaeology and the written sources, from its prehistoric periods until the destructions during the civil war in Syria. Palmyra flourished during the first three centuries AD – and most of the evidence dates to this period. The city was under Roman rule, and the rich archaeological record and the many ancient written sources make it possible to narrate Palmyra’s development and the history of its Roman-period inhabitants in a new light. Though the city was an urban island in the middle of the Syrian Desert, it was also an important node in an extensive network: Caravan trade across the vast desert went through Palmyra, and the Palmyrene elite was pivotal in the organization of both camel caravans and overseas trade. The inhabitants had their own way of life, deeply embedded in local traditions and culture, despite – or perhaps because – it was situated between large, powerful empires. At the same time, the Palmyrenes adopted cultural norms from their surrounding world.

The book also raises awareness of the importance of cultural heritage and its preservation in conflict zones and how archaeology has and is still used politically.



Glass Finds from Caesar's Forum

Examples of first-century AD vessels excavated from the sewage: fine tableware (top row) and cosmetic containers (bottom row) (drawings: Francesca Colangeli).



Funding The Carlsberg Foundation, Aarhus University Research Foundation, and UrbNet

Written by Postdoc **Cristina Boschetti**

Project The Excavation of Caesar's Forum in Rome

In 2022 the *Caesar's Forum* project published the typological and chemical studies of the finds excavated in 2020 and 2021 (in collaboration with Dr Nadine Schibille, IRAMAT-CEB, CNRS). The papers discuss the typology, provenance, and chemical composition of Renaissance glass and late antique and early medieval glasses. The former is the first publication ever produced on Renaissance glass from Rome and has significantly improved the fragmentary state of the art related to the chemical composition of glass from modern Italy. The chemical composition of the late antique and medieval glasses showed that Roman glass was used in Rome in its recycled form until at least the eleventh century.

The project also studied a large assemblage of first-century AD glasses (over 1200 finds) excavated in 2022 from the sewage of the forum. This group of materials represents the largest corpus of early imperial glass finds ever excavated in the urban area of Rome. A research trip by Cristina Boschetti to the Danish Institute in Rome resulted in a general catalogue of the glasses and a documentation of the typology and the technique used to fashion the vessels. A second research trip was dedicated to the collection of samples for the LA-ICP-MS analyses and to the selection of the fragments of vessels for drawings. In October 108 samples were analysed, and two papers on the typology of the glass and their chemical composition, respectively, are in preparation.

Boschetti, C., Jacobsen, J. K., Parisi Presicce, C., Raja, R., Schibille, N. & Vitti, M. (2022). "Renaissance Rome and the Italian Glass Connection: 16th-Century A.D. Hospital Dumps in the Forum of Caesar", *Journal of Field Archaeology* 48:1, 73–86.



Boschetti, C., Jacobsen, J. K., Parisi Presicce, C., Raja, R., Schibille, N. & Vitti, M. (2022). "Glass in Rome during the Transition from Late Antiquity to the Early Middle Ages: Materials from the Forum of Caesar", *Heritage Science* 10, article 95.



ABOVE: The early imperial glass finds from the sewage, during the work of classification in the laboratory in Rome, June 2022.

LEFT: Unprepared first-century AD glass fragments and samples embedded in resin ready for the LA-ICP-MS analysis, at the IRAMAT-CEB laboratory of Orléans, October 2022 (photos: Cristina Boschetti).



Upcycling from the Past

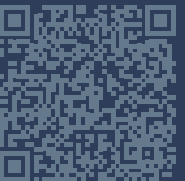
Viking Beadmakers' Secrets Revealed

Funding The Carlsberg Foundation

Author of study Project Researcher **Gry H. Barfod**, Museum Curator **Claus Feveile**, and Professor **Søren M. Sindbæk**

Project Northern Emporium

"Splinters to Splendours: From Upcycled Glass to Viking Beads at Ribe, Denmark", *Archaeological and Anthropological Sciences* 14, article 180.



UrbNet researchers, in a paper in *Archaeological and Anthropological Sciences*, have revealed that ancient craftsmen in Scandinavia used sophisticated and sustainable methods when giving old Roman glass mosaics new life as glass beads. When glass became a scarce commodity in early medieval times, coloured glass cubes were torn down from mosaics in abandoned Roman and Byzantine temples, palaces, and baths; transported north; and traded at emporia towns such as Ribe, where the beadmakers melted them down in large vessels and shaped them into beads.

Until now, archaeologists have assumed that pearl makers used the opaque white tesserae as raw material for the production of white, opaque beads. However, analysing coloured glass beads from Ribe, an important trading town in the Viking Age at the beginning of the eighth century, we found that glassmakers 'upcycled' gold-gilded, transparent mosaic cubes by simply crushing and remelting them in open air at low temperature, thereby trapping air so bubbles could not escape. This way, they could produce opaque white beads with a minimum use of resources.

The valuable ultra-thin sheets of gold stuck to the surface of the gold mosaic stone were salvaged prior to remelting the glass, but some gold inevitably ended up in the melting pot. Tiny drops of gold in the white beads, the many air holes (which made the beads opaque), and the lack of chemical colour tracers show that it was, in fact, the gold mosaic stones that made up the raw material for the beads.

Such traces of gold were found not only in the white but also in the blue beads from the same workshop. Here the chemistry shows that the glassmaker's recipe consisted of a mixture of the blue and golden mosaic stones. Mixing them was necessary because the Roman blue mosaic stones contained high concentrations of chemical substances that made them opaque – and therefore ideal for mosaics, but not for blue beads. By diluting the chemical substances, the result was the deep blue, transparent glass that we know from Viking Age beads.

Thus, the most outstanding achievements at the Ribe trading site were not just the products, but also the knowledge and skills used to work a circular economy and preserve limited resources.

Gold leaf tesserae and white beads from Ribe (photo: Museum of Southwest Jutland).



International Research Award

for Professor Rubina Raja

Funding Alexander von Humboldt-Stiftung
Written by Professor Rubina Raja



The Alexander von Humboldt Stiftung has awarded Rubina Raja the Friedrich Wilhelm Bessel Research Award – one of Germany’s most prestigious research awards – funded by the German Federal Ministry of Education and Research.

It is quite a special case that a researcher from the humanities is awarded the prize. With transdisciplinary and groundbreaking research that combines classical archaeological methods with the possibilities from natural sciences, Rubina Raja shows how top research within the humanities can unfold, and most importantly she shows that classical humanities require a deep-rooted knowledge of both data and sources, but just as much of historiography and the development of disciplines. The bestowal of the award on Rubina Raja demonstrates the importance of the classical humanities and what they bring modern society, and it establishes that humanities frontrunner research also takes place in Denmark.

In the assessment, Rubina Raja’s work on Palmyra’s vast corpus of portraiture and her important historiographic studies were emphasized. So were her contributions to the development of new methods in order to gain new insights into the urban spaces of the past, the development of cities, and the networks of trade, goods, people, and ideas. In addition to her research on Palmyra, also her high-impact research and fieldwork projects on Jerash and Rome were underlined as tackling the past through a combined lens of archaeology, urban history, and religious studies engaging with methods from the natural sciences.

With the award this research at the interface between classical archaeology and religious studies can be broadened, and Rubina Raja will together with colleagues unfold a project on religion in the urban landscape.

Top: Photographs from Ingholt’s trips in the Near East, date unknown (© Rubina Raja and the Palmyra Portrait Project, courtesy of Mary Ebba Underdown).

Middle: Entry page of the online exhibition.

Bottom: Speakers and discussants from the conference *Between the Lines: Towards a Recontextualized Archaeology* at the opening reception of the exhibition at the Museum of Ancient Art, Aarhus University (© The Museum of Ancient Art, Aarhus University).



Legacy Data from Palmyra

Archive Archaeology and the Mandate Period in Syria

Bobou, O., Miranda, A. C., Raja, R. & Yon, J.-B. (2022). *The Ingholt Archive: The Palmyrene Material, Transcribed with Commentary and Bibliography*, Archive Archaeology 2, Turnhout: Brepols.

Funding ALIPH Foundation
Written by Assistant Professor Olympia Bobou, Professor Rubina Raja, and Research Assistant Julia Steding
Project Archive Archaeology: Preserving and Sharing Palmyra’s Cultural Heritage through Harald Ingholt’s Digital Archives



The *Archive Archaeology* project completed its main aim of publishing the full archive of Harald Ingholt on Palmyra, and research on his material led to international conferences and workshops on issues of preservation, use, and decolonization of legacy data. Dissemination of the results happened both through academic publications and, in collaboration with the *Palmyra Portrait Project*, UrbNet, and the Museum of Ancient Art in Aarhus, with an open-access virtual exhibition, *Excavating Archives: Narratives from 20th-Century Palmyra*, which went online 14 June 2022. Now both academic peers and the wider public have the possibility of exploring Ingholt’s archival material from Palmyra through his own records.

Miranda, and Rubina Raja, in close collaboration with world-leading expert in Palmyrene epigraphy Jean-Baptiste Yon. It consists of 2380 sheets, mostly of annotated photographs of sculpture (1999 sheets), and 381 sheets with notes, images, and drawings of architecture, altars, basins, tesserae, and other small objects. In the publication, each sheet is transcribed and commented. Yon has given new translations for the inscribed objects, and the bibliographies of the objects have been updated with new references.

Online exhibition

Bobou, O., Raja, R. & Steding, J. (2022). *Excavating Archives: Narratives from 20th-Century Palmyra*, Aarhus: Centre for Urban Network Evolutions.

Archive sheets online

In addition to the printed publication, each archive sheet can also be found Open Access on Figshare, making the entire archive (without comments, transcriptions, and translations) available online.

The legacy data of Harald Ingholt presents a wealth of material from his excavations and travels in Syria in particular. Ingholt directed excavations in Palmyra and Hama in the 1920s and 1930s. Observations in the field were meticulously noted down, and he was a diligent photographer, capturing excavation work in progress as well as ancient objects and monuments. Furthermore, he studied the funerary portraiture from Palmyra, and for this task, he compiled images of and notes about numerous Palmyrene portraits.

Ingholt’s full archive on Palmyra was just published in four volumes by Olympia Bobou, Amy Christine

Some of his records are part of the virtual exhibition. In fourteen themes, twentieth-century archaeology, ancient Palmyra, and Ingholt’s work are exhibited online and in a printed exhibition booklet. Each theme contains a selection of archive sheets, extracts from excavation diaries, official documents, letters, and photographic material in a commented form.

In addition to the online exhibition, the Museum of Ancient Art at Aarhus University exhibited eight objects given to the museum by Ingholt, and a two-day conference, *Between the Lines: Towards a Recontextualized Archaeology*, marked the opening of the exhibitions. The conference was organized by Rubina Raja and Amy Christine Miranda and took place at Moesgaard Museum 13–14 June 2022.

Comparing Urban Heterogeneity

Funding UrbNet
Written by Professor Rubina Raja and
 Professor Søren M. Sindbæk

In June, UrbNet hosted the conference *Comparing Urban Heterogeneity* at the Royal Danish Academy of Sciences and Letters in Copenhagen. Recent years have seen a profound transformation in the way archaeology approaches early urbanism. Famously defined by large, dense, and heterogeneous settlements, the evolution of urban societies has been compared as a basic parameter of social complexity globally, and a vector of the power of societies to generate and allocate resources for non-agricultural specializations. In this optics, the key dimensions for the evolution of early urban sites have been size and density.

New developments, however, increasingly put the onus on the third aspect: heterogeneity. Empirical studies and theoretical critique challenge the models that link urban settlements to a particular stage of social evolution. They also suggest that there may be no consistent link between the size of urban societies and their potential to facilitate a diversity of identities and activities. New methods greatly expand archaeology's power to register just such diversity, in terms of the origin and movement of inhabitants or the flows and processing of materials.

This conference asked how we may reframe comparative archaeological studies of early urban societies to focus on the evolution of heterogeneity. And together, participants explored what are the data and methodologies that can allow robust comparisons in this respect between places and societies; and what are the models that can frame an understanding of patterns, trajectories, and causation.

Comparing Urban Heterogeneity
 27–28 June 2022
 Organisers:
 Rubina Raja and Søren M. Sindbæk
 Centre for Urban Network Evolutions (UrbNet), Aarhus University



UrbNet Aarhus University

Book of Abstracts
 from the conference
 with photos of:

1. Ribe (photo: Museum of Southwest Jutland)
2. Rome (photo: GeoImage, Astrium Services)
3. Machkhomeri Hill (photo: Davit Naskidashvili)
4. Doliche (photo: Michael Blömer)
5. Great Zimbabwe (photo: Federica Sulas)
6. Jerash (photo: Rubina Raja)

Moving on to Tenured Positions

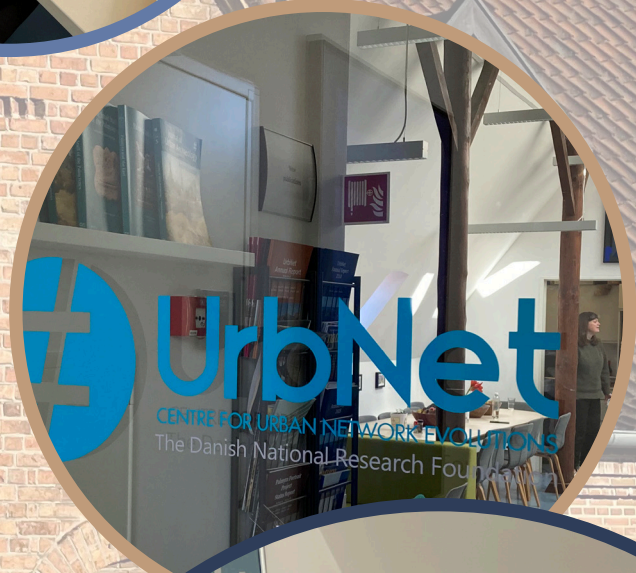
Four former UrbNet employees left UrbNet in 2022 to assume tenured positions at high-profile research institutions.

Bente Philippsen is now Associate Professor of Radiocarbon Dating at the Norwegian University of Science and Technology (NTNU). She leads the National Laboratory for Age Determination, which consists of groups using radiocarbon dating and dendrochronology. The laboratory is based at the NTNU's Natural and Cultural History Museum. Bente will focus on research, method development, supervision, and collaborations in radiocarbon dating, dendrochronology, and stable isotope analyses.

Irene Bavuso has taken up a tenured assistant professorship at Utrecht University, where she researches post-Roman trade and production, and their link with the growth of socio-economic differentiation, especially in early Anglo-Saxon England and Merovingian France.

Emanuele Ettore Intagliata is now a tenure-track Assistant Professor at the Università degli Studi di Milano, teaching medieval archaeology. He continues to work on the evolution of frontier communities in the late antique Near East, with a specific focus on western Georgia and eastern Turkey. He also continues research on urban networks and urban circularity in Antiquity in close collaboration with people at UrbNet.

Ioana Andrada Dumitru has taken up a position as Associate Lecturer in Archaeology at the University of Sydney. Here she will research questions at the nexus of climate-environment-society in Arabia, North, and East Africa. She will also continue modelling interactions between ancient communities across the western Indian Ocean world and their natural environments, investigating their responses to extreme climatic and environmental stressors.



Work, breaks, and the lovely surroundings at Moesgaard (photos: Christina Levisen, Mie Egelund Lind, Julia Steding, and Eva Mortensen).

Events

Organization of Conferences and Workshops

Some of these events were co-organized with external partners, but for the purpose of this report, only the relevant UrbNet employee(s) is/are listed.

Conference: *Shaping Archaeological Archives: Best Practices for the Dissemination of Knowledge from Digital Resources*, Zoom (online)
10–11 February 2022
organized by Amy Christine Miranda & Rubina Raja

Conference: *Emporia, Trade and Cultural Change in Early Medieval Europe*, Aarhus University, Denmark
21 April 2022
organized by Søren M. Sindbæk

Award ceremony: *Women of the Year*, Carlsberg Academy, Copenhagen, Denmark
6 May 2022
organized by Rubina Raja

Symposium: *39th Interdisciplinary Viking Symposium: Ritual Performance in the Viking Age*, Aarhus University, Denmark
20 May 2022
organized by Sarah Croix

Conference: *Between the Lines: Towards a Recontextualized Archaeology*, Moesgaard Museum, Aarhus, Denmark
13–14 June 2022
organized by Amy Christine Miranda & Rubina Raja

Session: "Moving Jobs: Occupational Identity and Motility in the Early Middle Ages (6th–19th c.)" [Muoversi per lavoro: identità occupazionale e motilità nell'alto Medioevo (secoli VI–X)], conference: *Il Convegno SISMED della medievistica italiana*, Matera, Italy
13–16 June 2022
organized by Irene Bavuso

Conference: *Sorte Muld Revisited: Explorations and Research 1985–2021 at an Iron Age Central Place*, Bornholms Museum, Rønne, Denmark
24 June 2022
organized by Søren M. Sindbæk

Conference: *Comparing Urban Heterogeneity*, The Royal Danish Academy of Sciences and Letters, Copenhagen, Denmark
27–28 June 2022
organized by Rubina Raja & Søren M. Sindbæk

Workshop: *Cross-Cultural and Cross-Latitudinal Responses to Extreme and Unpredictable Weather and Climate Events in the Ancient World*, UrbNet, Aarhus University, Denmark
30 June 2022
organized by Ioana Andrada Dumitru, Rubina Raja & Søren M. Sindbæk

Session: "Across the Maelstrom: Searching for New Departures in the Archaeology of the Viking Age", conference: *The 28th EAA Annual Meeting*, Budapest, Hungary
1 September 2022
organized by Søren M. Sindbæk

Conference: *Invisible Circularity from the Roman Period to the Middle Ages*, Aarhus University, Denmark
7–8 September 2022
organized by Irene Bavuso, Guido Furlan & Julia Steding

Workshop: *Workshop på Museum Odense*, Museum Odense, Denmark
8–9 September 2022
organized by Kirstine Haase

Conference: *ODM's Kultur-, Naturhistorisk og Kunstfagligt Orienteringsmøde 2022*, Munkebjerg Hotel, Vejle, Denmark
14–15 November 2022
organized by Kirstine Haase

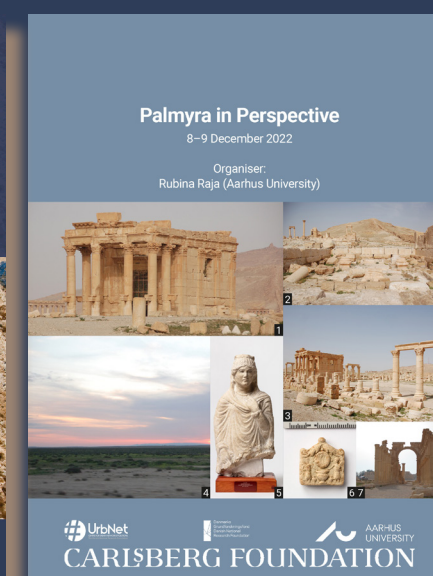
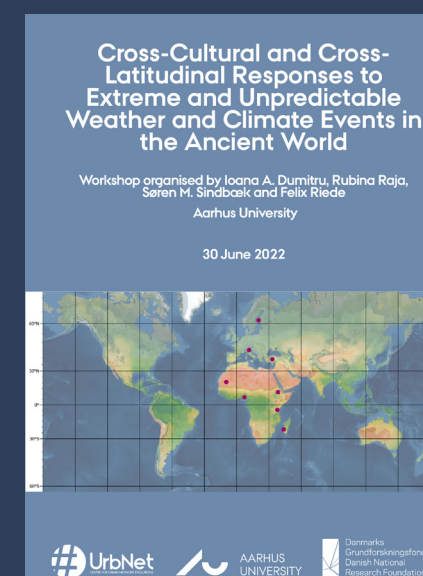
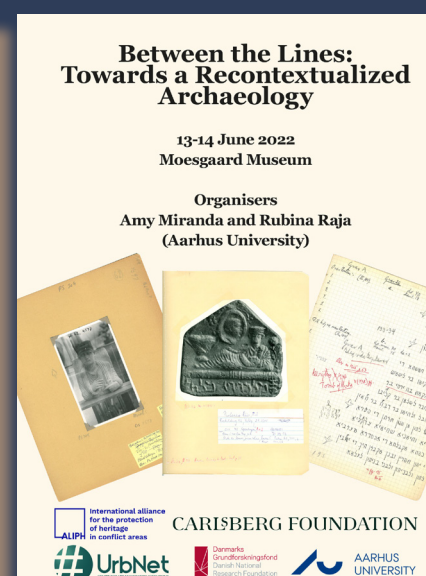
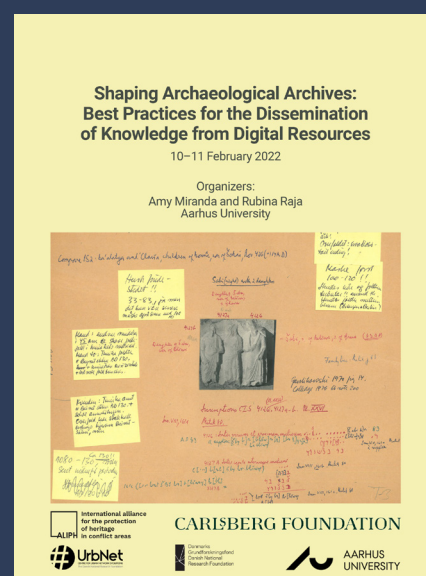
Session: "Network Thinking and Methods in Near Eastern Research", workshop: *ASOR Annual Meeting*, Boston, MA, USA
16–19 November
organized by Ioana Andrada Dumitru

Conference: *Agent-Based Modelling for Archaeologists*, Aarhus Institute of Advanced Studies & Moesgård Campus at Aarhus University, Aarhus, Denmark
17 November 2022
organized by Iza Romanowska

Workshop: *Roads, Economy, and Travel in the Roman World: Where Are We Now?*, Institut d'Estudis Catalans, Barcelona, Spain
24–25 November 2022
organized by Adam Pažout & Tom Brughmans

Conference: *Palmyra in Perspective*, The Royal Danish Academy of Sciences and Letters, Copenhagen, Denmark
8–9 December 2022
organized by Rubina Raja

Session: "Revolutions in the Archaeology of Early Urbanism: Conceptual and Methodological Innovation", conference: *43rd Theoretical Archaeology Group (TAG)*, University of Edinburgh, United Kingdom
17 December 2022
organized by Søren M. Sindbæk





Invited Talks

Some of these papers were co-authored/-presented with external partners, but for the purpose of this report, only the relevant UrbNet employee(s) is/are listed.

Amy Christine Miranda & Rubina Raja

“Making Archives Accessible: The Ingholt Archive as a Case Study in Approaching Digital Colonialism”, online conference: *Shaping Archaeological Archives: Best Practices for the Dissemination of Knowledge from Digital Resources*, UrbNet, Aarhus University, virtual lecture **10 February 2022**

Rhiannon Garth Jones

“Finding the Potential in Problems – the Digitalisation of Archives”, online conference: *Shaping Archaeological Archives: Best Practices for the Dissemination of Knowledge from Digital Resources*, UrbNet, Aarhus University, Denmark **11 February 2022**

Rubina Raja & Julia Steding

“New Light on the Southwest Necropolis in Palmyra: The Excavation Diaries of Harald Ingholt”, online conference: *Shaping Archaeological Archives: Best Practices for the Dissemination of Knowledge from Digital Resources*, UrbNet, Aarhus University **11 February 2022**

Iza Romanowska & Tom Brughmans

“FORVM the Board Game: Making our Computational Modelling Research on the Roman Economy Playable”, workshop: *Coding Medieval Worlds, Workshop for Historians and Game Developers* **20 February 2022**

Søren M. Sindbæk

“Introduktion til Vikingetiden”, Folkeuniversitetet, Emdrup, Denmark **22 Februar 2022**

Rubina Raja

“Leaving the Comfort Zone: Trajectories between Interdisciplinarity and Monodisciplinarity”, conference: *Rituals and Resonances of Interdisciplinary Research*, Spring Conference of the IGS “Resonant Self-World Relations”, Max-Weber-Kolleg, University of Erfurt, Eisenach, Germany **23 February 2022**

Rubina Raja

“Cæsar og hans forum: Der var engang en ‘konge’”, symposium: *Symposium om monarkier, i anledning af H.M. Dronning Margrethe II’s 50-års regeringsjubilæum*, The Royal Danish Academy of Sciences and Letters, Copenhagen, Denmark **24 February 2022**

Tom Brughmans

“Archaeological Network Research, Illustrated through a Study on Visual Signalling Networks of Medieval Strongholds in Garhwal Himalaya, India”, ITU, Copenhagen, Denmark **2 March 2022**

Rubina Raja

“Dilemmas in Digital Humanities: Case Studies from Palmyra”, Department of Classics and Art History, University of California, Berkeley, USA **10 March 2022**

Kirstine Haase

“Jagten på den forsvundne kirke”, online lecture, Museum Odense, Denmark **23 March 2022**

Rubina Raja

“Archive Archaeology and Decolonisation: The Case of the Ingholt Archive”, Department of History of Art, University of California, Berkeley, USA **30 March 2022**

Søren M. Sindbæk

“Brudstykker af en offerfest fra vikingetiden”, Jysk Arkæologisk Selskab, Moesgaard Museum, Aarhus, Denmark **30 March 2022**

Sarah Croix

“At Home with the Artisans: Craft Collaborations and Household Relations at the Emporium Ribe”, *Viking Studies Talk*, University of York, United Kingdom **1 April 2022**

Rubina Raja

“Staying at Home or Taking Away: Palmyrene Priestly Iconography as Expressions of Local Traditions”, conference: *Dura-Europos: Past, Present, Future*, Yale University, USA **1 April 2022**

Tom Brughmans

“Does Archaeology Need Network Science? Illustrated through Medieval Visibility Networks in the Himalayas and Roman Economic Networks”, conference: *CREAB*, Université libre de Bruxelles, Belgium **6 April 2022**

Sarah Croix

“Reconciling Permanency and Seasonality in the Early Medieval Emporia: The Temporality of Craft Production and the Question of the ‘Itinerant’ Artisan in Viking-Age Ribe”, conference: *Emporia, Trade and Cultural Change in Early Medieval Europe*, Aarhus University, Denmark **21 April 2022**

Søren M. Sindbæk

“Emporia, Trade and Cultural Change in Early Medieval Europe”, conference: *Emporia, Trade and Cultural Change in Early Medieval Europe*, UrbNet, Aarhus University, Denmark **21 April 2022**

Rubina Raja

“Urban Archaeology in Central Rome: The Danish-Italian Excavations on Caesar’s Forum”, seminar: *1st ARSID seminar*, Italian Cultural Institute of Copenhagen, Denmark **21 April 2022**

Kirstine Haase

Kortlægning af middelalderbyens kulturlag – trusler og potentiale, *Middelaldertræf - MAF*, Moesgaard Museum, Denmark **22 April 2022**

Rubina Raja

“Levantine Entanglements: Lines of Enquiry: A Response from Current Research”, book launch seminar of the edited volume *Levantine Entanglements*, The Theological Faculty, Oslo University, Norway **26 April 2022**

Rubina Raja

“Urban Archaeology: Prospects and Challenges”, conference: *Two Worlds: Research Innovation & Commercial Success in Archaeology*, Cambridge Archaeological Unit, University of Cambridge, United Kingdom **29 April 2022**

Rubina Raja

“Women in Academia: Challenges and Potentials”, award ceremony: *Women of the Year, Denmark: 2022*, Carlsberg Academy, Copenhagen, Denmark **6 May 2022**

Irene Bavuso

“Sfruttamento minerario e terre regie nell’Inghilterra postromana (secoli VI-VIII)”, *I beni fiscali e la storia economica medievale*, Università di Bologna, Italy **6–7 May 2022**

Rubina Raja

“The Archaeology of the Forum Iulium: Results from the New Danish-Italian Excavations”, workshop: *The Forum Romanum: Architecture, Space and Politics*, Department of archaeology and ancient history, University of Lund, Sweden **13 May 2022**

Álvaro Rafael de Balbin-Bueno

“Shining a Light on a ‘Dark Age’ Landscape: Revising and Reinterpreting Late-Antique (4th–8th c. AD) Exchange Networks along the Atlantic Façade”, UrbNet, Aarhus University, Denmark **16 May 2022**

Tom Brughmans

“MINERVA: Ceramic Data Analysis and Roman Road Data Collection”, Zuse Institut Berlin, Germany **18 May 2022**

Sarah Croix

“The Hand that Holds the Knife: Ritual Killings, Amulets and Dead Horses”, congress: *39th Interdisciplinary Viking Symposium: Ritual Performance in the Viking Age*, Aarhus University, Denmark **20 May 2022**

Ioana Andrada Dumitru

“Not on the Edges: Insights from Aksumite Archaeology on the Limits of Imperial Control in Antiquity”, seminar: *Near Eastern Seminar Series*, Univeristy of Sydney, Australia **23 May 2022**

Trine Hass

“Ole Worm om Jul og Julius Cæsar”, Societas Latina Daniae, Museum of Ancient Art, Aarhus, Denmark **24 May 2022**

Søren M. Sindbæk

“Time Marks”, Aarhus University, Denmark **29 May 2022**

Rowan English

“Exploring Elephant Ivory Bag Rings in Early Medieval Graves: A 5th Century Phenomenon?”, conference: *International Medieval Congress*, session: *Breaking Down Disciplinary Borders: Connecting Historical and Archaeological Research, IV: Investigations into Medieval Ivory*, University of Leeds, United Kingdom **5 June 2022**

Tom Brughmans, Olympia Bobou & Rubina Raja

“A Kinship Network Analysis of Palmyrene Genealogies”, workshop: *Religious Networks in Antiquity*, University of Bergen, Norway **8 June 2022**

Rubina Raja

“Palmyrene Networks: Portrait Traditions as Reflection of Inter-Regional Connections and Exchange Patterns”, workshop: *Religious Networks in Antiquity*, University of Bergen, Norway **8 June 2022**

Iza Romanowska

“ABM as a Tool for Interdisciplinary Research”, workshop: *Stochastic Modeling of Complex Social Systems*, Berlin, Germany **8 June 2022**

Ioana Andrada Dumitru

“Geospatial Big Data and Cross-Disciplinary Research in the Humanities: Climate-Environment-Society Interactions on the Swahili Coast of East Africa”, the Danish National Research Foundation’s annual meeting 2022: *FAIR Data and the Effects on Research of the Progression in Digitization and Quantitative Data Analysis*, UrbNet, Aarhus University, Denmark **10 June 2022**

Rhiannon Garth Jones

“Changing Perspectives: The Visual Language of Power in ‘Abbasid Imperial Cities: 754–861 CE’”, the Danish National Research Foundation’s annual meeting 2022: *FAIR Data and the Effects on Research of the Progression in Digitization and Quantitative Data Analysis*, UrbNet, Aarhus University, Denmark **10 June 2022**

Trine Hass

“Vergil’s First Eclogue and Heiberg’s Elverhøi”, seminar: *Corpus Christi College Classics Centre Lunch Seminars*, University of Oxford, United Kingdom **14 June 2022**

**Søren M. Sindbæk**

“There and Back Again: Old and New Viking-Age Town Excavations from a Scandinavian Perspective”, workshop: *AHRC York-Dublin Axis Project Workshop 2, New Evidence and New Approaches*, University of York, United Kingdom
17 June 2022

Søren M. Sindbæk

“Archaeological Perspectives on Social Trust and Trade”, symposium: *Why is Trust so High in the Border Region between Germany and Denmark? Exploring the Deep History of Social Trust and Deriving Lessons for the Future*, Kiel University, Germany
22–23 June 2022

Søren M. Sindbæk & Rubina Raja

“‘Large, Dense, and ... Heterogeneous’: A Comparative Approach to Urban Heterogeneity”, conference: *Comparing Urban Heterogeneity*, The Royal Danish Academy of Sciences and Letters, Copenhagen, Denmark
27–28 June 2022

Ioana Andrada Dumitru, Rubina Raja, Søren M. Sindbæk, Søren M. Kristiansen & Jesper Olsen

“Climatic Shifts and Societal Reorganizations on the Swahili Coast of East Africa”, workshop: *Cross-Cultural and Cross-Latitudinal Responses to Extreme and Unpredictable Weather and Climate Events in the Ancient World*, UrbNet, Aarhus University, Denmark
30 June 2022

Irene Bavuso

“Control of Resources in Northwestern Europe: Perspectives from Merovingian France”, University of Tübingen, Germany
18 July 2022

Søren M. Sindbæk

“Ribe and the Making of the Viking Age”, congress: *19th Viking Congress*, Liverpool, United Kingdom
23–29 July 2022

Sarah Croix

“People, Time and Space in Viking-Age Ribe”, congress: *19th Viking Congress*, Liverpool, United Kingdom
23–29 August 2022

Guido Furlan

“Urban Economic Networks in a Period of Change: Issues of Archaeological Representativeness”, conference: *The 28th EAA Annual Meeting*, Budapest, Hungary
31 August – 3 September 2022

Søren M. Sindbæk

“Across the Maelstrom: Searching for New Departures in the Archaeology of the Viking Age”, conference: *The 28th EAA Annual Meeting*, Budapest, Hungary
1 September 2022

Søren M. Sindbæk

“Craft Specialization in Worked Antler and Bone in Urban Ribe as Seen in Workshops from Different areas between 700–1300 AD”, conference: *The 28th EAA Annual Meeting*, Budapest, Hungary
2 September 2022

Cristina Boschetti

“From Decoration to Magic: Examples of Glass Reuse from the Roman Period to the Early Middle Ages”, conference: *Invisible Circularity from the Roman Period to the Middle Ages*, Moesgaard Museum, Aarhus, Denmark
7 September 2022

Sarah Croix

“Two Excavation Campaigns at Viking-Age Erritsø”, *Back from the Field Seminar*, Aarhus University
7 September 2022

Iza Romanowska

“Agent-Based Modelling for Archaeologists”, conference: *CAADK*, Roskilde Museum, Roskilde, Denmark
7 September 2022

Irene Bavuso

“Laws, Letters and Graves: Organisation of Scavenging in Ostrogothic Italy”, conference: *Invisible Circularity from the Roman Period to the Middle Ages*, Moesgaard Museum, Aarhus, Denmark
7–8 September 2022

Guido Furlan

“People behind Processes: Notes on the Role of Junk Dealers in Past Urban Economies”, conference: *Invisible Circularity from the Roman Period to the Middle Ages*, Moesgaard Museum, Aarhus, Denmark
7–8 September 2022

Rubina Raja

“Like Comparing Apples and Oranges? Or What May We Learn from Synchronic Comparisons of our Urban Landscapes in the Roman Imperial Period?”, conference: *Cityscapes and Urban Culture: Contextualizing Pompeii in the Roman World*, Pompeii, Italy
23 September 2022

Rhiannon Garth Jones

“The Visual Language of Empires: ‘Abbasid Use of the Past to Promote the Present (and Future)’, UrbNet, Aarhus University, Denmark
27 September 2022

Søren M. Sindbæk

“Cross Disciplinary and Cross Sectoral Peer to Peer Networking: How to Build and Utilize Networks”, retreat: *DNRF Networking Retreat for Young Academic Leaders*, Snekkersten, Denmark
27 September 2022

Sarah Croix

“Textile Manufacture in Viking-Age Ribe between *réseau opératoire*, Gig Economy, and Household Industry”, seminar: *Centre for Textile Research seminar*, Copenhagen
28 September 2022

Iza Romanowska

“The Lure of Artificial Worlds: What Can ABM Do for You”, conference: *Digital Models in Humanities Research*, H.C. Andersen Hotel, Odense, Denmark
3 October 2022

Adam Pažout & Tom Brughmans

“Challenges and Opportunities of Creating a Digital Dataset of Roman Roads”, UrbNet, Aarhus University, Denmark
4 October 2022

Søren M. Sindbæk

“The so-called Viking Age: Archaeological Chronology and Historical Narratives from the Three-Period System to High-Definition Excavations. A View from Ribe”, conference: *Vikings! – Vikings? Towards a Responsible Use of the Term ‘Viking’*, Schloss Gottorf, Schleswig, Germany
4–6 October 2022

Rubina Raja

“Multikulturalitet i en oaseby: sprog og kultur i Palmyra i den syriske ørken”, *Filologisk-Historisk Samfund*, Søndre Campus, Copenhagen, Denmark
5 October 2022

Tom Brughmans

“Networking with the Romans”, conference: *Computing the Past*, Plzeň, Czech Republic
6 October 2022

Sine Grove Saxkjær

“Considerations on Teanum Ware from Loc. Cappella Marcella (Castrocielo, FR)”, conference: *Technology, Crafting and Artisanal Networks in the Greek and Roman World: Interdisciplinary Approaches to the Study of Ceramics*, Campus Luigi Einaudi, University of Torino, Italy
6 October 2022

Ioana Andrada Dumitru

“Urban-Environment Interaction in East Africa: Using Multi-Criteria Metrics of Coastal Productivity for Reef-to-Ridge-to-Hinterland Mapping on the Swahili Coast”, UrbNet, Aarhus University, Denmark
11 October 2022

Søren M. Sindbæk

“Byernes mange lag. Nye tilgange til vikingetidens knudepunkter”, conference: *Ledetråde til fremtidens vikingetidsforskning i Danmark*, Museum Sydøstdanmark, Holmegaard Værk, Denmark
13 October 2022

David Laguna Palma

“Landscapes, Networks, and Society along the Ancient Libyan Sea: the PERAIA project”, UrbNet, Aarhus University, Denmark
25 October 2022

Søren M. Sindbæk

“Kvinden med sværdet. Et amulet-værksted fra Ribe og vikingetiden”, Harja, Odense, Denmark
26 October 2022

Søren M. Sindbæk

“Viking Age Ribe and its Networks”, conference: *70 Years of Polish Archaeological Research in Wolin, 6th Wolin Medieval Meetings*, Wollin, Poland
26–28 October

Tom Brughmans

“Simulating Roman Economies”, seminar: *Economic History*, La Sapienza University of Rome, Italy
27 October 2022

Rubina Raja

“Revisiting the Palmyrene Pantheon: Methodological Consideration on the Many and the Few. The Nature of the Evidence”, conference: *What’s in a Divine Name?*, Maison de la recherche, Toulouse, France
27 October 2022

Sarah Croix

“The Pace of Social Change: Status and Perspectives on a Pilot Project”, UrbNet, Aarhus University, Denmark,
1 November 2022

Kirstine Haase

“Urban Deposit Models”, UrbNet, Aarhus University, Denmark
8 November 2022

Guido Furlan

“Everything Was Rubbish, and All Rubbish Was Wonderful”, UrbNet, Aarhus University, Denmark
15 November 2022

Ioana Andrada Dumitru

“Confronting Uncertainty in the Archaeological Record: A Network Analysis Perspective”, conference: *2022 ASOR Meeting*, Boston, MA, USA
16–19 November 2022

Søren M. Sindbæk

“A Ritual Assembly on the Workshop Floor: From High-Definition Excavations to 3D Image Reconstruction of an Amulet Ensemble from Viking-Age Ribe”, Bergen, Norway
18 November 2022

Derek James Parrott

“Casting a New Light: Viking Age Brooches and Stylistic Choice”, UrbNet, Aarhus University, Denmark
22 November 2022.

Søren M. Sindbæk

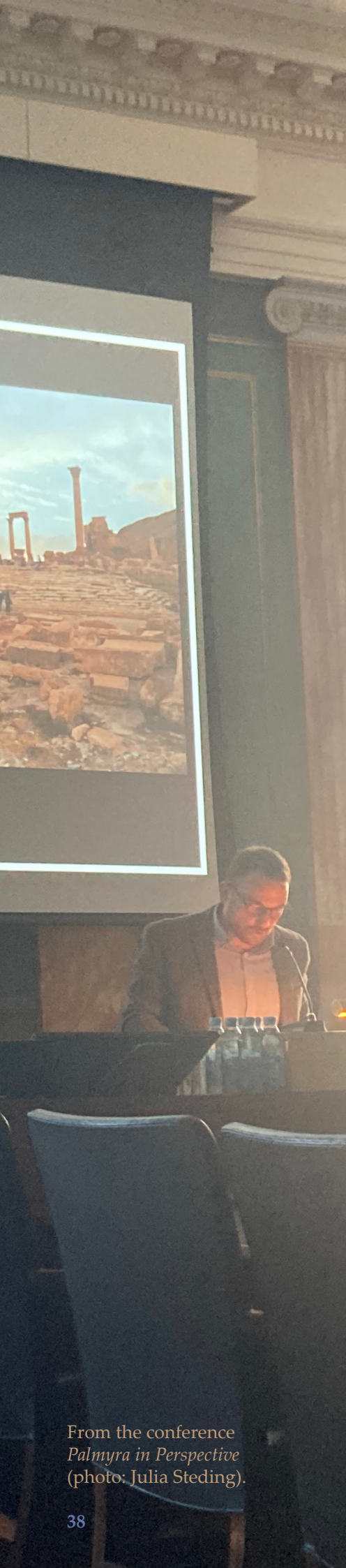
“Fra stamme til stat. De lange skygger af en arkæologisk skabelsesberetning”, seminar: *Kongemagt eller -afmagt – magtforhold i tidlig middelalder*, Aarhus University, Denmark
22 November 2022

Olympia Bobou

“Between Image and Practice: Two Portraits from the Tomb of Hairan”, UrbNet, Aarhus University, Denmark
29 November 2022

Rubina Raja

“Arkæologisk og historisk forskningsetik: hvem ejer fortiden?”, conference: *Forskningsintegritet og etik*, UrbNet, Aarhus, Denmark
30 November 2022



From the conference *Palmyra in Perspective* (photo: Julia Steding).

Rowan English

"Form and Function: The Materiality of Ivory in the 5th-and 6th-Century North Sea Zone", PhD course: *Joint PhD Colloquium between Classical Archaeology (University of Kiel) and UrbNet (Aarhus University)*, UrbNet, Aarhus University, Denmark
1 December 2022

Guido Furlan

"Lo smaltimento dei rifiuti nelle città romane", online course: *Urbanistica del mondo classico*
1 December 2022

Rhiannon Garth Jones

"Early 'Abbasid Use of Graeco-Roman Traditions to Project Imperial Authority and Power", conference: *Politics of Pasts and Futures in (Post-)Imperial Contexts, First Annual Conference of the GRK 2571 'Empires'*, University of Freiburg, Germany
1 December 2022

Derek James Parrot

"Model Minutia: Tracing Non-Ferrous Metal-Casting Models from Viking-Age Ribe through Ceramic Casting Moulds", PhD course: *Joint PhD Colloquium between Classical Archaeology (University of Kiel) and UrbNet (Aarhus University)*, UrbNet, Aarhus University, Denmark
1 December 2022

Guido Furlan

"L'economia del riuso (e non solo) nelle città romane. Aspetti di un'economia circolare?", online course: *Urbanistica del mondo classico*
2 December 2022

Rowan English

"How Global? Do Long-Distance Trade Goods Create a False 'Global Middle Ages'", UrbNet, Aarhus University, Denmark
6 December 2022

Rubina Raja

"Perspectives on Palmyra", conference: *Palmyra in Perspective*, The Royal Danish Academy of Science and Letters, Copenhagen, Denmark
8 December 2022

Olympia Bobou, Rubina Raja & Julia Steding

"Using Legacy Data: Harald Ingholt's Archive and Excavation Diaries", conference: *Palmyra in Perspective*, The Royal Danish Academy of Science and Letters, Copenhagen, Denmark
8 December 2022

Rubina Raja

"Bel in Perspective: Selective Destructions, Selective Memories", conference: *Palmyra in Perspective*, The Royal Danish Academy of Science and Letters, Copenhagen, Denmark
8 December 2022

Iza Romanowska, Joan Campmany Jiménez, Katerína Mokráňová & Rubina Raja

"Systematic Reconstruction of the Population Dynamics in Roman Palmyra Using Formal Computational Modelling Methods", conference: *Palmyra in Perspective*, The Royal Danish Academy of Sciences and Letters, Copenhagen, Denmark
9 December 2022

Rowan English

"How Global? Do Long-Distance Trade Goods Create a False 'Global Middle Ages'?", conference: *43rd Theoretical Archaeology Group (TAG)*, session: *An Archaeology of Global Medieval Life*, University of Edinburgh, United Kingdom
15 December 2022

Kirstine Haase

"Understanding Religion and Urban Development through Depositional Patterns: An Example of 'Big Data' Analysis from Medieval Odense, Denmark", conference: *43rd Theoretical Archaeology Group (TAG)*, University of Edinburgh, United Kingdom
15 December 2022

Søren M. Sindbæk

"The Revolutionary Strength of Weak Ties", conference: *43rd Theoretical Archaeology Group (TAG)*, University of Edinburgh, United Kingdom
17 December 2022

PhD Courses

Some of these events were co-organized with external partners, but for the purpose of this report, only the relevant UrbNet employee(s) is/are listed.

Finding the Untold Stories: Invisible People of the Past, UrbNet, Aarhus University, Denmark
4 May 2022
organized by Irene Bavuso, Guido Furlan & Julia Steding

Cross-Cultural and Cross-Latitudinal Responses to Extreme and Unpredictable Weather and Climate Events in the Ancient World, UrbNet, Aarhus University, Denmark
1 July 2022
organized by Ioana Andrada Dumitru

Exploring Reuse Practices in Premodern Economies, UrbNet, Aarhus University, Denmark
9 September 2022
organized by Irene Bavuso, Guido Furlan & Julia Steding

Joint PhD Colloquium between Classical Archaeology (Kiel university) and UrbNet (Aarhus University), UrbNet, Aarhus University, Denmark
1 December 2022
organized by Olympia Bobou

PhD Defence

Mahir Hrnjić

Relinking Networks of Silver: The Archaeometry of Viking Age Ring Ingots and Early Medieval Islamic Coinage, PhD defence, Aarhus University, Aarhus, Denmark (virtual)
16 March 2022

Other Events

UrbNet retreat on Samsø
7–8 April 2022

UrbNet's archaeological trip to northern Jutland
20 June 2022

UrbNet retreat in Silkeborg and trip to Ribe
7–8 November 2022

UrbNet trip to northern Jutland, with a pit stop at the Viking museum Fyrkat (photo: Adam Pažout).



Public Outreach

Some of these public outreach initiatives were made in collaboration with external partners, but for the purpose of this report, only the relevant UrbNet employee(s) is/are listed.

Rubina Raja
The PastCast Episode #2 – Facing the Palmyrenes: Exploring Life and Death in a Desert City
The PastCast
19 January 2022

Rubina Raja
Stjerneforsker: Vi har været agile og omstillingsparate, men det er gået alt, alt for vidt med de konstante krav om forandring, udflytning og alt muligt andet
Politiken
24 February 2022

Trine A. Hass
Kan det være retfærdigt at slå en tyrann ihjel?
Politiken Historie
7 March 2022

Søren M. Sindbæk
‘Usynlig’ vikingerytter fundet af danske arkæologer
Videnskab.dk
6 April 2022

Sarah Croix
The Vikings I
Undeceptions
18 April 2022

Søren M. Sindbæk
Vikings Shipped Walrus Ivory from Greenland to Kyiv, Ancient Skulls Show
Science.org
22 April 2022

Sarah Croix
The Vikings II
Undeceptions
25 April 2022

Jan Kindberg Jacobsen
Danske arkæologer udgraver Roms skjulte fortid – Klassisk arkæolog
Jan Kindberg Jacobsen
24 spørgsmål rejser ud
16 May 2022

Jan Kindberg Jacobsen
Børnegrave, luksusglas og kloaker gravet frem af jorden under Cæsars Forum i Rom
Carlsbergfondet
18 May 2022

Jan Kindberg Jacobsen
Cæsar – alle diktatorers fader – Klassisk arkæolog Jan Kindberg Jacobsen
24 spørgsmål til professoren
23 May 2022

Current World Archaeology

In 2022 Rubina Raja and Søren M. Sindbæk ventured into leaving a significant UrbNet imprint on outreach in the international world through a recurring column in the world's most read archaeology magazine, *Current World Archaeology*. In this column, which appears in every issue of the magazine, UrbNet's director and deputy director tackle a wide range of issues connected to ancient and modern urban societies, archaeology, history, and cultural heritage in a global perspective.

In 2022 the following features appeared:

Raja, R. & Sindbæk, S. M. (2022). "Evolution in the Air: The Urban Conundrum", *Current World Archaeology* 115, 158–159.

Raja, R. & Sindbæk, S. M. (2022). "Small is Beautiful: Exploring the Drawbacks of Megacities", *Current World Archaeology* 116, 58–59.



Jan Kindberg Jacobsen
Rom blev bygget på personlighed – Klassisk arkæolog Jan Kindberg Jacobsen
24 spørgsmål til professoren
23 May 2022

Olympia Boubou, Rubina Raja & Julia Steding
Excavation Archives: Narratives from 20th-Century Palmyra
Online exhibition, UrbNet
13 June 2022

Sarah Croix
– Jeg holdt vejret, mens min hånd rystede, og adrenalinen pumpede: I Erritsøs mudder gjorde Eskild sit første fund
Frederecia Dagblad
14 June 2022

Søren M. Kristiansen
Politiets kriminalteknikere hjælper arkæologer på 5.000 år gammel offerplads: 'Blod er lidt en våd drøm'
DR.dk
20 June 2022

Søren M. Sindbæk
Vikingerne By skriver Ribes historie om
Ugeavisen Ribe
29 June 2022

Søren M. Sindbæk
Ny viden om vikingetidens netværkssamfund i Ribe formidles i ny bog og udstilling
Carlsbergfondet
30 June 2022

Rubina Raja
Noah's Ark Mosaic Puts Ancient Jordan Synagogue on Tourist Map
The Circuit
28 August 2022

Rubina Raja
Hvordan kan vi blive bedre til at genbruge vores materialer?
DNRF's LinkedIn
23 September 2022

Rubina Raja & Søren M. Sindbæk
Evolution in the Air: The Urban Conundrum
Current World Archaeology
29 September 2022

Søren M. Sindbæk
Ribe-vikinger omsmeltede romerske mosaiksten til glasperler
Videnskab.dk
30 September 2022

Søren M. Sindbæk
Upcycling in the Past: Viking Beadmakers' Secrets Revealed
Phys.org
3 October 2022

Søren M. Sindbæk
How Did Vikings Make Glass Beads?
Archaeology Magazine
5 October 2022

Søren M. Sindbæk
Extraordinary Origin of Viking Glass Beads in Glittering Roman Mosaics Uncovered
History First
6 October 2022

Søren M. Sindbæk
Les fabricants de perles vikings avaient une technique plus sophistiquée qu'on ne pensait pour recycler le verre
GEO
6 October 2022

Rubina Raja & Iza Romanowska
Ancient Palmyra's Catastrophic Fall Is Terrifying Premonition of Our Future
Newsweek
10 October 2022

Søren M. Sindbæk
Danmarks ældste by er ældre end vi troede
Radio4, "Kraniebrud"
12 October 2022

Søren M. Sindbæk
Nordens ældste by har fået ny historie
Vid&Sans
20 October 2022

Sarah Croix
God of War Ragnarok
TV2 Go'Morgen Danmark
13 November 2022

Rubina Raja & Søren M. Sindbæk
Small is Beautiful: Exploring the Drawback of Megacities
Current World Archaeology
17 November 2022

Søren M. Sindbæk
Perlemagere i vikingetiden var eksperter i genbrug
Kristeligt Dagblad
20 November 2022

Kirstine Haase
Skelettet på Albani Kirkegård: En genganger iblandt os?
Vores Tid Obscuritas Podcast
8 December 2022

Søren M. Sindbæk
Søren Sindbæk leder efter spor af fortidens globale netværk i jordlagene under Nordens ældste by Ribe
Carlsbergfondet
11 December 2022

Søren M. Sindbæk
I Ribe har arkæologerne fundet vikingetidens vugge
Carlsbergfondet, Månedens Forsker
#12 2022
12 December 2022





Visitors and Collaborators

Visitors and Virtual Lecture Participants

Ahmed Shams
(Durham University)
10–11 February 2022

Alessio Paonessa
(Deutsches Archäologisches Institut)
10–11 February 2022

Alexander Nagel
(State University of New York)
10–11 February 2022

Alina Kozlovski
(University of Sydney)
10–11 February 2022

Allison Kidd
(College of Charleston)
10–11 February 2022

Amalia Kakissis
(British School at Athens)
10–11 February 2022

Anaa Somfai
(Central European University)
10–11 February 2022

Andrew Shapland
(Ashmolean Museum)
10–11 February 2022

Angela Brosco
(Independent researcher)
10–11 February 2022

Ann Andersson
(University of Copenhagen)
10–11 February 2022

Anne Chen
(Yale University)
10–11 February 2022

Anne Haslund Hansen
(National Museum of Denmark)
10–11 February 2022

Catherine Keane
(Ludwig Maximilian University of Munich)
10–11 February 2022

Cristiano Moscatelli
(Ruhr University Bochum)
10–11 February 2022

Christie Pavey
(Royal Holloway, University of London)
10–11 February 2022

Christina Boettcher
(MOVA)
10–11 February 2022

Christos Tsirogiannis
(Aarhus University)
10–11 February 2022

Claire Heseltine
(King’s College London)
10–11 February 2022

Claire Millington
(King’s College London)
10–11 February 2022

Daphne Martin
(University of Cambridge)
10–11 February 2022

Erica Scarpa
(Cultore della Materia)
10–11 February 2022

Erika Cappelletto
(Landesamt für Denkmalpflege)
10–11 February 2022

Fabian Sarga
(The Free University of Berlin)
10–11 February 2022

Felicity Crowe
(British School at Athens)
10–11 February 2022

Fiona Greenland
(University of Virginia)
10–11 February 2022

Hanan Mullins
(Lebanese University)
10–11 February 2022

Helen Malko
(American Center of Research)
10–11 February 2022

Hester Kamstra
(University of Groningen)
10–11 February 2022

Hiba Alkhalaf
(King’s College London)
10–11 February 2022

Ilaria Bucci
(Birkbeck, University of London)
10–11 February 2022

Indu Prasad
(Birkbeck, University of London)
10–11 February 2022

Ioulia Tzonou
(American School of Classical Studies at Athens)
10–11 February 2022

Jasmin Payne
(University of Oxford)
10–11 February 2022

Jeff Kramer
(University of Cincinnati)
10–11 February 2022

Jen Baird
(Birkbeck, University of London)
10–11 February 2022

Jessica Holland
(Council for British Research in the Levant)
10–11 February 2022

Jessie Pons
(Ruhr University Bochum)
10–11 February 2022

John Pouncett
(University of Oxford)
10–11 February 2022

Jon Frey
(Michigan State University)
10–11 February 2022

Josef Bloomfield
(University of Oxford)
10–11 February 2022

Judith Toms
(independent scholar)
10–11 February 2022

Julia Gearhart
(Princeton University)
10–11 February 2022

Karla Graham
(Historic England)
10–11 February 2022

Kelly McClinton
(University of Oxford)
10–11 February 2022

Leigh Leiberman
(The Alexandria Archive Institute)
10–11 February 2022

Lindsay Allen
(King’s College London)
10–11 February 2022

Lisa Brody
(Yale University Art Gallery)
10–11 February 2022

Lisa Fthenakis
(National Museum of Asian Art, Smithsonian Institution)
10–11 February 2022

Lucy Makinson
(independent scholar)
10–11 February 2022

Manar Hammad
(New Sorbonne University Paris 3)
10–11 February 2022

Maria-Gabriella Micale
(The Free University of Berlin)
10–11 February 2022

Marie Hélène Van De Ven
(Aarhus University)
10–11 February 2022

Marte Zepernick
(State Museum of Baden)
10–11 February 2022

Matthew Ong
(UC Berkeley)
10–11 February 2022

Miriam Kühn
(Berlin State Museums)
10–11 February 2022

Monika Rekowska
(University of Warsaw)
10–11 February 2022

Nancy Antonellis
(Brockton Public Schools)
10–11 February 2022

Nicolò Sabina
(Sapienza University of Rome)
10–11 February 2022

Nurdan Atalan Çayirezmez
(The British Institute at Ankara)
10–11 February 2022

Omar Scarone
(Sapienza University of Rome)
10–11 February 2022

Pearce Paul Creasman
(The American Center of Research)
10–11 February 2022

Penny Weinstein
(Smithsonian Institution)
10–11 February 2022

Poppy Grima
(Durham University)
10–11 February 2022

Radka Pallová
(University of Cambridge)
10–11 February 2022

Raimond Rohlf
(King’s College London)
10–11 February 2022

Ryan Murray
(National Museum of Asian Art, Smithsonian Institution)
10–11 February 2022

Ryder Kouba
(The American Centre of Research)
10–11 February 2022

Samantha Suppes
(University of Chicago)
10–11 February 2022

Sandra Jacobs
(Leo Baeck College and King’s College London)
10–11 February 2022

Santha Mubaideen
(Council for British Research in the Levant)
10–11 February 2022

Sarah Kansa
(The Alexandria Archive Institute)
10–11 February 2022

Sebastion Marshall
(University of Cambridge)
10–11 February 2022

Serena Autiero
(Ruhr University Bochum)
10–11 February 2022

Sofia Skaza
(Municipality of Korinthos)
10–11 February 2022

Stephanie Grimes
(King’s College London)
10–11 February 2022

Susan Abugrara
(Durham University)
10–11 February 2022

Sveta Matskevich
(Hebrew University of Jerusalem)
10–11 February 2022

Søren Handberg
(University of Oslo)
10–11 February 2022



Thirzá Amaral Berquó
(Bar-Ilan University)
10–11 February 2022

Vinnie Nørskov
(Aarhus University)
10–11 February 2022

Zena Kamash
(Royal Holloway, University of London)
10–11 February 2022

Abraham Zerai Gebremariam
(University of Turin)
16 March

Alen Čičko
(independent)
16 March

Alex Metcalfe
(Lancaster University)
16 March

Amer Aljovic
(independent)
16 March

Ana Fundurulic
(Sapienza University of Rome)
16 March

Anastasia Brozou
(Aarhus University)
16 March

Andres Dobat
(Aarhus University)
16 March

Anel Hrnjić
(independent)
16 March

Astrid Kristine Tvedte Kristoffersen
(Museum of Cultural History, University of Oslo)
16 March

Azer Aljović
(independent)
16 March

Azra Kulovic
(independent)
16 March

Bart Cornelis
(University of Groningen)
16 March

Birgitta Hårdh
(Lund University)
16 March

Charles Leshner
(Aarhus University)
16 March

Christian Svejgård Lunde Jørgensen
(Aarhus University)
16 March

Cæcilie Andreas Andersen
(Aarhus University)
16 March

Dagfinn Skre
(University of Oslo)
16 March

David Wigemark
(uQuest.com)
16 March

Ditte Kvist Johnson
(University of Gothenburg)
16 March

Erik Lind Jensen
(Ringkøbing-Skjern Museum)
16 March

Evan Maina Maingi
(University of Burgos)
16 March

Gry H. Barfod
(Aarhus University)
16 March

Guillaume Sarah
(CNRS Orléans, Paris)
16 March

Harun Novic
(independent)
16 March

Irma Bajramovic
(independent)
16 March

Jane Kershaw
(University of Oxford)
16 March

Johan Sandvang Larsen
(Aarhus University)
16 March

Kemal Joldzo
(independent)
16 March

Louise Felding
(VejleMuseerne)
16 March

Mafalda Costa
(University of Évora)
16 March

Magdalena Ewa Naum
(Aarhus University)
16 March

Marcos Martínón-Torres
(University of Cambridge)
16 March

Minel Abaz
(independent)
16 March

Nedim Klipo
(independent)
16 March

Nora Köhler
(independent)
16 March

Olav Elias Gundersen
(Museum of Cultural History, University of Oslo)
16 March

Ordanče Petrov
(Institute of Old Slavic Culture, Prilep)
16 March

Rasmus Andreassen
(Aarhus University)
16 March

Sabikun Naher
(Jahangirnagar University)
16 March

Thomas Birch
(Moesgaard Museum)
16 March

Unn Pedersen
(University of Oslo)
16 March

Valentina Loncaric
(University of Évora)
16 March

Richard Hodges
(The American University of Rome)
9–25 April 2022

Álvaro Rafael de Balbín-Bueno
(University of Oviedo)
11 April–5 September 2022

Femke Lippok
(University of Leiden)
20–22 April 2022

Wim Kemme
(University of Leiden)
20–22 April 2022

James M. Harland
(University of Bonn)
4 May 2022

Jamie Young
(University of Glasgow)
4 May 2022

Melania Gigante
(University of Padua)
4 May 2022

Sara Eriksson
(UC Berkeley)
4 May 2022

Sine Maria Vinther
(Roskilde University)
4 May 2022

Gertjan Plets
(Utrecht University)
13–14 June 2022

Hiba Alkhalaf
(King's College London)
13–14 June 2022

Isber Sabrine
(Archaeology of Social Dynamics, Spanish National Research Council)
13–14 June 2022

Jen Baird
(Birkbeck, University of London)
13–15 June 2022

Juliette Desplat
(The National Archives, UK)
13–14 June 2022

Michel Al-Maqdissi
(Louvre Museum)
13–14 June 2022

Patrick Michel
(University of Lausanne)
13–15 June 2022

Raphael Greenberg
(Tel Aviv University)
13–14 June 2022

Sarah Irving
(Staffordshire University)
13–14 June 2022

Usama Gad
(Ain Shams University)
13–14 June 2022

Zena Kamash
(Royal Holloway, University of London)
13–15 June 2022

Rosie Bonté
(Brepols Publishers)
15–17 June 2022

Jakob Helmer
(independent graphic designer)
16–17 June 2022

Augusta McMahon
(University of Cambridge)
27–28 June 2022

Ingolf Thuesen
(University of Copenhagen)
27–28 June 2022

Jack Hanson
(University of Reading)
27–28 June 2022

Jan Bemmman
(University of Bonn)
27–28 June 2022

Jonathan Mark Kenoyer
(University of Wisconsin-Madison)
27–28 June 2022

Krzysztof Makowski Hanula
(Pontifical Catholic University of Peru)
27–28 June 2022

Li Min
(UCLA)
27–28 June 2022

Mark Lehner
(University of Chicago)
27–28 June 2022

Massimo Vidale
(University of Padua)
27–28 June 2022

Miko Flohr
(Leiden University)
27–28 June 2022

Shadrek Chirikure
(University of Oxford)
27–28 June 2022

Steffen Terp Laursen
(Moesgaard Museum)
27–28 June 2022

Stephanie Wynne-Jones
(University of York)
27–28 June 2022

Tobias Richter
(University of Copenhagen)
27–28 June 2022

Tønnes Bekker-Nielsen
(University of Southern Denmark)
27–28 June 2022

Elena Xoplaki
(Justus Liebig University Giessen)
30 June–1 July 2022

Federica Sulas
(University of Cambridge)
30 June 2022

Heli Huhtamaa
(University of Bern)
30 June–1 July 2022

John M. Marston
(Boston University)
30 June 2022

Olasunkanmi Habeeb Okunola
(University of the Witwatersrand; United Nations University Institute for Environment and Human Security)
30 June 2022



David Laguna Palma
(University of Granada)
1 August–31 October 2022

Olga Palacios Martinez
(Autonomous University of Barcelona)
5 September–18 November 2022

Alexis Wilkin
(Université Libre de Bruxelles)
7–8 September 2022

Allyson McDavid
(The New School, Parsons School of Design, New York)
7–8 September 2022

Emanuele Ettore Intagliata
(University of Milan)
7–8 September 2022

Jon Frey
(Michigan State University)
7–8 September 2022

Jonathan R. Wood
(University College London)
7–8 September 2022

Maria Stella Busana
(University of Padua)
7–8 September 2022

Thomas Birch
(Moesgaard Museum)
7–8 September 2022

Michael Neiss
(Uppsala University)
8–10 September 2022

Andrea Cipolato
(Ca' Foscari University of Venice)
12–23 September 2022

James Barrett
(NTNU University Museum)
11 October 2022

John Healey
(University of Manchester)
18–19 October 2022

Annette Haug
(University of Kiel)
30 November–1 December 2022

Antonio Monticolo
(University of Kiel)
30 November–1 December 2022

Ditte K. Johnson
(University of Gothenburg)
30 November–1 December 2022

Florian Schwake
(University of Kiel)
30 November–1 December 2022

Jesper V. Jensen
(Humboldt University of Berlin)
30 November–1 December 2022

Julia Heil
(University of Kiel)
30 November–1 December 2022

Julika Steglich
(University of Kiel)
30 November–1 December 2022

Nathalia B. Kristensen
(University of Warwick)
30 November–1 December 2022

Patric Kreuz
(University of Kiel)
30 November–1 December 2022

Sara Mura
(University of Kiel)
30 November–1 December 2022

Aleksandra Kubiak-Schneider
(National Museum in Warsaw)
8–9 December 2022

Annie Sartre-Fauriat
(University of Tours)
8–9 December 2022

Cecilie Brøns
(Ny Carlsberg Glyptotek)
8–9 December 2022

Christopher Hallett
(UC Berkeley)
8–9 December 2022

Eivind Heldaas Seland
(University of Bergen)
8–9 December 2022

Emanuele Ettore Intagliata
(University of Milan)
8–9 December 2022

Henry Colburn
(Kelsey Museum of Archaeology, University of Michigan)
8–9 December 2022

Hilda Victoria Stellgård
(University of Gothenburg)
8–9 December 2022

Jean-Baptiste Yon
(CNRS, Institut français du Proche-Orient)
8–9 December 2022

Jørgen Christian Meyer
(University of Bergen)
8–9 December 2022

Katia Schörle
(CNRS)
8–9 December 2022

Kevin Butcher
(University of Warwick)
8–9 December 2022

Lila Knight
(Durham University)
8–9 December 2022

Matthew Ponting
(University of Liverpool)
8–9 December 2022

Maura K. Heyn
(University of North Carolina – Greensboro)
8–9 December 2022

Maurice Sartre
(University of Tours)
8–9 December 2022

Nefise Ozcelik
(École Pratique des Hautes Etudes)
8–9 December 2022

Ted Kaizer
(Durham University)
8–9 December 2022

Zena Kamash
(Royal Holloway, University of London)
8–9 December 2022

Collaborators

Aayush Srivastava
(Research Officer, University of Saint Andrews)

Abigail Buffington
(Mellon Postdoctoral Scholar, College of William and Mary)

Achim Lichtenberger
(Professor, University of Münster)

Adolfo Fernández Fernández
(Researcher, University of Vigo)

Alexander J. Sivitskis
(Associate Lecturer, Royal University of Berlin)

Alf Lindroos
(Research Associate, Åbo Akademi)

Amir Zaribaf
(PhD Candidate, University of Sydney)

Andrew Wilson
(Professor, University of Oxford)

Anna Glenn
(Assistant Professor, Ludwig Maximilian University of Munich)

Anne Pedersen
(Senior Curator, National Museum of Denmark)

Aoife Maeliosa Daly
(Associate Professor, University of Copenhagen)

Ainara Sistiga
(Assistant Professor, University of Copenhagen)

Barbara Mills
(Professor, University of Arizona)

Bente Philippsen
(Associate Professor and Head of The National Laboratory for Age Determination)

Bernard Gratuze
(Research Director, IRAMAT-CEB CNRS Orléans)

Bert Smith
(Professor, University of Oxford)

Bruce Chapman
(Scientist, NASA Jet Propulsion Lab)

Catherine D'Andrea
(Professor, Simon Fraser University)

Chavdar Tzochnev
(Researcher, The American School of Classical Studies at Athens)

Christine L. Johnston
(Assistant Professor, Western Washington University)

Christoph Eger
(Professor Doctor, The Free University of Berlin)

Christopher Hallett
(Professor, UC Berkeley)

Claudio Parisi Presicce
(Director, Sovrintendenza Capitolina)

Claus Feveile
(Curator, Museum of Southwest Jutland)

Daniela Stoyanova
(Assistant Professor, Sofia University)

Danuta Michalska
(Assistant Professor, Adam Mickiewicz University)

David C. W. Sanderson
(Professor, Scottish Universities Environmental Research Centre)

Douglas C. Comer
(President, Cultural Site Research and Management Foundation)

Eivind Heldaas Seland
(Professor, University of Bergen)

Eli N. Dollarhide
(Research Fellow, NYU Abu Dhabi)

Emil Nankov
(Assistant Professor, National Institute of Archaeology at the Bulgarian Academy of Sciences)

Esen Ogus
(Professor, Austin Peay State University)

Fiona Kidd
(Assistant Professor, NYU Abu Dhabi)

Frances Wiig
(PhD Candidate, University of New South Wales)

Francisca Corsetti
(Doctor, The Danish Institute in Rome)

Genevieve Safi Holdridge
(Geoscientist, Central Coast Regional Water Quality Control Board, USA)

Georg Kalaitzoglou
(Professor, Ruhr University Bochum)

Giovanni Murro
(Doctor, The Danish Institute in Rome)

Gloria Mittica
(Project Director, The Danish Institute in Rome)

Gry H. Barfod
(Assistant Professor, Aarhus University)

Heike Möller
(Postdoc, German Archaeological Institute)

Hélène David-Cuny
(Associate Researcher, CEFREPA-CNRS)

Ian A. Simpson
(Professor, University of Stirling)

Ian C. Freestone
(Professor, University College London)

Jacob A. Comer
(Vice-President, Cultural Site Research and Management Foundation)



Jan Kindberg Jacobsen
(Researcher, Aarhus University
and The Danish Institute in Rome)

Jean-Baptiste Yon
(Director of Research, Laboratoire
HISOMA)

Jens Ulriksen
(Head of Archaeology, Museum
Southeast Denmark)

Jessica Munson
(Assistant Professor, Lycoming
College)

John Lund
(Senior Researcher, National
Museum of Denmark)

Joseph W. Lehner
(ARC Discovery Early Career
Research Award Fellow, University
of Sydney)

Jörg Rüpke
(Max Weber Centre for Advanced
Cultural and Social Studies,
University of Erfurt)

Kenneth Lapatin
(Curator, J. Paul Getty Museum)

Laura di Siena
(Doctor, The Danish Institute in
Rome)

Liam Lanigan
(PhD Fellow, University of
Copenhagen)

Lisa Brody
(Associate Curator, Yale
University)

Lisbeth M. Imer
(Senior Researcher, National
Museum of Denmark)

Mads Ravn
(Head of Research, Vejle Museum)

Mads Runge
(Head of Archaeology, Odense City
Museums)

Mantha Zarmakoupi
(Professor, University of
Pennsylvania)

Maria Stamatopoulou
(Professor, Lincoln College, Oxford)

Massimo Vitti
(Doctor, Sovrintendenza
Capitolina)

Matt Peeples
(Associate Professor, Arizona State
University)

Maura Heyn
(University of North Carolina –
Greensboro)

Michael E. Smith
(Arizona State University)

Michael J. Harrower
(Associate Professor, John Hopkins
University)

Musa Kadioğlu
(Professor Doctor, Ankara
University)

Myrina Kalaitzi
(Associate Researcher, National
Hellenic Research Foundation)

Nadine Schibille
(Senior Research Scientist,
IRAMAT-CEB CNRS Orléans)

Nathalia B. Kristensen
(PhD Student, University of
Warwick)

Nathanael Andrade
(Professor, Binghamton University)

Paige E. Paulsen
(PhD Candidate, Johns Hopkins
University)

Pau de Soto
(Lecturer, The Autonomous
University of Barcelona)

Paul D. Scotton
(Professor, American School of
Classical Studies at Athens)

Paulina Komar
(Postdoc, Cardinal Stefana
Wyszyńskiego University)

Pedro Carvalho
(Associate Professor, University of
Coimbra)

Petya Ilieva
(Faculty Member, Bulgarian
Academy of Sciences)

Philip Bes
(Doctor, Austran Academy of
Sciences)

Rikke Randeris Thomsen
(Test Specialist, Netcompany)

Roland Fletcher
(Professor, University of Sydney)

Rosie Bonté
(Publishing Manager, Brepols
Publishers)

Ruth E. Jackson-Tal
(Curator, The Israel Museum)

Sercan Sağlam
(Assistant Professor, The American
University of the Middle East)

Serra Durugönnül
(Professor, Doctor, Mersin
University)

Serra Somersan
(Doctor, University of Oxford)

Simon Carrignon
(Researcher, Barcelona
Supercomputing Centre)

Smiti Nathan
(Senior User Experience
Researcher, JPMorgan Chase&Co)

Stefani Crabtree
(Assistant Professor, Santa Fe
Institute)

Theis Zetner Trolle Jensen
(Assistant Professor, University of
Copenhagen)

Tim C. Kinnaird
(Researcher, St. Andrews
University)

Tim Evans
(Senior Lecturer, Imperial College
London)

Trine Arlund Hass
(Postdoc, University of Oxford)

Tuna Sae
(Associate Professor, Çanakkale
Onsekiz Mart University)

Tyler Franconi
(Visiting Assistant Professor,
Brown University)

William S. Ayres
(Professor Emeritus, University of
Oregon)

Yasar Demiröz
(Guide, EON Tours Travel)



The special exhibition “Vikingernes by” (The Viking Town) at the museum *Ribes Vikinger* was curated by Søren M. Sindbæk and the *Northern Emporium* project team. Top: UrbNet trip to the museum (photo: Eva Mortensen). MIDDLE: From the exhibition opening (photo: Søren M. Sindbæk). BOTTOM: Some of the combs found in Ribe (photo: Eva Mortensen).



Publications

Abad, P. V., Fernández, A. F. & Rodríguez Nóvoa, A. A. (2022).

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Bobou, O., Miranda, A. C. & Raja, R. (2022).

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Bobou, O., Miranda, A. C. & Raja, R. (2022).

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Bobou, O., Miranda, A. C., Raja, R. & Yon, J.-B. (2022).

The Ingholt Archive: The Palmyrene Material, Transcribed with Commentary and Bibliography, Archive Archaeology 2, 4 vols., Turnhout: Brepols.

Bobou, O., Raja, R. & Steding, J. (2022).

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Boschetti, C. (2022).

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Boschetti, C., Jacobsen, J. K., Mittica, G., Mortensen, E. & Raja R. (2022).

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Boschetti, C., Jacobsen, J. K., Parisi Presicce, C., Raja, R., Schibille, N. & Vitti, M. (2022).

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Boschetti, C., Jacobsen, J. K., Parisi Presicce, C., Raja, R., Schibille, N. & Vitti, M. (2022).

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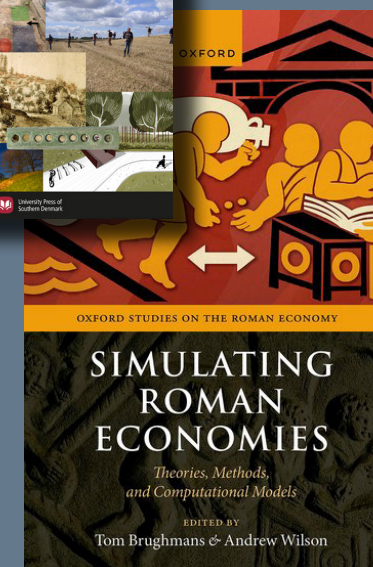
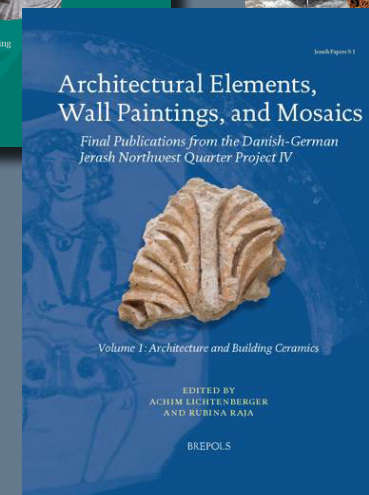
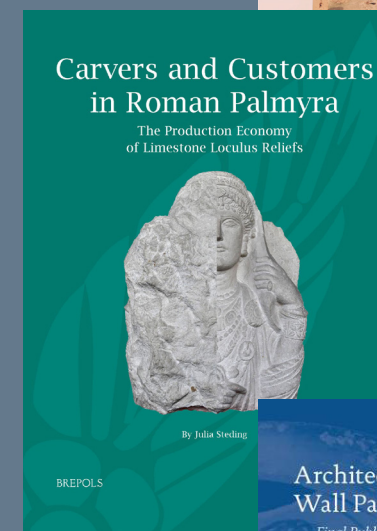
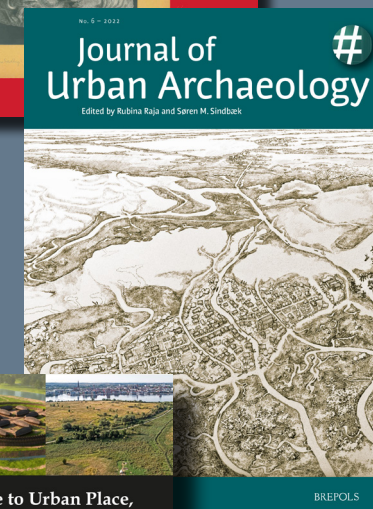
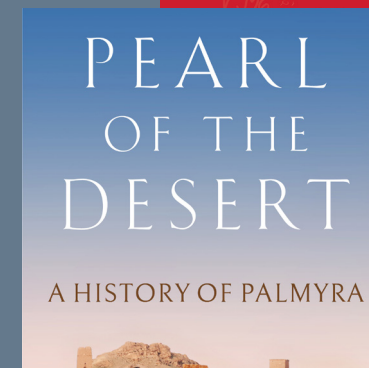
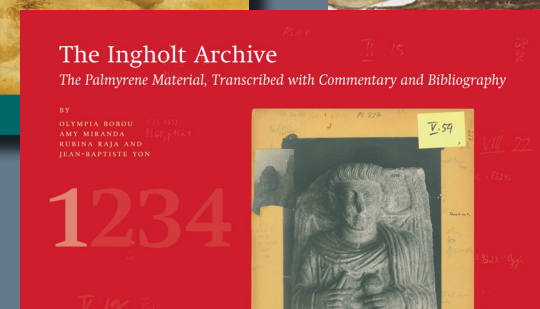
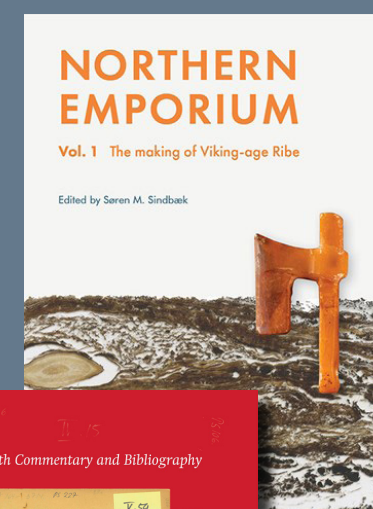
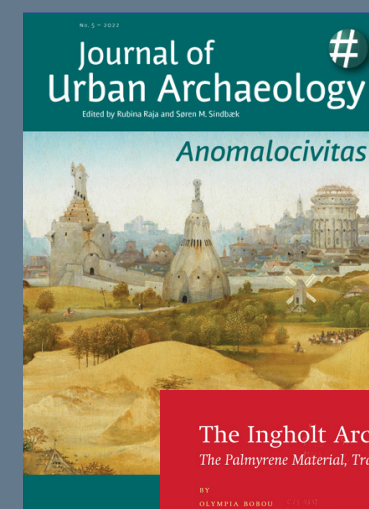
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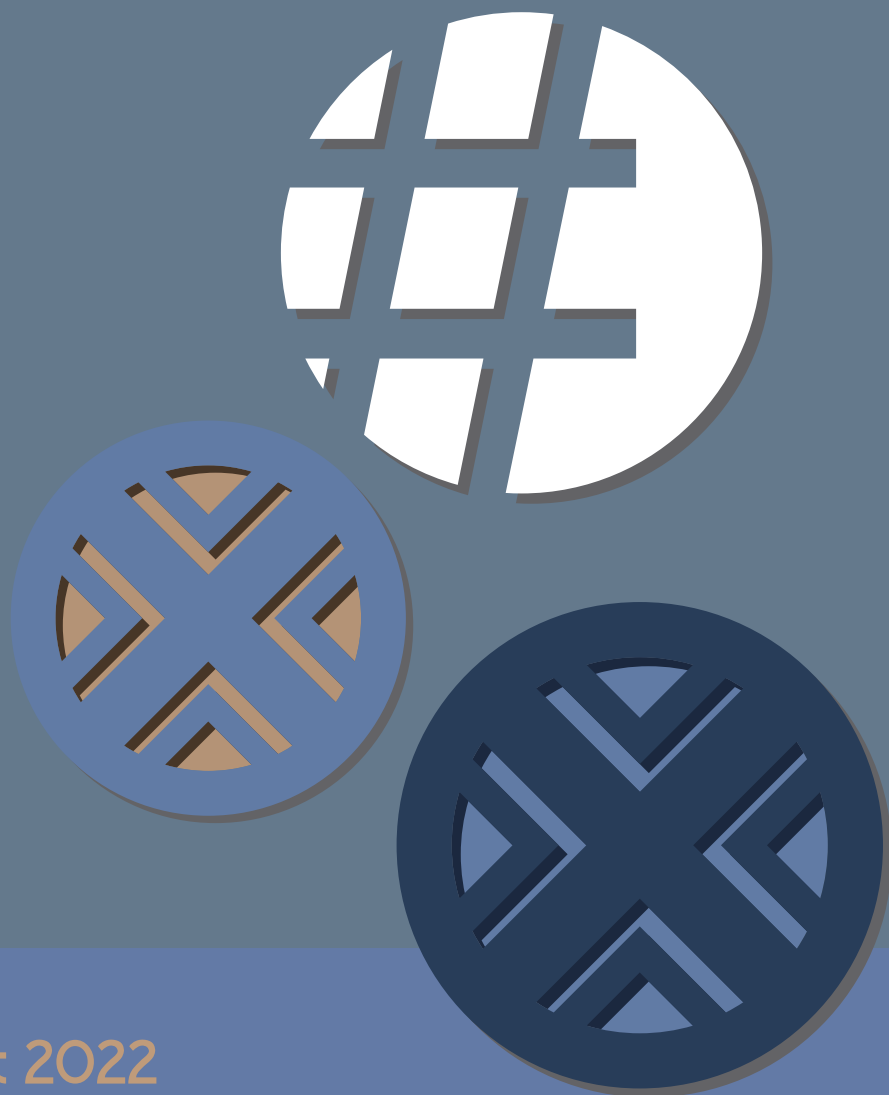
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UrbNet Annual Report 2022

Editors

Christina A. Levisen, Eva Mortensen, Rubina Raja & Søren M. Sindbæk

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Hieroglyph for town. From the Min Senwosret I relief (UC14786i-ii) in the Petrie Museum of Egyptian and Sudanese Archaeology, UCL (photo: Søren M. Sindbæk).

Centre for Urban Network Evolutions (UrbNet)

Aarhus University
Moesgård Allé 20, 4230, 2nd floor
DK-8270 Højbjerg
Denmark

+45 4087 8516
<http://urbnet.au.dk>

Centre Director

Professor Rubina Raja, rubina.raja@cas.au.dk

Deputy Director

Professor Søren M. Sindbæk, farksms@cas.au.dk

Centre Administrator

Christina A. Levisen, levisen@cas.au.dk

Assistant Centre Administrator

Mie Egelund Lind, melind@cas.au.dk