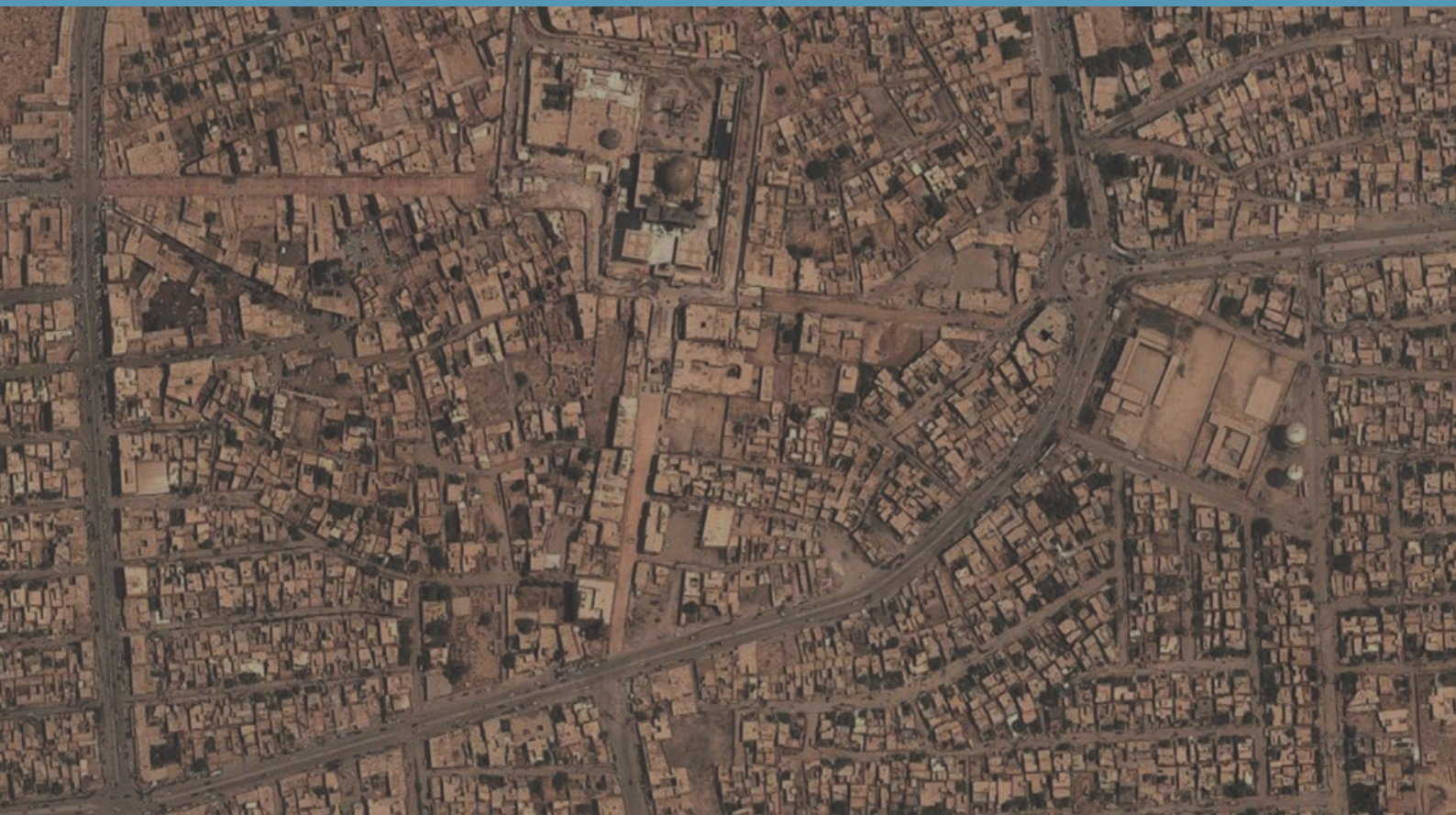


UrbNet Annual Report 2016

**A Centre of Excellence funded by
the Danish National Research Foundation**

Hosted by Aarhus University



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 the natural sciences with contextual cultural studies rooted in the humanities.

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



Group photo, UrbNet centre day with presentations, 21 November 2016 (Photo: UrbNet).

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Greetings from the Director

It gives me great pleasure to present the 2016 annual report of the Danish National Research Foundation's (DNRF) *Centre of Excellence for Urban Network Evolutions* (UrbNet).

In February, UrbNet took over a completely refurbished floor at AU Campus Moesgaard (at the old Moesgaard Manor), which proved to be the perfect setting for our daily activities and allowed us to really unify the UrbNet team.

In 2016, we welcomed a total of 24 new employees (some externally funded) – seven PhD students, two postdocs, four assistant professors, two academic employees and nine student assistants; we took home (either as lead or co-lead) more than 24 million DKK in new project funds; we hosted more than 80 events – conferences, workshops, lectures, courses and meetings; and we published 48 scientific papers, articles and books – just to mention a few of our joint achievements.

UrbNet agenda conference

In January 2016, we hosted the first UrbNet agenda conference, *Biographies of Place*, which brought together a wide range of international scholars and experts who all offered their perspective on how to apply a context-first approach to urban archaeology, allowing a multidimensional interpretation of individual contexts to form the point of departure for integrated biographies of urban sites. Conference papers were subsequently submitted for publication as part of the first UrbNet thematic agenda volume, and the editing process is ongoing.

Visitors

Over the year, we welcomed more than a hundred visitors at the centre – conference speakers/participants, guest lecturers and collaborators, and we are extremely grateful for the interest in our endeavours and the positive responses we have received from near and far in regard to our activity portfolio and the level of scientific performance and commitment by our employees.

In April–June 2016, we welcomed our first visiting professor, Alain Schnapp, who is a highly acclaimed scholar and professor emeritus of Classical Archaeology at Université Paris 1 (Panthéon–Sorbonne). During his stay, Schnapp offered a six-part lecture series entitled *Ruins and their significance for urban history* (expected for publication in the UrbNet residential-scholar book series in 2018). Schnapp also played an active part in UrbNet's daily activities and discussions, and his insights and mentorship of the centre's junior researchers constituted an invaluable source of inspiration for all of us.

In September–December 2016, we hosted our first visiting PhD student (funded by Aarhus University Research Foundation), Lina Diers, from Universität Wien, who had expressed a wish to carry out part of her project at UrbNet due to the breadth of expertise represented at the centre. Working from a different perspective on urbanism and focusing on another region, namely the Balkans, her presence at UrbNet, too, contributed positively to our discussions.

New projects

In 2016, UrbNet staff attracted a number of new research grants, the largest of which came from the Carlsberg Foundation, amounting to 15.5 million DKK toward the project *Northern Emporium: The Archaeology of Network Urbanism in Viking-Age Ribe*, directed by Professor Søren M. Sindbæk. The project, focusing on one of UrbNet's key geographical areas, constitutes an essential addition to the centre's project portfolio and is expected to unfold in the years to come the potential of the efforts relating to urban evolution in Northern Europe. Preliminary, small-scale explorations were initiated at the end of 2016, and the first large-scale excavation is scheduled for summer 2017.

As part of UrbNet's training programme, we have committed to developing and conducting a series of PhD courses, which will be offered by the Graduate School of Arts at Aarhus University and advertised throughout the extended network of the Nordic PhD school *Dialogues with the Past* (DialPast). The first of these courses, *Contextual Archaeology as a High-Definition Tool*, was held in November 2016 and featured experts from a number of European research institutions on e.g. stratigraphy, geology and micromorphology. The second course is planned for May 2017.

Collaboration with Universität Erfurt

In October 2016, UrbNet entered into a formal collaboration with *Max-Weber-Kolleg* (MKW) at Universität Erfurt in Germany. The two partner institutions committed to furthering their scientific relationship within a context of high-quality research in the social and human sciences.

Building upon this agreement, world-renowned Professor Jörg Rüpke (MKW, Universität Erfurt), in November 2016, was awarded a prolongation of his adjunct professorship at Aarhus University, now affiliated with UrbNet.

Outlook

UrbNet is the result of the largest Danish single contribution to humanities research in decades, and together, we strive to constantly push the scientific boundaries and take a lead in furthering knowledge about societal changes and cultural transformation throughout history as well as disseminating new insights on a local and a global scale.

I am extremely proud to spearhead our collective endeavours and wish to take this opportunity to express my gratitude, first of all to the Danish National Research Foundation for their generous and enthusiastic support without which the impact of our work would rest on individual excavations, smaller-scale projects and single-author publications; other funding agencies for their greatly appreciated support of humanities research; our partners and collaborators from far and wide; and not least a heartfelt thank you to the dedicated UrbNet team – the senior core group, the junior researchers and our administrative/technical staff – without whom this adventure would be much less magical.

Rubina Raja
Aarhus, March 2017



Staff

Senior core group

**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 eastern Mediterranean and the Levant. She takes a special interest in regional and interregional patterns from the Hellenistic to the early medieval period.

**Søren M. Sindbæk**

Professor MSO, 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.

**Bjørn Poulsen**

Professor
School of Culture and Society, Aarhus University

Bjørn Poulsen's work revolves around Viking-age and medieval Denmark/Northern Europe with respect to cultural, social and economic history. He specialises in towns, trade networks, town-country relations and agriculture.

**Charles Leshner**

Niels Bohr Professor
Department of Geoscience, Aarhus University

Charles Leshner's research revolves around geochemistry and experimental petrology, and he is an expert in Plasma Mass Spectrometry and volcanic rocks. He is Niels Bohr Professor and director of the *Danish Interdisciplinary Center for Plasma Mass Spectrometry (DK-ICPMS)*.

**Søren M. Kristiansen**

Associate professor
Department of Geoscience, Aarhus University

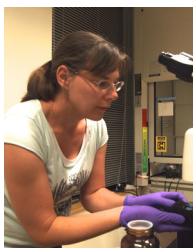
Søren M. Kristiansen's work revolves around soils, and he works across a wide range of scientific and professional fields, including geoarchaeology, soil science, groundwater chemistry, medical geology, soil chemistry and geomorphology.



Jesper Olsen

Associate professor
Department of Physics and Astronomy, Aarhus University

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



Gry H. Barfod

Assistant professor
Department of Geoscience, Aarhus University

Gry H. Barfod specialises in isotope geochemistry and geochronology. Her work applies trace metals (Hg, Pb, As) and non-traditional isotope systems (e.g. Fe) to medical and archaeological sciences.



Peter H. Mikkelsen

Head of Department
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.



Stephanie Wynne-Jones

Lecturer
Department of Archaeology, University of York

Stephanie Wynne-Jones specialises 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.

Assistant professors and postdocs



Heike Möller (1 January 2016 – 31 December 2016)

Assistant professor (*Ceramics in Context Project*, funded by the Carlsberg Foundation)
School of Culture and Society, Aarhus University

Heike Möller is a pottery specialist with a research focus on Roman to Early Islamic pottery and trade network in the Mediterranean. She has worked on many sites in Egypt, Tunisia, Turkey and Greece. With the *Ceramics in Context* project, her current research focus is on pottery production patterns in Jordan.



Michael Blömer (1 January 2016 – 31 December 2016)

Assistant professor
School of Culture and Society, Aarhus University

Michael Blömer's research focuses on urbanism, sculpture and religious iconography in Asia Minor and the Roman Near East. He has a long record of experience in field archaeology – most notably in relation to the excavation of the Iuppiter Dolichenus sanctuary near Doliche in South-East Turkey.



Signe Krag (1 February 2016 – 31 December 2016)

Assistant professor (*Palmyra Portrait Project*, funded by the Carlsberg Foundation)
School of Culture and Society, Aarhus University

Signe Krag's research focuses on the representation of Palmyrene women as well as the family structures of Palmyra. Her work is primarily based on funerary sculpture from the first century BCE to the third century CE.



Luise Ø. Brandt (1 March 2016 – 31 December 2016)

Assistant professor (Individual Postdoctoral Fellowship, funded by the Carlsberg Foundation and UrbNet)
School of Culture and Society, Aarhus University

Luise Ø. Brandt is a Prehistoric Archaeologist, focusing on the analysis of DNA and proteins from archaeological textiles and skins. She is particularly interested in how the natural sciences can be applied to archaeological questions.



Federica Sulas (1 October 2016 – 31 December 2016)

Assistant professor
School of Culture and Society, Aarhus University

Federica Sulas's research deals with the responses of people and landscapes to environmental and social change over time, interpreting the impact of such processes on past urban dynamics and system resilience and exploring how this knowledge may inform on present and future challenges.



Thomas Birch (1 November 2016–31 December 2016)

Assistant professor
School of Culture and Society, Aarhus University

Thomas Birch studies and scientifically analyses artefacts and materials from archaeological sites to learn about their origin and past technologies, aiming to understand how material assemblages influence and are influenced by the evolution of urban networks.



Genevieve Holdridge (3 August 2016–31 December 2016)

Postdoc
Department of Geoscience, Aarhus University

Genevieve Holdridge holds two Master degrees in Art History and Archaeology and received her doctorate in Geography from the University of Georgia, Athens GA. She has experience in Mediterranean archaeology, geoarchaeology, fluvial geomorphology and paleoclimatology.



Vana Orfanou (9 September 2016–31 December 2016)

Postdoc
Department of Geoscience, Aarhus University

Vana Orfanou is an archaeologist who specialises in archaeometry, namely the scientific analysis of artefacts, tools and technological by-products, with the aim of contextualising past technologies and understanding behavioural patterns.



The Artemis Sanctuary in Jerash seen from the south (Photo: Danish–German Jerash Northwest Quarter Project).

PhD students



Neeke M. Hammers (1 January 2016–31 December 2016)

PhD student

School of Culture and Society, Aarhus University

Neeke Hammers's project takes an archaeobotanical approach to the interpretation of network connections and urban development in northern Europe during medieval times based on archaeobotanical remains from urban contexts.



Alex H. Peterson (1 January 2016–31 December 2016)

PhD student (*Ceramics in Context Project*, funded by the Carlsberg Foundation)

School of Culture and Society, Aarhus University

Alex Peterson's project aims to better understand the settlement history and ceramics of the Middle Islamic period in the Northwest Quarter of Jerash, Jordan. By taking a contextual approach, this project hopes to develop a more holistic synthesis of this less well understood period of history.



Hanna Dahlström (1 January 2016–31 December 2016)

PhD student (*Urban Encounters: Mobility, Migration and Networks in Premodern Scandinavia Project*, funded by the Velux Foundation, Museum of Copenhagen and UrbNet)

School of Culture and Society, Aarhus University

Hanna Dahlström's project focuses on early urban development in Copenhagen through a view of urbanity as practice. Hanna will explore the activities, people and networks that have been important in the early development of Copenhagen, and how urban ways of life emerge.



Kirstine Haase (1 February 2016–31 December 2016)

PhD student (*Urban Encounters: Mobility, Migration and Networks in Premodern Scandinavia Project*, funded by the Velux Foundation, Odense City Museums and UrbNet)

School of Culture and Society, Aarhus University

Kirstine Haase's project is based on recent excavations in Odense. Analyses focus on artefact biographies and urban practices based on material culture, e.g. building patterns, refuse patterns, use and depositing of animal bone etc.



Kristine Thomsen (1 February 2016–31 December 2016)

PhD student

School of Culture and Society, Aarhus University

Kristine Thomsen's project combines Classical Archaeology with geochemical methods. The excavation in Jerash, Jordan, is the focal point of the project, and Kristine tries to understand the complex urban space and development through geochemistry.



Olav E. Gundersen (1 February 2016–31 December 2016)

PhD student

School of Culture and Society, Aarhus University

Olav E. Gundersen's project analyses numismatic material in order to see what it can tell us about the commercialisation of Norwegian, Danish and Swedish society c. 1000–1450 CE, and how it was affected by urban growth.



Ema Bauzyte (1 February 2016–31 December 2016)

PhD student

School of Culture and Society, Aarhus University

Ema Bauzyte's project focuses on the East-Africa Swahili Coast and attempts to reconstruct ancient iron extraction and working techniques employed in Antiquity as well as devise a methodology for tracing the provenance of raw materials used for iron production in the area.



Sara Ringsborg (7 September 2016–31 December 2016)

PhD student (*Palmyra Portrait Project*, funded by the Carlsberg Foundation)

School of Culture and Society, Aarhus University

Sara Ringsborg's project is an integrated part of the *Palmyra Portrait Project*, and she undertakes research on the funerary portraits of children from Roman-period Palmyra.



Julia Steding (1 November 2016–31 December 2016)

PhD student (*Palmyra Portrait Project*, funded by the Carlsberg Foundation)

School of Culture and Society, Aarhus University

Julia Steding's project is conducted within the framework of the *Palmyra Portrait Project*, focusing on questions relating to the production economy of funerary portraits from Roman-period Palmyra.

Other academic employees



Anne Ditte K. Høj (2 May 2016–17 June 2016)

Research assistant (*Palmyra Portrait Project*, funded by the Carlsberg Foundation)
School of Culture and Society, Aarhus University

Anne Ditte K. Høj holds an MA in classical archaeology from Aarhus University and undertook database and catalogue work as well as other research-related tasks in connection with the *Palmyra Portrait Project*.



Eva Mortensen (23 August 2016–31 December 2016)

Research assistant
School of Culture and Society, Aarhus University

Eva Mortensen has a PhD in Classical Archaeology and works as a research assistant primarily with the historiography of the Levant. Based on archival research, she explores the early explorers of the region through their travel accounts, diaries, sketches and drawings and through old photographs and maps.

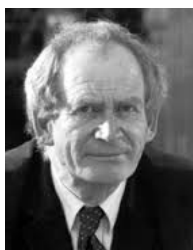


Erin J. Rosenberg (26 September 2016–31 December 2016)

Research assistant
Department of Geoscience, Aarhus University

Erin Rosenberg's academic background is in isotope and trace element geochemistry. She holds an MSc in Earth Sciences from Dartmouth College (USA) and a BSc in Geosciences with an emphasis in Geochemistry and a minor in Planetary Sciences from the University of Arizona (USA).

Visiting professors



Alain Schnapp (1 April 2016–30 June 2016)

Visiting professor
School of Culture and Society, Aarhus University

Alain Schnapp is Professor emeritus of Classical Archaeology at Université Paris 1 (Panthéon-Sorbonne). His work focuses on Greek iconography and cultural history of Antiquity, and he is recognised among peers as one of the leading experts in his field. During his stay at UrbNet, Alain Schnapp gave a lecture series entitled *Ruins and their significance for urban history*.

Administrative employees



Christina A. Levisen (1 January 2016–31 December 2016)
Centre administrator
School of Culture and Society, Aarhus University

Christina Levisen has worked with research administration in both Denmark and abroad and manages the day-to-day operations of the centre.



Ivana Baf (1 January 2016–31 December 2016)
Lab technician
Department of Physics and Astronomy, Aarhus University

Ivana Baf worked on registration and chemical preparation of samples, processing of measurement results and maintenance of samples.

Student assistants

Anders Dam Hove (15 February–31 December 2016)

Ann Lisa Pedersen (15 February–31 December 2016)

Ditte K. Johnson (1 September–31 December 2016)

Jesper V. Jensen (9 May–31 December 2016)
(*Palmyra Portrait Project*)

Julie T. Raunstrup (1 July–31 December 2016)

Line Egelund (1 January–31 December 2016)
(*Ceramics in Context*)

Mariann Frandsen (15 May–31 December 2016)

Mette N. Pedersen (1 January–31 December 2016)

Mie E. Lind (1 January–31 December 2016)

Nathalia B. Kristensen (9 May–31 December 2016)
(*Palmyra Portrait Project*)

Oda N. Nordby (1 September–31 December 2016)
(*Palmyra Portrait Project*)

Steff E. Wiklund (1 July–31 December 2016)



Taking out samples (Photo: Søren M. Sindbæk).

UrbNet Projects 2016



Documenting stratigraphy samples (Photo: Morten Søvsø).

Northern Emporium: The Archaeology of Network Urbanism in Viking-Age Ribe

Director: Søren M. Sindbæk (UrbNet, Aarhus University)

Funding: The Carlsberg Foundation

Project website: <http://projects.au.dk/northernemporium/>

In 2016, the Carlsberg Foundation awarded a grant of 15.5 million DKK for the project *Northern Emporium: The Archaeology of Network Urbanism in Viking-Age Ribe* to be affiliated to UrbNet at Aarhus University. The project aims to explore the evolution and dynamics of the earliest urban network in Scandinavia based on a comprehensive, stratigraphic excavation of settlement and workshop layers in a central part of the earliest Ribe, one of the richest archaeological sites of the North-Sea trading world, which emerged in the eighth century CE. Set to run for the period 2016–2020, and carried out in close collaboration with the Museum of Southwest Jutland, it is to include several postdoctoral research projects in continuation of the excavation.

Ribe is one of the most important archaeological sources for European history between the Migration period and medieval times. As the earliest town in Denmark, Ribe was a hub for maritime networks, connecting the world in new ways at the threshold of the maritime expansion of the Viking Age. The archaeology of early Ribe is exceptionally well preserved but is threatened by deterioration and has since the 1970s mainly been subject to rescue excavations with very limited resources. This project will secure the exploration of one of Denmark's most unique pockets of cultural heritage.

The excavation, to be carried out 2017–2018, will cover two plots and adjacent street front in order to elucidate questions regarding the nature and the development of the settlement. The project will apply a combination of consequent stratigraphic excavation and integration of high-definition methods from the natural sciences (e.g. geochemical element analysis, dirt DNA, proteomics and micromorphology), in order to yield new knowledge about culture-historical problems. Furthermore, the documentation of

the excavations will seek to implement dynamic digital methods and on-site recording.

The aim of the project is to shed light on urbanism as a network dynamic and the significance of the events, conflicts and flows on economic and cultural processes. This will be done through a high-definition archaeology, which will clarify the change of the site and its connections as well as the possible dynamics behind these, cf. the approach propagated by UrbNet, reflecting its status as one of the three field-archaeological focus projects of the centre.

The excavation of early Ribe could generate crucial new evidence of the processes and drivers that catalysed the development of specialised production, market exchange, maritime exchange and globalised exploitation of resources at the transition to the maritime-based network society in the Viking Age. The project aims to presents a monograph synthesising the key results by 2020.



Uncovering the stratigraphic layers (Photo: Søren M. Sindbæk).

The Danish–German Jerash Northwest Quarter Project: The 2016 Campaign

Directors: Achim Lichtenberger (Westfälische Wilhelms-Universität Münster) and Rubina Raja (UrbNet, Aarhus University)

Funding: The Carlsberg Foundation, the Danish National Research Foundation, Deutsche Forschungsgemeinschaft (DFG), EliteForsk (Danish Ministry of Higher Education and Science) and H. P. Hjerl Hansens Mindefondet for Dansk Palæstinaforskning

Project website: <http://projects.au.dk/internationaljerashexcavation/>

The nature and extent of the urban development of the site of Gerasa/Jerash, a multi-period site ranging from the Neolithic into the medieval period, has been a topic of discussion for decades among scholars studying urban development, inner- and intra-urban networks, settlement patterns as well as public and private life in Antiquity. However, research has mostly focused either on single-period studies or on the understanding of single monuments and their development. The aim of the Danish–German Jerash Northwest Quarter Project, initiated in 2011, is to investigate the settlement history of the Northwest Quarter of Jerash through all periods and to contextualise new knowledge about the site, both in its urban context but also in a broader global perspective, since the evidence from the city, which was occupied for millennia, allows for such contextualisation to be undertaken.

Following an architectural and geophysical survey in 2011, five excavation campaigns have been undertaken from 2012 to 2016. The Northwest Quarter, the highest area within the walled city of Gerasa, is located west of the Artemision. So far, the investigation has revealed that the urban situation in the Roman, Late Antique and Early Islamic periods in this area of Gerasa differs from what has previously been assumed. This prominently located area seems to have been sparsely occupied in the Early Roman period; so far, only traces of quarries and water installations can be dated to this period. Settlement in this area of the city was at its peak during Late Antique and Islamic times. The results of this project, therefore, change our understanding of the overall settlement history of Gerasa and the importance of the city in a regional and interregional perspective, feeding directly into the UrbNet agenda.

From mid-July until the beginning of September 2016, the Danish–German Jerash Northwest Quarter Project undertook

further work in the Northwest Quarter of the Decapolis city of Gerasa. A team of 34 specialists and students from BA to PhD level participated in the work. The team came mainly from Aarhus University and Ruhr-Universität Bochum, and specialists from a range of countries, including Austria, Denmark, Germany and the UK, joined the team.

During this campaign, the focus was on investigating the nature of water-management installations, mosaic production cycles, use of inner-urban empty spaces for urban farming and gardening, the Early Islamic and medieval settlement history as well as examining domestic architecture and an ecclesiastic complex connected to the Late Roman army. These research foci had been chosen, on the one hand, to contextualise and expand on the knowledge we have about the site already and, on the other hand, to be able to conduct further methodological studies, while implementing new technologies on all levels of the excavation from find registration to the use of photogrammetric documentation methods in the field.

As in previous years, the results of the examinations were published in a wide range of international, high-ranking journals. The focus in 2016 was furthermore on reaching a number of targeted scientific fields – also outside core-archaeological journals – such as ancient history and epigraphy as well as language domains that are crucial for the field, German and French, but which often circulate in fairly isolated contexts. Places of publication in 2016 therefore also included: *American Journal of Archaeology*, *Chiron*, *Syria* and *Zeitschrift des Deutschen Palästinavereins*.

Furthermore, a research-communication anthology was published in February 2017 together with the opening of an exhibition at the Museum of Ancient Art at Aarhus University,



The 2016 excavation team (Photo: Danish-German Jerash Northwest Quarter Project).

which communicated the high-definition approach of the project as well as several of its results so far to the broader public.

Funding for the project and its various methodological studies comes from the Carlsberg Foundation, the Danish National Research Foundation, Deutsche Forschungsgemeinschaft (DFG), EliteForsk (Danish Ministry of Higher Education and Science) and H. P. Hjerl Hansens Mindefondet for Dansk Palæstinaforskning.

The team consisted of the two directors, Professor Dr. Achim Lichtenberger and Professor Dr. Rubina Raja; head of the field team, PD Dr. Georg Kalaitzoglou; head of the registration, Assistant Professor Dr. Heike Möller; Conservator Margit Petersen (Viborg); and the field and registration team: Christian Braeck, Charlotte H. K. Christensen, Malene Byø, Philip Ebeling, Holger Fleischer, Max Herbst, Gitte L. Hjortlund, Jesper V. Jensen, Marion Jobczyk, Signe Krag (assistant professor), Signe B. Kristensen, Hans-Peter Klossek, Mie E. Lind, Kevin Luijer, Line E. Nielsen, Mette N. Pedersen, Alex H. Peterson (PhD student), Julie T. Raunstrup, Alexander Reso, Michael Schwab, Kristine Thomsen (PhD student) and Steff E. Wiklund.

Dr. Holger Schwarzer (Westfälische Wilhelms-Universität Münster) examined the ancient glass finds; a sampling project for geochemistry and environmental history research was conducted by Professor Dr. Ian Simpson (University of Stirling, Scotland), Associate Professor Dr. Søren Munch Kristiansen (Aarhus University, Denmark) and Postdoc Genevieve Holdridge (Aarhus University); Dr. William T. Wootton (King's College London) examined all finds relating to mosaic production; Dr. Christoph Eger examined the metal finds; and Architect Nicole Pieper looked at building structures.



Trenchmaster Kristine Thomsen instructing the local workers during the excavation (Photo: Danish-German Jerash Northwest Quarter Project).

Urban Life: Development of Mortar from a Diachronic Perspective

Directors: Achim Lichtenberger (Westfälische Wilhelms-Universität Münster) and Rubina Raja (UrbNet, Aarhus University)

Funding: The Carlsberg Foundation, the Danish National Research Foundation, Deutsche Forschungsgemeinschaft (DFG), EliteForsk (Danish Ministry of Higher Education and Science) and H. P. Hjerl Hansens Mindefondet for Dansk Palæstinaforskning

Project website: <http://projects.au.dk/internationaljerashexcavation/>

The 2012–2016 excavation campaigns of the *Danish–German Jerash Northwest Quarter Project*, Jordan, has revealed numerous building constructions that testify to the production, development and use of mortar in urban space and time. Evidence of different types of mortar use in Jerash reveals the gaps in our knowledge of this important construction material but also offers the potential for a diachronic understanding of mortar development from Roman times to the Islamic period.

Applying innovative new analytical methodologies based on integrated thin-section micromorphology, Scanning Electron

Microscopy (SEM) and energy dispersive X-Ray (EDX) analyses, it is possible to see variations in microscopic and sub-microscopic mortar architecture as well as contrasts in elemental compositions. These analyses permit the identification of materials contributing to mortar “recipes” and shed light on how the mortar was constructed and applied, with variance explained by embedding in archaeological and environmental contexts. More broadly, our work demonstrates that by integrating analytical methods from geosciences, we gain new insights into important aspects of city life and how different types of urban surfaces evolved with time.



Mortar set in resin before further processing for thin section and micromorphology (Photo: Kristine Thomsen).



Mortar still in situ on the west wall of the Mosaic Hall (Photo: Kristine Thomsen).

Glass from Gerasa: Recycling, Reuse and Reduce

Directors: Achim Lichtenberger (Westfälische Wilhelms-Universität Münster) and Rubina Raja (UrbNet, Aarhus University)

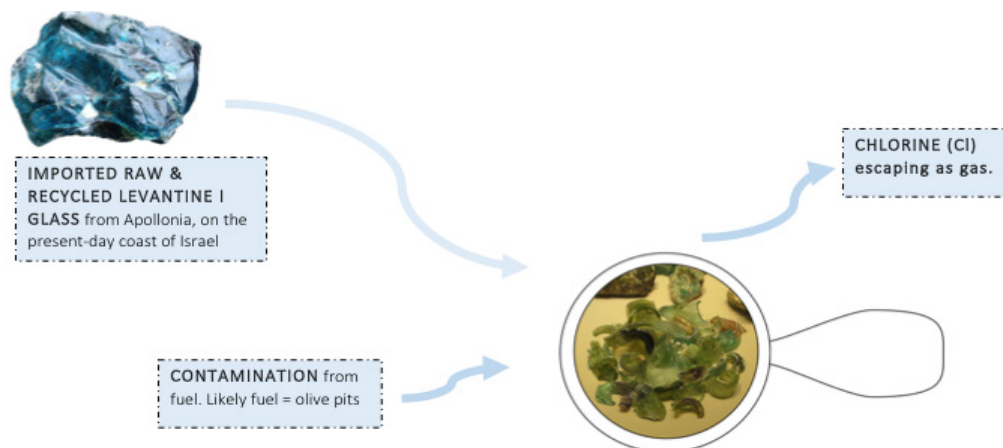
Funding: The Carlsberg Foundation, the Danish National Research Foundation, Deutsche Forschungsgemeinschaft (DFG), EliteForsk (Danish Ministry of Higher Education and Science) and H. P. Hjerl Hansens Mindefondet for Dansk Palæstinaforskning

Project website: <http://projects.au.dk/internationaljerashexcavation/>

In 2016, a project was finalised on the chemical analysis of a selection of glass artefacts from the ancient city of Gerasa, modern Jerash in Jordan. The study highlighted some very strong systematics relating to the import and recycling of this ware group within Gerasa that have not previously been observed for contemporary sites, and these observations laid the foundation for a larger glass study in 2017.

The sheer amount of glass finds in Gerasa, both as artefacts and chunks of raw glass, show that glass working and glass blowing constituted an important industry. There is also evidence for organised glass collection, possibly for recycling, in glass heaps. The chemistry of the glasses supports these field observations and show that the majority of the glasses are Byzantine of the type Levantine I, imported from production centres along the present-day Israeli coast, ancient Judaea. It is also clear that recycling was well organised, and that every time the glasses were remelted for new purposes, they became progressively more contaminated by potassium, phosphorous, zirconium and other minor elements stemming from the furnace environment.

Such contamination has been observed for glasses from Roman times, but here, calcium was an important contaminant as well. The absence of calcium contamination in the Gerasa glasses therefore indicates that the fuel used for the furnaces must have been different and therefore most likely was not wood. Logically, this makes sense, given the arid conditions in North Jordan, and our conclusion is that olive pits, left over from the significant olive-oil production in Gerasa, might have been used as fuel; olive pits are low in calcium, they are frequent finds and an excellent fuel that burns at high temperature due to the leftover oil in archaeological contexts. We plan to follow up this work, and a major study is underway on the glasses that will, among other things, include firing experimental studies on the olive-pit finds to determine how their ashes would contaminate glass, and what it can tell us about the conditions under which the glasses were remelted.



Sketch of remelting furnaces at Jerash. Glass recycling led to potassium and phosphorous contamination from the ash in the remelting furnaces while chlorine from the glasses escaped (Photo: Ian Freestone; Figure: Jannie K. Larsen).

Understanding Complex Urban Space and Development through Geochemistry: The Case of Jerash in Jordan

PhD student Kristine Thomsen

Directors: Achim Lichtenberger (Westfälische Wilhelms-Universität Münster) and Rubina Raja (UrbNet, Aarhus University)

Funding: The Carlsberg Foundation, the Danish National Research Foundation, Deutsche Forschungsgemeinschaft (DFG), EliteForsk (Danish Ministry of Higher Education and Science) and H. P. Hjerl Hansens Mindefondet for Dansk Palæstinaforskning

Project website: <http://projects.au.dk/internationaljerashexcavation/>

Kristine Thomsen's project combines classical archaeology with geochemical methods in order to create a high-definition method for studying ancient building materials – in this case, mortar and plaster. The project relies extensively on the collaboration with the Danish-German Jerash Northwest Quarter Project in Jordan, directed by Professor Rubina Raja (UrbNet, Aarhus University) and Professor Achim Lichtenberger (Westfälische Wilhelms-Universität Münster), which has provided the empirical data.

Jerash is a complex study site where occupation is evidenced from Late Hellenistic to medieval times. The city grew immensely throughout the Roman period, but the Late Antique and Islamic periods constitute times of urban flourishing. The Northwest Quarter was densely settled over a long period of time and provides the ultimate backdrop of this project, where a development in the settlement history can be traced both in detail and in a diachronic perspective.

The data for this project consists of mortar and plaster samples collected during the 2016 excavation in Jerash. Samples from previous excavations have also been retrieved in order to give a full picture of the site. The strategy behind the sampling programme was to cover the different areas with a large material range to assess the range of function and material use. The samples fall into three categories: 1) inside use of mortar and plaster, 2) outside use of mortar and plaster and 3) mortar and plaster used in connection with water.

Samples will be subjected to chemical analysis, petrography and thin section micromorphology. This will provide information on the different ingredients in the building materials, and how they change over time. The results from this will be analysed in a cultural-historical and archaeological perspective.



Mortar floor from Trench X, Jerash 2016
(Photo: Danish-German Jerash Northwest Quarter Project).



Ian Simpson (University of Stirling), Genevieve Holdridge and Kristine Thomsen (both UrbNet, Aarhus University) taking mortar and plaster samples from Trench S, Jerash 2016 (Photo: Danish-German Jerash Northwest Quarter Project).

The Geoarchaeology of Jerash, Jordan

Postdoc Genevieve Holdridge

Directors: Achim Lichtenberger (Westfälische Wilhelms-Universität Münster) and Rubina Raja (UrbNet, Aarhus University)

Funding: The Carlsberg Foundation, the Danish National Research Foundation, Deutsche Forschungsgemeinschaft (DFG), EliteForsk (Danish Ministry of Higher Education and Science) and H. P. Hjerl Hansens Mindefondet for Dansk Palæstinaforskning

Project website: <http://projects.au.dk/internationaljerashexcavation/>



By examining and sampling off-site stratigraphy on Wadi Dayr, geoarchaeologists can reconstruct past land use and the paleoenvironment in the landscape surrounding the city (Photo: Genevieve Holdridge).

Genevieve Holdridge works on a project examining the geoarchaeology of the large Greco-Roman city Jerash, ancient Gerasa, in the semi-arid environment of northern Jordan. The present city of Jerash is the location of one of the major Roman urban centres of the Syrian Decapolis. The city was continuously occupied from the Hellenistic period to the Umayyad period (2nd century BC to 8th century AD). The city is located along the Wadi Dayr, which feeds into the Zarqa River. The area is affected by the tectonic activity of the Dead Sea Rift zone.

During the city's long occupation, various structures were built to manage surface water, and slopes were managed by constructing terraces on and off site. The long history of the city was partially enabled by food and water security, though more research is needed to understand land and water use. The urban and extra-urban fluvial record along the Wadi Dayr has been studied in order to better understand urban adaptation and environmental impact of on- and off-site water and land management. By embracing an interdisciplinary approach that incorporates archaeological, paleoclimatic and geomorphological information, the aim is to discern natural and anthropogenic influences on land and water management.



View of Wadi Dayr. Much of the landscape has been managed over the millennia including contour terraces to stabilise slopes (Photo: Genevieve Holdridge).

Ceramics in Context

Director: Rubina Raja (UrbNet, Aarhus University)

Funding: The Carlsberg Foundation

Project website: <http://projects.au.dk/ceramics-in-context/>

110 years of excavation in Jerash, ancient Gerasa, Jordan, has brought to light an immense amount of finds. These have to undergo analysis, not only in regard to typo-chronological methods but also with a view to a contextualised approach and attempts at synthetic studies.

More than 820,000 sherds have been studied within the framework of the *Danish-German Jerash Northwest Quarter Project* over the past five years of excavation – an enormous quantity of finds, highlighting the scale of pottery output in Gerasa and showing its characteristics as a “mass-production site” of pottery in Antiquity.

Basic research such as the implementation of a standardised typology to establish a one-solution description of finds was brought to the fore over the past years. In collaboration with the Bergbaumuseum in Bochum and Freie Universität Berlin, archaeometric studies helped to characterise the “fingerprint”

of locally produced wares in Jerash, using elemental mass spectrometry and petrographical analyses. The results show that the preconditions for producing pottery in Jerash were excellent in ancient times; the clay for pottery making was neither levigated nor tempered and could be used as it was found in-situ and on site, which made for optimal conditions.

The identification of the local Jerash ware will lead to a better understanding of local/regional exchange in and around the Decapolis cities. Thus, finds produced in Jerash will be able to be identified more easily when found at other sites, and circles of distribution will become more obvious, e.g. how far did the goods travel, and how intense was the local/regional exchange network? Up until now, it seems that Gerasa mainly produced for the local market, with regional circulation taking place on a small scale. Consequently, only a few imports reached the city, providing the people with fish sauce, wine and other imports from the Eastern and Western Mediterranean.



The student registration team processing objects (Photo: Alexander Reso).



Ceramics pieces (Photo: Rubina Raja).

Over the past years, *Ceramics in Context* has sought to apply contextualisation approaches, in addition to network approaches, to the study of Jerash, thus working towards a better understanding of the function of sites and a better insight into the daily life of people.

The preconditions in Gerasa are outstanding, and research on Middle Islamic structures and finds also illuminate a period of time that has so far been almost completely unknown in Gerasa. Destruction layers, resulting from a devastating earthquake in 749 CE, show the repertoire of pottery used immediately prior to the catastrophe. Analysing these pieces of evidence helps us to narrow down existing typo-chronological sequences of finds based on their precise date of occurrence; however, it also gives us insight into the function of buildings, the repertoire of finds and their use at a certain point of time in history.

Disciplines such as geoscience, archaeometry, archaeobotany, archaeozoology and physics are integrated into the pottery analyses, resulting in a highly refined and interdisciplinary approach. The implications of these studies have already yielded fruitful results. The first results have led to a better understanding of the local pottery production itself as well as the local, interregional and global dynamics of the city.

Further research on regional and supra-regional networks embedded into an interdisciplinary approach is expected to result in an even better understanding of markets and exchange structures on local, regional and global levels. In combination with archaeometric analyses, pigment studies, content analyses, new dating methods and a detailed analysis of the natural prerequisites in Gerasa and its closer surroundings, pottery results are expected, based on which we will be able to partly reconstruct what was lost over the past 1,000 years in Jerash, ancient Gerasa.



Finds after cleaning, awaiting further processing (Photo: Charlotte H.K. Christensen).

Pottery Production in Jerash

Assistant Professor Heike Möller

Director: Rubina Raja (UrbNet, Aarhus University)

Funding: The Carlsberg Foundation

Project website: <http://projects.au.dk/ceramics-in-context/>

2017 marks the 110th anniversary of excavations in Jerash, ancient Gerasa. However, the long tradition of diggings, bringing to light immense amounts of finds that have been analysed in broader synthetic studies, have very often disregarded a view to a contextualised approach. The research project *Ceramics in Context* aims to fill those gaps and investigate ceramics in context. Its approach lays the foundation for a better understanding of the settlement history in the Northwest Quarter of Jerash.

Two main research questions have guided the past few months of Heike Möller's research: Jerash's embedding into micro networks, i.e. markets on local /regional levels, and on macro scale, i.e. its networks within the Eastern and Western Mediterranean.

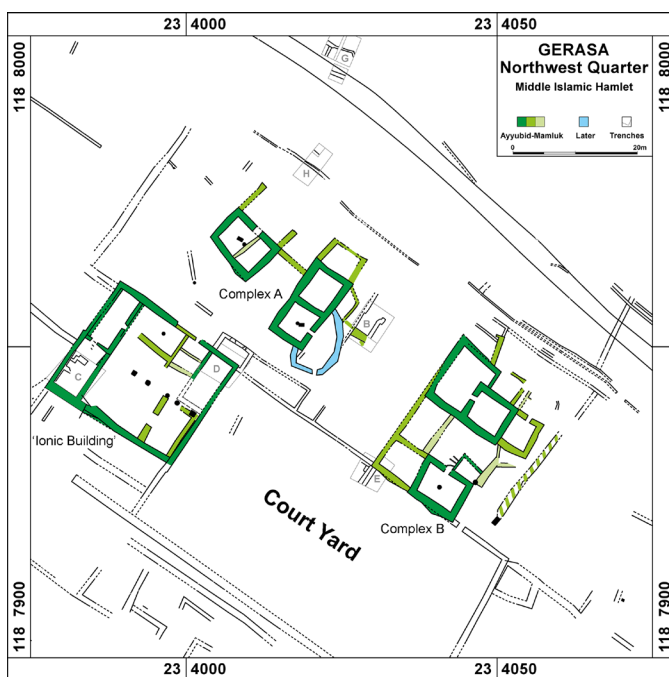
Jerash was a "mass-production centre" of pottery from Hellenistic/Early Roman times up to Early Islamic times. To trace the radius of distribution, it is useful to establish a geochemical fingerprint of the local wares, which will make it possible to identify the characteristic fabrics made in Jerash at surrounding sites. This, in turn, will lead to a better understanding of local/regional exchange in and around the Decapolis cities. Imported

finds, such as amphorae and tableware, transported from as far as the outermost west of the Western Mediterranean to Jerash indicate a global exchange network.

To study the global and interregional dynamics, interdisciplinary research and data exchange are crucial, as is the employment of different scientific techniques. Disciplines such as Geoscience, Archaeobotany, Archaeozoology and Physics are integrated into the pottery analyses to make up a high-definition approach. The implications of these studies are promising. Results indicate that Jerash's production was mainly intended for the local market, with regional supply to a minimum extent. Only few imports from far away reached the city, providing people with fish sauce, wine and other deli food. Even though the imports are rare, compared to the local "mass production" of pottery, they prove that Jerash was embedded into an exchange network on macro-market level. The intention is to expand the study on the local pottery production to analyse distribution patterns in a more detailed way and to intensify the study of the ceramics in context to get a better understanding of people's daily life in Jerash.



Pottery sherds from Jerash (Photo: Danish-German Jerash Northwest Quarter Project).



Layout of the Middle Islamic hamlet in the northwest quarter of Jerash (Copyright: Danish-German Jerash Northwest Quarter Project).

Over the past year, Alex H. Peterson's PhD project, as part of the Ceramics in Context project, has made great strides in furthering research on Middle Islamic ceramics by examining the ceramic material from a Middle Islamic hamlet in the Northwest Quarter of Jerash. Research on Islamic pottery in Jordan and the Levant is still at an early stage of development, and many studies publish ceramics without contextualising them or interpreting them in meaningful ways. For this reason, Alex H. Peterson has made an effort to develop a more precise ceramic chronotypology for the Ayyubid-Mamluk period by focusing on an individual site, Jerash. After constructing a chronotypology and examining the pottery at a local level, it can then be placed in its regional context in order to gain insight on the social history of a region, production and consumption, lines of trade, and cultural regionalism. Along with this, it is important to consider what the pottery was used for. Considering aspects of diet or food and eating trends is necessary to better understand and contextualise the pottery. By combining both the empirical analysis of ceramics and the deeper meanings of pottery use, their social and economic implications will be understood in a way which can take research on this topic much further.

Middle Islamic Pottery

PhD student Alex H. Peterson

Director: Rubina Raja (UrbNet, Aarhus University)

Funding: The Carlsberg Foundation

Project website: <http://projects.au.dk/ceramics-in-context/>

At the conclusion of the 2016 excavation campaign, the project now has the potential to revolutionise our understanding of the settlement history of Jerash during the Middle Islamic period. Excavations in the substantial Middle Islamic residential complex in the northwest quarter have documented several chronological floor layers. Analysing the material remains from these layers, and from the other trenches, has shed light on the chronology and function of the complex over a period of several generations. Imported pottery found at the site has also now been identified, originating from Palestine, Egypt, Syria and as far east as China. As such, the Middle Islamic hamlet in Jerash is clearly not an isolated complex but a nodal point in a larger network which connects the settlement to urban and rural landscapes regionally and globally. Since little has been published on the pottery or settlement history from this region of Jordan during this period, the pottery assemblage from Jerash will be fruitful for further analysis of the ceramic material from other sites within Northern Jordan. The final synthesis produced from this project will be important in creating a better understanding of a period of Jerash's settlement history, which until now, has been largely unexplored and not well understood.

Hand-made geometric-painted (HMGP) serving dish from Trench T, Jerash, Jordan (Photo: Danish-German Jerash Northwest Quarter Project).

Urban Metals in Context

Assistant professor Thomas Birch

The production, consumption and exchange of metals continue to define part of the archaeological make-up of urban places. Thomas Birch is collaborating with UrbNet projects and researchers to study metallurgical remains and 'connected materials' from different urban contexts. The different research projects will address how raw metals were sourced and sometimes transformed in urban contexts as well as how artefacts were produced and moved to (and from) such places.

Tom has recently started studying the metalworking remains from Viking Ribe as well as reviewing the metal artefacts from the *Danish-German Jerash Northwest Quarter Project*. He also continues to work on the metallurgy remains from Iceland during the period of settlement. By analysing the technology and origin(s) of lead, copper alloy, iron or precious metal artefacts, the combined research projects aim to further understand how polymetallic industries and remains help characterise urban sites.



Tom documenting Viking crucibles from Ribe at the Museum of Southwest Jutland (Photo: Vana Orfanou).

Archaeometallurgy of Urban Landscapes

Postdoc Vana Orfanou

Vana Orfanou is an archaeologist trained in European and Near/Middle Eastern archaeology from prehistory to medieval times, specialising in archaeometallurgy. In the past, she has studied metallurgical assemblages from the Eastern Mediterranean and the broader Iranian world, with a diachronic scope from late prehistory to the 15th century AD. Core aspect of her research focuses on the social embeddedness of ancient metallurgical practices and how past technologies have formed and have been formed by contemporary communities.

As a postdoctoral scientist at UrbNet, Vana Orfanou is involved in a series of archaeometric projects focusing on the investigation of past technologies. Example projects include the detailed examination of urban patterns, their development and diachronic change, as reflected in the metallurgical production of Viking-

period Denmark and Roman Jerash, Jordan. By addressing the social role of metallurgy, discussion of results will promote questions on movement of people, materials, ideas and knowledge as well as on the social aspects of technological choices during past production chains.

At the same time, Vana Orfanou's work focuses on the analyses of isotopes found in metal objects and metallurgical by-products from several archaeological sites and chronological periods in Europe, Near East and North Africa, with the aim of refining existing provenance methods and protocols and further exploring new ones. Such work will promote our understanding of raw material provision, transfer of technological knowledge as well as patterns of circulation and recycling of ancient metals in urban contexts.



Examining crucibles from Ribe, using a handheld XRF (Photo: Vana Orfanou).



Doliche, cleaning of the mosaic floor of a Late Antique villa complex (Photo: Peter Jülich).



Doliche, excavation of a Late Antique villa complex (Photo: Michael Blömer).

The Doliche Urban Excavation Project

Directors: Michael Blömer (UrbNet, Aarhus University) and Engelbert Winter (Westfälische Wilhelms-Universität Münster)

Funding: Deutsche Forschungsgemeinschaft (DFG)

Project website: <http://www.doliche.de/>

Doliche was an ancient city of North Syria. Today, the site is located close to the sprawling Turkish city of Gaziantep, not far from the Syrian border. Doliche is mainly known for its main god, Iuppiter Dolichenus; in the second century CE, his cult became popular among Roman soldiers and spread over large parts of the Roman Empire. Between 2002 und 2015, excavations were carried out in the main sanctuary of Iuppiter Dolichenus, which is located on a mountain outside the city. The results of this work significantly improved our knowledge of the cult of Iuppiter Dolichenus and the material culture of this part of ancient Syria.

In 2015, the focus shifted from the sanctuary to the ancient city area, which spreads across a large shallow hill at the edge of a fertile plain. Despite the city's importance, the huge site has never attracted attention. Therefore, Doliche offers perfect conditions for a new research project on the urbanism of ancient Syria. To exploit this opportunity and to explore the ancient city and its cultural environment in a holistic way, *Forschungsstelle Asia Minor*, Westfälische Wilhelms-Universität Münster, Germany, initiated a new urban excavation project in 2015, funded by Deutsche Forschungsgemeinschaft (DFG). Since 2015 when co-director of the excavation project, Michael Blömer, took up a position as assistant professor in Aarhus, the project has been closely affiliated with UrbNet and serves as a case study to test the narrative of urbanism in Syria from the Hellenistic to the Islamic period.

First soundings in the city proved very promising. In a number of test trenches on the south slope, well-preserved parts of a residential zone were uncovered. Most spectacular was the discovery of a high-status residential complex with beautiful mosaic floors; the multi-phase building was abandoned after an

earthquake in the Early Byzantine period. Further up the slope, small housing units of Late Antique date with good contexts provide much needed insight into the living conditions of that period.

In summer 2016, a geophysical survey was conducted to examine key areas of the city. Ground-penetrating radar was used to get a high-resolution image of the subsurface remains. The most important outcome was the identification of the ancient city centre in the eastern part of the city; the area is densely occupied, and it is possible to distinguish housing units, streets and public buildings.

In summer 2017, large-scale archaeological investigations will start with an international team of 45 specialists and students. Based on results of the geophysical survey, the focus will be on the ancient city centre. The aim is to explore the public buildings in order to achieve a better knowledge of the administrative structure and the political status of the city. Furthermore, the exploration of the residential area on the south slope will continue. In addition, an intensive survey within the city area will shed additional light on the spatial organisation and chronological development of the city. The high-definition approach developed by UrbNet plays an imminent role in all parts of the fieldwork. Context-based excavation techniques and the application of new scientific techniques will not only allow the reconstruction of high-resolution chronologies but also the testing of assumptions about urbanism and urban life in Syria in general.

The Doliche City Excavations 2016

Assistant Professor Michael Blömer

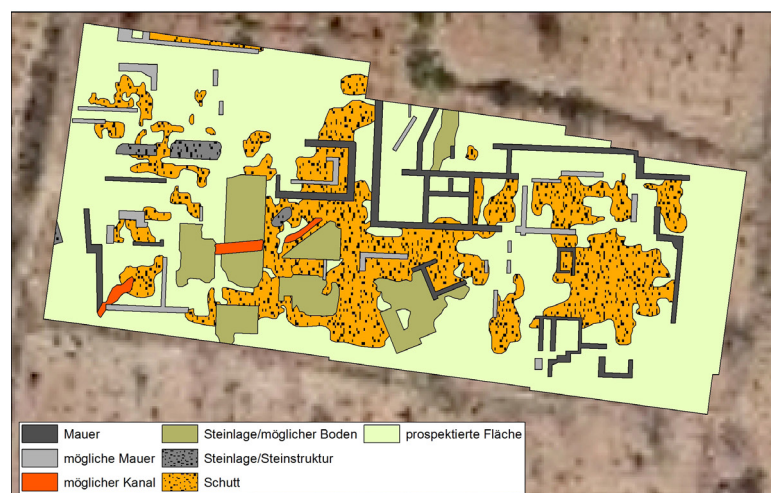
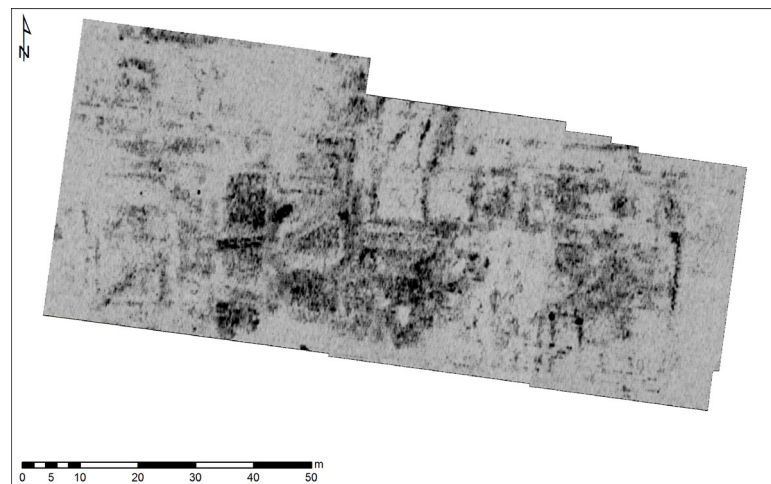
Directors: Michael Blömer (UrbNet, Aarhus University) and Engelbert Winter (Westfälische Wilhelms-Universität Münster)

Funding: Deutsche Forschungsgemeinschaft (DFG)

Project website: <http://www.doliche.de/>

By integrating contextual archaeology and scientific techniques, the Doliche excavation project does not only test and challenge the urban history of Doliche but also delivers new assumptions about urbanism in the Near East. The analysis of the finds is strictly contextual and merges archaeological and historical methods with scientific techniques.

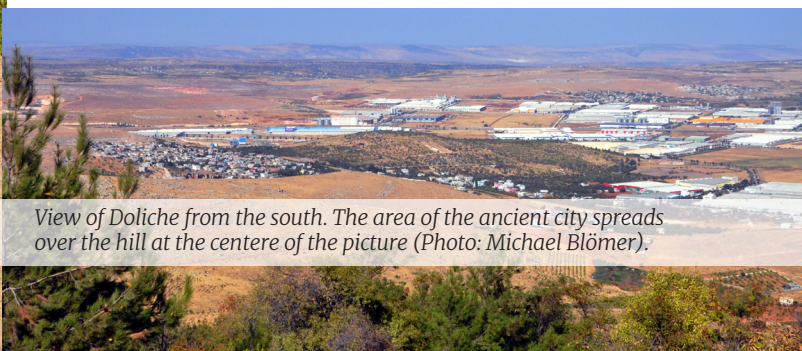
Extensive field activities were scheduled for summer 2016, but due to unfavourable circumstances, no permit for excavations was issued. It was, however, possible to conduct a geophysical survey in key areas of Doliche. Ground-penetrating radar was used to detect subsurface features. Based on the results of the survey, it is now possible to make detailed assumptions about urban texture, street grid and water management. Most exciting was the identification of the ancient city centre with monumental public buildings, among them the city archive. The discovery of the archive offers a unique opportunity to explore the municipal administration of Doliche. This is all the more important, as it will be the first ancient city archive to be excavated with a high-definition approach. Work at the site will resume in summer 2017 with a team of 35 students and researchers. Aside from the archive, residential areas of the city will be investigated, and an intensive survey will explore occupation patterns within the city area.



Grey-scale time slice graphic of the ground-penetrating radar survey (depth: 0.8–1.20 m) and interpretation of the subsurface features (Copyright: Forschungsstelle Asia Minor, Westfälische Wilhelms-Universität Münster).



Ground penetrating radar prospection in Doliche (Photo: Michael Blömer).



View of Doliche from the south. The area of the ancient city spreads over the hill at the center of the picture (Photo: Michael Blömer).

Fur and Skin Trade in Viking and Medieval Denmark

Assistant Professor Luise Ø. Brandt

Grant holder: Luise Ø. Brandt (UrbNet, Aarhus University)

Funding: The Carlsberg Foundation (Individual Postdoctoral Fellowship)

Fur and Skin Trade in Viking and Medieval Denmark is an interdisciplinary project drawing together archaeological and biomolecular evidence from leather skin and fur products with the aim of investigating animal skin and fur trade in Viking and medieval towns and examining how leather and fur communicated values of the purchaser and society in the earliest Danish towns.

The project looks at three main groups of materials: 1) fur from Viking-age (mainly) clothing, 2) early medieval leather shoes and 3) leather from an early Viking-age horse harness. The materials are initially species identified. Species identification is an essential prerequisite for studies of animal skin, as it determines the properties of the finished product. Skin flexibility, durability and appearance vary with the species of animal, its age and body parts. Here, fur and skin materials are species identified by proteomics methods. Apart from the properties, the species identification will contribute to the extensive debate on fur trade through the identification of the species and also the origin of animal fur and skin.

Species identity informs us about skin (and leather) properties; however, this will not provide a full picture of why a specific skin was chosen for a specific purpose. State-of-the-art studies of leather, therefore, aim at combining studies of leather properties with studies of their use, meaning and perception.

In this project, species identifications of Viking and medieval Danish leather are combined with analysis of the social and cultural aspects of fur and skin by theoretical perspectives of materiality (the relationship between object and human). This will provide further information on the demand for fur and skin products in early urban environments.

Fur and Skin Trade in Viking and Medieval Denmark is funded by the Carlsberg Foundation and Aarhus University.



Fragments of a 13th-century leather shoe from the excavation of medieval Odense at Thomas B. Thriges Gade, OBM 9776 x3130 (Photo: Kirstine Haase/Odense City Museums).

Towards the Making of a Town: A Study of Urbanity as Life Form and Practice in Medieval Copenhagen

PhD student Hanna Dahlström

Funding: The Velux Foundation, Museum of Copenhagen and UrbNet

The main aim of Hanna Dahlström's project is to analyse the early urban development of Copenhagen from c. 1050 to c. 1300 through a view of urbanity as practice. The PhD project is a part of the research and public outreach project *Urban Encounters: Mobility, Migration and Networks in Premodern Scandinavia* (UE), funded by the Velux Foundations. The idea forming the basis of UE is that the many encounters between people in different social roles that take place in towns characterise and help shape life in the towns. This idea is also what lies behind the questions and methods used in the PhD project. Hanna Dahlström uses new, contextually documented archaeological material from Copenhagen to explore which activities, people and networks have been important in the early urbanisation process. On a more general level, she wants to investigate what information about urbanity and urban development can come out of studying everyday practices. The detailed stratigraphical documentation of her source material, combined with Bayesian modelling of C14-dates, will be used to create chronological models, which will allow for a detailed reconstruction of the chronology of events.

"Households", "Craft and production" and "Infrastructure" are the three empirical work packages which will be used to unfold the development of daily practices and identify agents and networks. Through e.g. identifying activity zones and movement patterns and tracing the biographies of artefacts, the organisation of daily routines, social relations and networks of people and things can be untangled.

This year's work has focused on compiling data and undertaking initial analyses thereof, as well as testing and developing methods. The first of five articles making up the final dissertation is soon to be submitted. The article deals with the biography of early

Copenhagen, discussing the driving forces and agents involved in the town's initial development. The article serves as a basic chronological narrative for articles planned in 2017, which will focus on the empirical analyses of practices. During 2016, initial work with developing finer chronological models for the course of events at Town Hall Square also commenced.



Child's grave from a recently discovered cemetery at Town Hall Square, Copenhagen. The cemetery is one of two in Copenhagen which were in use in the years around AD 1100, the other one belonging to the closely situated church of St Clemens. The grave material is used to date some of the oldest activity in Copenhagen as well as to get information about the groups of people who lived here at the time (Photo: Museum of Copenhagen).

An Urban Way of Life: Urban Practices, Networks and Identities in Odense, 1100–1500 CE

PhD student Kirstine Haase

Funding: The Velux Foundation, Odense City Museums and UrbNet

Based on recent excavations of almost an entire block in the medieval town centre of Odense, older excavations and written sources related to medieval Odense, this project studies the urban way of life in Odense from the 12th to 16th century.

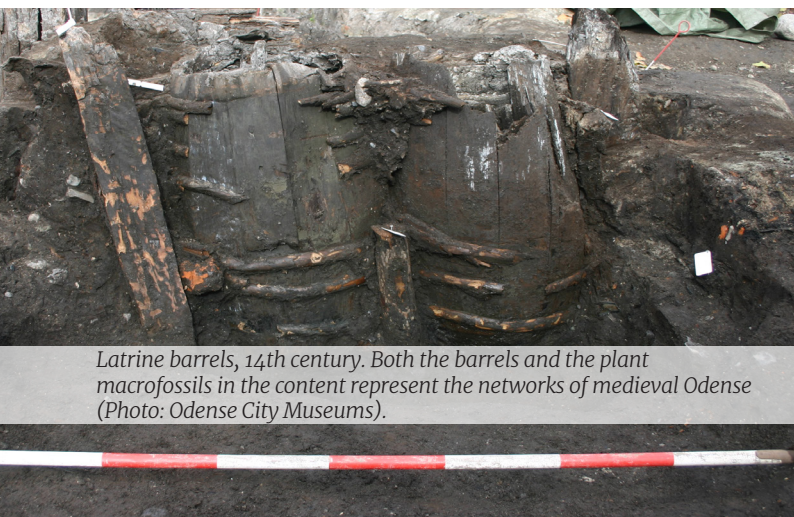
In the past year, research has focused on creating a higher resolution in the absolute chronology of the site in Odense by combining information on stratigraphy and dating of archaeological features through both finds, AMS 14C-datings and dendrochronological information. This information is processed by Bayesian Modelling in close collaboration with Associate professor and Director of the Aarhus AMS Centre Jesper Olsen from the UrbNet core group. The aim is to narrow down the existing datings and find out where to target additional AMS 14C-datings in order to get the best possible chronology of the site.

In the process of identifying social practices as they are expressed in an urban environment, the focus in the past year has been on the use of resources. The networks, both local and transnational, that these resources represent have also been an area of focus.

To enable this work, two research collaborations have been established. One is on species identification of leather and bone with Assistant professor Luise Ørsted Brandt (UrbNet, Aarhus University) and Conservator Jannie Amsgaard Ebsen (Odense City Museums). Another is with PhD student Neeke Hammers (UrbNet, Aarhus University) on plant macrofossils, both imported and local.

The results from these studies will be combined with the contextual information from the site, thus shedding light on the changes in networks and use of resources over time. The networks of the town are seen as having played a crucial role in shaping life in the town, as they have facilitated an exchange of not only material culture but also practices and norms.

In October, the first international conference in relation to the Velux-funded research and public outreach project *Urban Encounters: Mobility, Migration and Networks in Premodern Scandinavia* was held. It was a great success with participation of 40 scholars. The papers and discussions from the conference will serve as great inspiration in the coming year.



Latrine barrels, 14th century. Both the barrels and the plant macrofossils in the content represent the networks of medieval Odense (Photo: Odense City Museums).



Decorated bone comb, from a 14th-century levelling deposit (Photo: Odense City Museums).

Trade, Import and Urban Development

PhD student Neeke Hammers

The PhD project *Trade, Import and Urban Development* applies an archaeobotanical approach to the interpretation of network connections and urban development in northern Europe during medieval times, with a focus on the site Thomas B. Thriges Gade (Odense). The project is divided into two main parts: 1) analysis of archaeobotanical remains from urban contexts and 2) isotope analysis of these plant remains to gain insights into the provenance of exotic and economic plant foods.

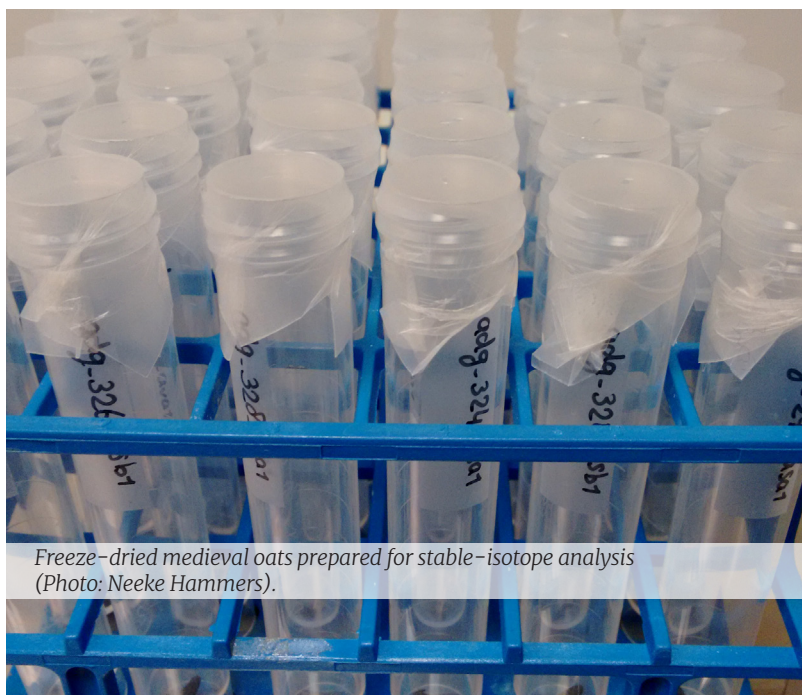
Archaeobotany can give insights into food economy, environmental changes, local preservation conditions and social and economic changes. Whereas the main focus of archaeobotanical research in general is on developments in food economy, the functional aspects of archaeobotanical remains may provide additional information on the processing and use of plant foods as well as local preservation conditions. Functional archaeobotanical analyses can thus aid in the understanding of urban development.

Isotope analysis, in particular analysis of strontium isotopes, can be used as a tool to indicate the provenance of archaeological materials. In this study, isotope analysis will focus on the spatial and temporal differences in provenance of exotic as well as native economic plants. Since isotope analysis within archaeology is predominantly focused on inorganic remains or organic remains of non-botanical origin, the field of archaeobotany provides a basis for further analysis and development.

The practical work of the PhD is focused on botanical remains from soil samples derived from excavations in Odense. The excavation at I. Vilhelm Werners Plads (OBM 9776) took place from May 2013 to September 2014. In that period, Odense City Museums excavated an area of 2300 m², located centrally in the medieval town. Good preservation conditions, combined with the

large size of the investigated area, have provided a rare insight into the development of a city quarter (late 11th century–16th century), from the street through backyards to the alleyway beyond, with an extensive finds assemblage and well-preserved structures, such as booths, houses, byres and stables, latrines, roads, fences and refuse depots.

The high research intensity of the city excavation of OBM 9776 provides an opportunity for a high-definition analysis of changes in botanical remains in a spatial and temporal context. The high intensity of the sampling allows for a detailed account of changes and developments in food economy and the local environment. Analysis of soil samples has revealed the presence of exotic plant species, namely grape (*Vitis vinifera*) and fig (*Ficus carica*). Fig and grape are rarely found at medieval sites in Denmark. The presence of these fruits is, therefore, significant for interpretations on urban economy and trade connections.



Freeze-dried medieval oats prepared for stable-isotope analysis (Photo: Neeke Hammers).

Commercialisation and Urbanisation on the Periphery of Medieval Europe

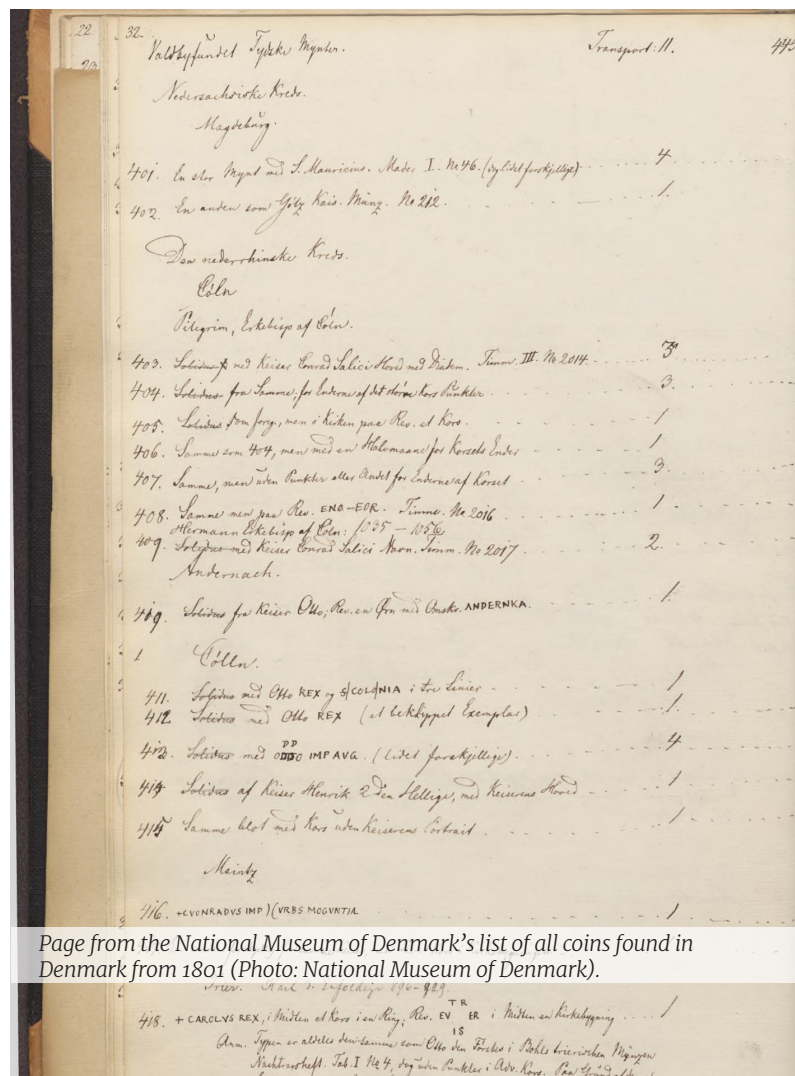
PhD student Olav E. Gundersen

The aim of this project is to present a new take on what has often been a mostly theoretically driven discussion on the role of towns in the commercialisation of medieval society. This year, the project has focused on the Danish towns in general and Ribe in particular, which has led to a sharpening of the research methodology and questions as well as some interesting results in the form of more detailed knowledge of fluctuations in the economic patterns of the High Middle Ages.

Olav E. Gundersen's research on commercialisation as a driver of fundamental social change is inspired by recent research into medieval England, but his working field is primarily Scandinavia. The project will approach the subject by looking at a large body of material that has been unearthed in the last couple of years but not considered comprehensively in the discussion, namely coins.

A wide period, from 1000–1450, and a large geographical area, Scandinavia, has been chosen, so that underlying trends are easier to spot at a time when the paucity of written sources and the highly varying precision of archaeological material conspire against the historian wishing to analyse societal changes on a more detailed level. To offset the negative impacts this may have in driving our questions towards things that only studies of the *longue durée* may answer, a couple of case studies will be conducted on some hand-picked towns. These case studies will attempt to integrate archaeobotanical and artefactual research that hold the potential of revealing agricultural changes resulting from increased commercialisation and urbanisation with studies of the coin material, and the main objective is to chart the spread of coins through new layers of society on a more high-definition scale than has previously been done, through stratigraphic analysis.

The macro study will consist of correlating the emergence of medieval towns with the numismatic material, which will hopefully reveal much more about what the urbanisation and commercialisation process actually was, who were able to partake in it, and when did it actually occur. The goal is to test the numismatic material up against other material – archaeological and written – and to use this to frame new, fruitful questions on the nature of urbanisation and commercialisation.



Page from the National Museum of Denmark's list of all coins found in Denmark from 1801 (Photo: National Museum of Denmark).

Urbanism, Networks and Objects in Eastern Africa

Lecturer Stephanie Wynne-Jones

Stephanie Wynne-Jones works on the archaeology of early urban societies in eastern Africa, primarily on the Swahili coast. As part of her work at UrbNet, she is developing a major new research agenda in the Zanzibar archipelago. This will explore the transition to urbanism at two key moments: in the 6th–7th century, when settled societies first appeared on the coast, and the 10th–11th centuries, when a new urban form based on permanent architecture appeared in this region. For each transition, the project will use high-definition techniques to provide an unprecedented level of detail on the ways that urban societies here exploited and transformed local environmental resources.

During 2016, a team from UrbNet visited Zanzibar to conduct preliminary assessments of the urban landscape, and more fieldwork is planned for 2017, as well as major grant applications to support detailed research.

In addition, Stephanie Wynne-Jones is involved in a series of other projects in the eastern African region. In 2016, she completed fieldwork on a long-term excavation project at Songo Mnara, Tanzania (<http://www.songomnara.rice.edu/>). This project explores the use of space at a Swahili stonetown of the 15th century, using a range of precision techniques such as geochemical analysis, phytolith analysis and micromorphology to access ephemeral and microscopic aspects of the archaeology. As part of the 2016 season, excavations were also conducted at neighbouring Kilwa Kisiwani to provide a detailed chronology for this high-profile site of the 9th century onwards. UrbNet provides the ideal setting to conduct this reassessment, enabling a detailed radiocarbon chronology to date the site and also to explore the marine reservoir effect in this region.

Finally, Stephanie Wynne-Jones has begun a new research project on the Comoros Archipelago. In 2016, she visited sites on Nzwani and Anjouan with a view to exploring networks of objects, religion and migration in the southern Indian Ocean.



Excavations at Kilwa Kisiwani, July 2016 (Photo: Mark Horton).



Excavations at Kilwa Kisiwani, July 2016 (Photo: Mark Horton).

Urban Transitions in the Zanzibar Archipelago

Assistant professor Federica Sulas

Federica Sulas's research deals with the responses of people and landscapes to environmental and social change over time, interpreting the impact of such processes on past urban dynamics and system resilience and exploring how this knowledge may inform on present and future challenges.

Her main research, in collaboration with Stephanie Wynne-Jones and other UrbNet researchers, revolves around a new project focusing on early medieval urban transitions in the Zanzibar archipelago. Using a combination of geoarchaeological techniques and contextual archaeological approaches, the team are investigating and comparing settlement stratigraphies at the earliest urban site of Unguja Ukuu and the later stonetown of Tumbatu. This project also provides materials for a second strand of research on the role of water in urban dynamics. The latter

is the focus of another research project at Great Zimbabwe in collaboration with I. Pikirayi (University of Pretoria) and others.

In addition to field research, Federica Sulas is also working on two main book projects. The first is a single-authored monograph on the long-term history of water, land and societies in Ethiopia, which follows the development of agro-ecological economies and urbanisation until the 1900s (for publication in 2018). The second book is an edited collection of essays on illustrating water-people relations over the long term and across different regions and contexts. Written by leading scholars around the globe, the essays range from the historical qanat systems of Iran and irrigation landscapes in Oman and Yemen to the urban water networks of the medieval Mediterranean and Asia (due for publication in 2017).



View of the Friday mosque on Tumbatu Island, Zanzibar, taken during exploratory research visit in October 2015 (Photo: Federica Sulas).



Sampling for soil analyses and dating of exposed occupation deposits of the early settlement of Unguja Ukuu, Zanzibar, during the exploratory research visit in October 2015 (Photo: Federica Sulas).

East African Pyro-Technological Processes and Networks in 7th-10th Century AD

PhD student Ema Bauzyte

Ema Bauzyte specialises in archaeometallurgy and pyro-technological processes in East Africa. This research project aims to conduct a comprehensive interdisciplinary study of archaeological material retrieved from 7th-10th-century contexts along the Swahili coast. The project is using iron slag – byproduct of iron smelting processes – as a main source of information regarding past technologies and raw materials used. Six sites have been identified on the islands off the coast of present-day Tanzania and Kenya and a site in hinterland Tanzania. Samples of iron slag from these sites have been obtained and will be subjected to a number of analytical techniques. This will be carried out, in order to identify the raw materials and technological procedures employed for iron smelting. Elemental and petrographic analyses

will be performed so as to determine whether the materials used have the potential to be obtained locally, or have to be imported from elsewhere. Furthermore, the project aims to define the thermodynamic processes occurring in the furnaces in order to evaluate the efficiency and efficacy of these techniques. The project will also investigate whether raw materials used and technologies employed are comparable across sites, indicating common material sources or suggesting that different raw materials were employed in different geographical locations. The project also aims to evaluate the extent to which technological know-how was isolated or shared across different landscapes and determine the extent to which sites were interconnected.



Ruins of Songo Mnara, 2016 excavation season (Photo: Ema Bauzyte).



Iron slag excavated at Dakawa 1993 PRV 1 332/135 Level 2. Bergen Museum collections (Photo: Ema Bauzyte).



'The Beauty of Palmyra' (Copyright: Palmyra Portrait Project).

The Palmyra Portrait Project

Director: Rubina Raja (UrbNet, Aarhus University)

Funding: The Carlsberg Foundation

Project website: <http://projects.au.dk/palmyraportrait/>

In 2012, the *Palmyra Portrait Project* was initiated by Professor Rubina Raja (UrbNet, Aarhus University) and Assistant Professor Andreas Kropp (University of Nottingham). The project is based at Aarhus University and funded by the Carlsberg Foundation and Aarhus University. The project set out to compile a comprehensive corpus of the Palmyrene funerary sculptures, estimated to be about 1,700 pieces scattered across collections and museums throughout the world, including Palmyra itself – both in-situ in the ancient graves and in the storages of various museums. Already early on in the project, it became clear that the estimation had been somewhat low, and by the end of 2015, the project database held approximately 3,000 Palmyrene funerary portraits – far beyond what any scholar had ever estimated.

The Palmyrene funerary portraits are the largest group of representations of individuals from the Roman period outside of Rome. They therefore constitute a crucial corpus of evidence to scholars of Antiquity. The portraits stem from a tightly defined chronological period, namely from between the late first century BCE until the late third century CE, when Palmyra was sacked by the Romans as a reaction to their disloyalty towards the Roman emperor through Zenobia's conquest of major parts of the Near East. The portraits were produced for about three hundred years, and three percent are dated precisely through inscriptions, some of which provide the names of the deceased and their family members.

Palmyrene funerary portraits came into being in a highly urban context. They came into fashion together with new grave monuments that were introduced in Palmyra in the first centuries CE, namely the so-called tower graves and the hypogea

(underground graves). These large funerary monuments, founded by family fathers, could sometimes hold more than 300 burials. Each were closed off with a representation of the deceased, sometimes with other family members. It is, so to say, the urban elite of Palmyra that we still today see before us, depicted in the funerary reliefs. When researching urban identities in Antiquity, the Palmyrene funerary portraits – as the largest corpus of portraits from Antiquity ever collected – give us an immense insight into urban fashions and trends, changing ideas and values as well as the way in which urban life was reflected through the traditions of the funerary sphere.

The *Palmyra Portrait Project* was prolonged in 2015 by an additional grant from the Carlsberg Foundation until the end of 2019. This has allowed for the employment of additional members to complement the project group, including an assistant professorship, two PhD scholarships as well as a number of research assistants. Furthermore, the project has hosted several international visiting students and researchers. A close collaboration with the Ny Carlsberg Glyptotek in Copenhagen forms part of the project. Furthermore, a collaboration on an upcoming Palmyra exhibition at the Getty Villa in Los Angeles forms part of the outreach activities of the project.

Within the project, a number of high-impact publications have already appeared, and a series of lectures, workshops and conferences have been organised. Such publications and events are planned for the coming years as well.

Women in Palmyra

Assistant Professor Signe Krag

Director: Rubina Raja (UrbNet, Aarhus University)

Funding: The Carlsberg Foundation

Project website: <http://projects.au.dk/palmyraportrait/>

Signe Krag's main area of research is the representation of Palmyrene women and family structures in Palmyra – a continuance of her PhD dissertation, in which she examined the representation of Palmyrene women primarily in funerary sculpture from the first century BCE to the third century CE. This also includes urbanism in Palmyra and the direct and indirect interactions with the surrounding geographical areas stretching from Rome and to the Far East.

Palmyra was a large centre for trading, which came into contact with various other cultures. This can be traced in the funerary portraits and in the urban city and its development. Portraiture from Palmyra is the largest quantity of representations of men, women and children from the Roman Imperial period outside of Rome. The study of the portraits offers a more widespread understanding of how identity was constructed in one of the Roman provinces.

The portraits of Palmyrene women are highly local in their overall appearance and display a large diversity in representation. Components such as the decorated headband, the combination of jewellery and brooches are extremely individualised and unique to the Palmyrene portraiture. Palmyrene women are most frequently portrayed alone, but often they are portrayed with their children, husbands, siblings or in larger family constellations. The portraits offer insight into the roles played by Palmyrene women in society and in the Palmyrene family structures.

Signe Krag's main approach is to analyse the portraits through their visual qualities in order to gain a broader understanding of the meeting with and reception of the portraits in ancient Palmyra.



Funerary Representations of Children in Roman-Period Palmyra

PhD student Sara Ringsborg

Director: Rubina Raja (UrbNet, Aarhus University)

Funding: The Carlsberg Foundation

Project website: <http://projects.au.dk/palmyraportrait/>



A loculus relief depicting a male bust, Nûrbêl with his son, Ša'ad, and daughter, Akme, dated to 230–250 AD, Ny Carlsberg Glyptotek, IN 2763 (Copyright: Ny Carlsberg Glyptotek).

NURBEL OG HANS BØRN
SAAN OG AQME
PALMYRA · 235 – 250 e. Kr.

The aim of this project is to examine the funerary portraits of children from ancient Palmyra, Syria. Until now, representations of children have not received much attention by scholars; however, this is about to change.

Only very few public/religious objects contain depictions of a child, and we must look to the funerary material in order to examine and understand the role of children in Palmyrene society. Statistics show that at least 7 percent of the total Palmyrene funerary corpus contain a child's portrait. Most young children are depicted on loculus reliefs in small group constellations, whereas the sarcophagus is the medium of the large family constellations, which include several family members. Occasionally, a child is portrayed alone in full figure on a loculus stele.

The children are recognisable by being rendered smaller than the adults with whom they are depicted as well as by certain attributes they often carry; however, occasionally, it is not that straightforward to identify children. Adults are also often portrayed together with their parents, especially on the sarcophagi; children are portrayed in a variety of constellations in the funerary sphere, and the aim of this project is to examine how the medium and its shape set boundaries for the display of the funerary portraits of young and adult children as well as why some constellations are acceptable in one medium and not in another. Furthermore, Sara Ringsborg wishes to examine children's role in the group constellations and the values expressed in these.

The Production Economy of Palmyrene Funerary Portraits

PhD student Julia Steding

Director: Rubina Raja (UrbNet, Aarhus University)

Funding: The Carlsberg Foundation

Project website: <http://projects.au.dk/palmyraportrait/>

The *Palmyra Portrait Project* aims to compile a comprehensive corpus of the Palmyrene funerary portraits, and today, the corpus consists of more than 3,000 portraits.

Julia Steding's PhD project addresses questions of the production economy of these, including a study of the technical aspects and the ways in which these contribute to a broader understanding of the chaîne opératoire involved. The project aims to outline and discuss how and to what extent large-scale production and production-to-stock constituted the main ways in which Palmyrene funerary portraits were prepared.

Therefore, it is necessary to see the techniques in a broader frame and compare the tool traces from Palmyrene portraits with those of portraits from the surrounding area in Syria and the big production centres of the East and the West. Based on this, it will be possible to reconstruct networks of trade as well as the spreading of specific knowledge of production techniques.

Furthermore, the project seeks to answer the question of how and when in the chain of production these portraits were tailor-made to fit either stylistic trends or the wishes of the customer, and when the customer became involved in the process of production.

The second part of the project addresses the placement of portraits in the graves. Most of the objects were not found in situ, so a reconstruction of their original location would add key information to our knowledge about the portraits. This is connected to the question of where the portraits were actually made – in workshops in the city or maybe at the graves, taking into consideration already made portraits – and again, tool traces and the influence of the costumer hold the key.



A loculus relief depicting a woman, 3rd century AD, Mead Art Museum Amherst, In. no. 1942.78 (Copyright: Palmyra Portrait Project, Ingholt Archives, PS 493).

to College Amherst, Mass.
Ann. Archaeology, 20(1967), p. 6.

The City of the Dead

Director: Sarah Croix (UrbNet affiliate, Aarhus University)

Funding: Danish Ministry of Culture's Research Committee, Beckett-fonden, Dronning Margrethe II's Arkæologiske Fond and G.

Fiedler og hustrus legat til fremme af botanisk og arkæologisk forskning

Website: <http://www.sydvestjyskemuseer.dk/da/aktuelle-projekter/de-does-by/>

The early medieval emporium of Ribe (c. 700–850) has since its archaeological discovery in the 1970s played a central role in the understanding of the urbanisation of Northern Europe. In contrast to other Northern emporia such as Hedeby, Birka, Kaupang and more recently Reric–Gross Strömkendorf, the cemetery connected to the site has received little attention. Therefore, the crucial question of who were the first urban settlers in Scandinavia and where they came from has remained largely unexplored. Since 2014, Aarhus University and Museum of Southwest Jutland have been conducting further archaeological excavations in the area (directed by Søren M. Sindbæk and Morten Søvsø, respectively), which had previously yielded most burial finds contemporary to the market-site. During the campaigns, the number of graves documented has nearly doubled; among them, a striking diversity in burial customs is observed, including some previously not seen in Denmark.

The research project *The City of the Dead* investigates Ribe's early population through its burial remains. The project combines a theoretically based archaeological approach with the study of the materiality of the burial rituals and a set of scientific analyses (osteology, Sr isotope analysis, AMS ¹⁴C dating, proteomics, tomography, micro XRF, ICP–MS, aDNA), conducted as sub-projects in collaboration with the Department of Conservation and Natural Science, Moesgaard Museum; the National Museum of Denmark; Center of GeoGenetics, University of Copenhagen; the Aarhus AMS ¹⁴C Dating Centre (AARAMS) and the Danish National Research Foundation's Centre of Excellence for Urban Network Evolutions (UrbNet).

The osteological analysis has revealed a population composed of men and women of all ages, including a large number of children,

which is highly unusual in a South-Scandinavian context during this period and which strengthens the hypothesis of a permanent population early on at the site. Furthermore, it has stressed the involvement of various species of animals in the elaboration of complex funerary rituals. The analysis of charred remains from the cremation graves has also shown a reliance on locally available wood species in the elaboration of the pyre, suggesting a strong anchorage in the local landscape and efficient methods of combustion. The remaining analyses are currently ongoing and will contribute to shed further light on the population's geographical mobility and on the changes in the use of the cemetery throughout the century or so of its existence.

The project is hosted by Museum of Southwest Jutland and funded by the Danish Ministry of Culture's Research Committee, Beckett-fonden, Dronning Margrethe II's Arkæologiske Fond and G. Fiedler og hustrus legat til fremme af botanisk og arkæologisk forskning, with the support of UrbNet.



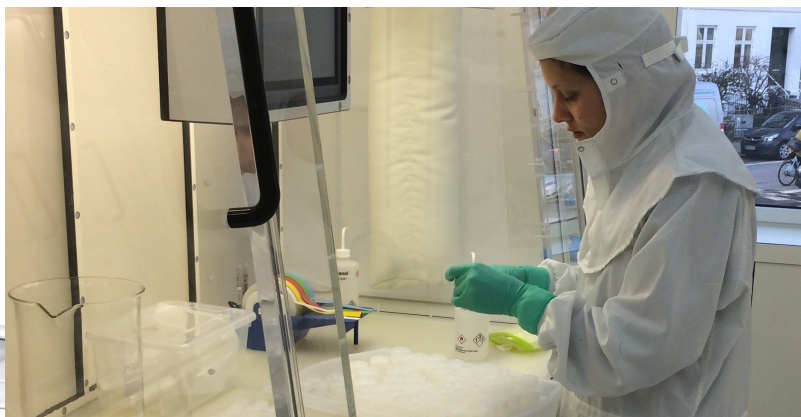
Sarah Croix and students excavating an eighth-century inhumation burial in Ribe 2015 (Photo: Søren M. Sindbæk).

AGIR Lab Update

2016 was an exciting year for *Aarhus Geochemistry and Isotope Research* (AGIR) platform, Department of Geoscience, supporting a vast array of UrbNet's projects under the guidance of core-group members Gry H. Barfod and Charles Leshner. AGIR celebrated its grand opening in early September, showcasing the new ultra-clean rooms and the instrumentation, including inductively couple plasma mass spectrometers for high-precision elemental and isotopic analysis, laser ablation micro-sampling, micro x-ray fluorescence (XRF) imaging and a portable XRF unit for field deployment. All the instruments have unique and cutting-edge applications in archaeological science.

In 2016, UrbNet utilised the AGIR facilities for studies of metals, metal slags, pigments, oven fragments, ceramics and glass from the major sites of Jerash in Jordan and Ribe in Denmark.

UrbNet postdoc Vana Orfanou is based in the Department of Geoscience and started work in September, focusing her research on metallurgy and provenance studies in Jerash and Ribe using a combination of petrographic, chemical and isotope techniques. Research assistant Erin Rosenberg, also fully based in Geoscience, began work in October to assist with sample preparation, micro-XRF analysis and data processing. Postdoc Genevieve Holdridge, Assistant Professors Thomas Birch and Federica Sulas and PhD student Ema Bauzyte also work on projects that rely on the AGIR facilities.



The AGIR picotrace metal-free clean laboratory is especially designed for sample preparation and purification of elements for isotope analysis. Here, conservator student Ingrid Sogaard is preparing beakers for Sr isotope purifications (Photo: Gry H. Barfod).

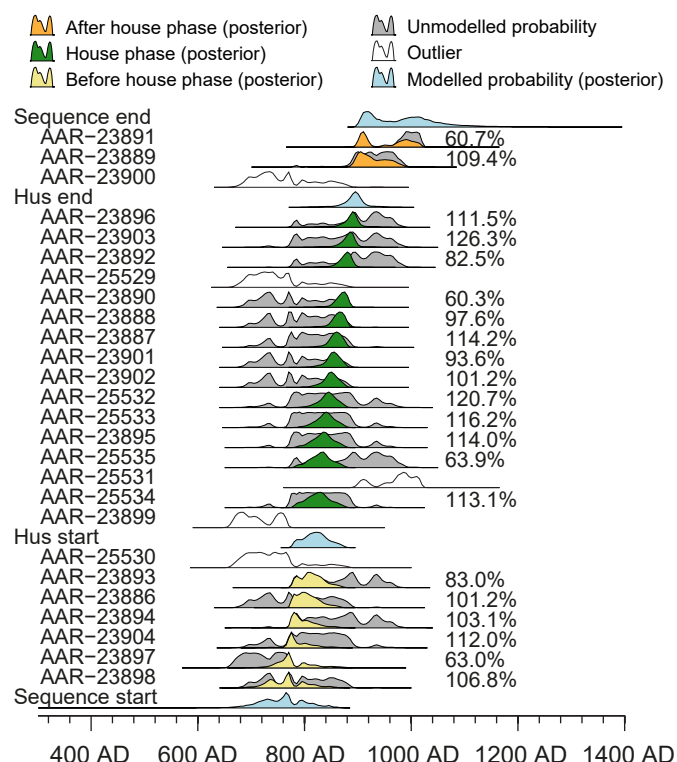


AGIR instrument with the Nu Plasma II MC-ICPMS, Agilent 7900 ICPMS and Resonetics 193 nm laser ablation instrument (Photo: Graham Hagen-Peter).

Aarhus AMS Dating Centre (AARAMS)

A sample being sputtered in the accelerator ion source (Photo: Jesper Olsen).

In 2016, AARAMS 14C-dated 39 samples in UrbNet related projects with 74 14C samples in progress. Our work has concentrated on high-definition analysis by exploring Bayesian statistical analysis. An example is a house from St. Clementsstræde in Aarhus. Here, tight stratigraphic information has narrowed down the lifetime of the house to be 60 years ± 35 . Thus, the house has been in use for about one generation. This work is a collaboration with Senior Curator Lars Krants (Moesgaard Museum).



Calibrated radiocarbon-age probability distributions of the samples from St. Clementsstræde in Aarhus. The coloured probability distributions arise when a Bayesian model is applied, which assumes the sample to be in stratigraphic order (Copyright: Jesper Olsen).

Samples submitted for radiocarbon dating by UrbNet

Radiocarbon samples 2013

Mortar	2
Total	2

Radiocarbon samples 2014

Charcoal	25
Mortar	18
Organic material	3
Plant charred	1
Total	47

Radiocarbon samples 2015

Charcoal	15
Grain	9
Mortar	15
Nutshell	4
Total	43

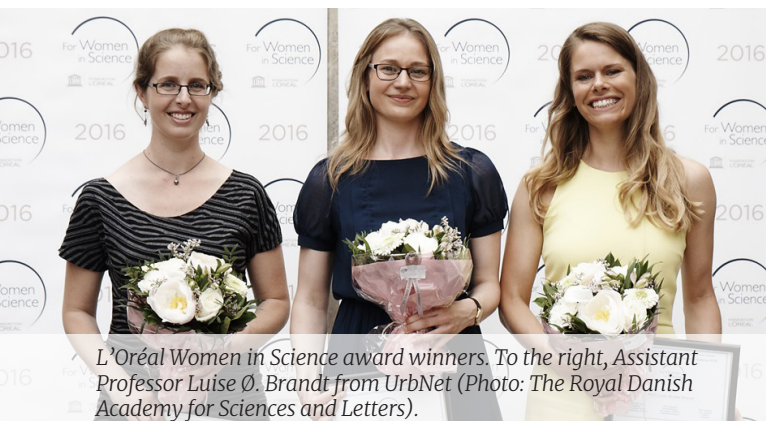
Radiocarbon samples 2016

Bone, tak	4
Bone, tooth	1
Charcoal	5
Grain	21
Leather	7
Wood	1
Total	39

Radiocarbon samples 2016 – 17 (being processed)

Bone	9
Charcoal	2
Organic material	1
Plant	1
Plant charred	61
Total	74

Awards



L'Oréal Women in Science award winners. To the right, Assistant Professor Luise Ø. Brandt from UrbNet (Photo: The Royal Danish Academy for Sciences and Letters).

In May 2016, Assistant Professor Luise Ø. Brandt received the *L'Oréal-UNESCO for Women in Science Award* for her interdisciplinary work on proteins and DNA in archaeological skin and textiles. The prize of 110,000 DKK will be spent investigating ancient proteinaceous paint binders, which have been used to bind colour pigments to ancient sculptures and architectural elements. The project will contribute to the understanding of ancient paint technologies and the original appearance of ancient art and architecture.

International Collaborations

In 2016, UrbNet/Aarhus University signed a Memorandum of Understanding with *Max-Weber-Kolleg* (the Max Weber Center for Advanced Cultural and Social Studies, MKW) at Universität Erfurt, Germany. The newly signed formal agreement consolidated the fruitful collaboration that already existed between the two institutions – hitherto represented by Professor Rubina Raja (director of UrbNet) and Professor Jörg Rüpke (vice-director of *Max-Weber-Kolleg*) – and laid the foundation for expanding the academic partnership. The agreement seeks to promote an ongoing exchange of scholars at both junior and senior level, with the intention of sharing expertise and fostering joint projects.

The two partner institutions committed to furthering their scientific relationship within a context of high-quality research in the social and human sciences.

As part of the collaboration agreement, Professor Jörg Rüpke has been awarded a 5-year renewal of his adjunct professorship at Aarhus University, now affiliated with UrbNet. A number of research and teaching stays have been planned, during which Jörg Rüpke will offer lectures, contribute to conferences as well as co-organise and co-teach (with Rubina Raja) a series of doctorate courses on historiography.

UrbNet also signed an ERASMUS agreement with Christian-Albrechts-Universität zu Kiel, Institute for Classical Archaeology, headed by Professor Annette Haug. The agreement allows exchange on MA, PhD and staff level and is considered key for the continuation of the existing partnership between the two institutions.

Events

Conferences and workshops

18–20 January 2016	<i>Biographies of Place</i> , Aarhus, Denmark
6 February 2016	<i>Representations of Women and Children in Roman-Period Palmyra: Part I</i> , Aarhus, Denmark
4–5 March 2016	<i>Natur und Kult in Anatolien: 5. Adressaten: Numen oder Gottheit</i> , Istanbul, Turkey
6 April 2016	<i>Epochalisation and Religious Innovations in Pre-Augustan and Augustan Rome</i> , Aarhus, Denmark
2–3 May 2016	<i>Byarkæologi: Før, Nu og i Fremtiden</i> (Byarkæologisk Møde), Ribe, Denmark
4 May 2016	<i>Viking Age: Fact and Fiction</i> (35. Tværfaglige Vikingsymposium), Aarhus, Denmark
5–7 May 2016	<i>The Language of Clay</i> , Nairobi, Kenya
13 June 2016	<i>Mamluk Pottery: Material Culture and History in the Middle Islamic Period</i> , Aarhus, Denmark
14–15 June 2016	<i>Jerash Field-Taining Workshop</i> , Aarhus, Denmark
16 June 2016	<i>Foreigners in the Viking- and Early Medieval Period: An Urban Perspective</i> , Aarhus, Denmark
21–23 June 2016	<i>Lived Religion in Metropoleis: A Comparative View</i> , Erfurt, Germany
3 October 2016	<i>Representations of Women and Children in Roman-Period Palmyra: Part II: Family Structures in Palmyra</i> , Aarhus, Denmark
12 October 2016	<i>Conspicuous Productions: Gerasa's Pottery Finds from Byzantine to Umayyad Times in Context</i> , Aarhus, Denmark
13–14 October 2016	<i>Towns as Meeting Places: Exploring Urban Encounters, Networks and People in Northern Europe 1000–1700 AD</i> , Aarhus, Denmark
14–15 November 2016	<i>Annual meeting of the Association of Danish Museums</i> (ODM), Vejle, Denmark

Lectures and seminars

2 February 2016	<i>A Cinderella story? The significance of female attributes in Palmyrene portraiture</i> Palmyra Portrait Project lecture series Dr. Maura K. Heyn (University of North Carolina)
23 February 2016	<i>Liubice – Old Lübeck – Lübeck: The shifting of an urban idea?</i> UrbNet lecture series Dr. Dirk Rieger (Hansestadt Lübeck)
1 March 2016	<i>Exploring the city of Doliche: Opportunities and challenges of a new urban excavation project at the Turkish-Syrian border</i> UrbNet lecture series Assistant Professor Michael Blömer (Aarhus University)
1 March 2016	<i>Kvinder og børn i palmyrensk gravskulptur</i> Palmyra Portrait Project lecture series Assistant Professor Signe Krag (Aarhus University)



From the conference "Towns as Meeting Places: Exploring Urban Encounters, Networks and People in Northern Europe 1000–1700 AD"
(Photo: Søren M. Sindbæk).

8 March 2016	Towns, trade and identities: Old questions and new approaches UrbNet lecture series Dr. Steve Ashby (University of York)
31 March 2016	The application of ancient protein analysis to archaeology UrbNet lecture series Professor Matthew Collins (University of York)
4 April 2016	The Egyptian and Mesopotamian approach Lecture series: <i>Ruins and their significance for urban history</i> Visiting Professor Alain Schnapp (Université Paris 1 Panthéon-Sorbonne)
5 April 2016	When is a city a city or can religious institutions serve as a marker of urbanity in Roman Hauran? UrbNet lecture series Dr. Katharina Rieger (Universität Erfurt)
5 April 2016	Regional perspectives on Roman women's portrait busts Palmyra Portrait Project lecture series Dr. Helen Ackers (University of Oxford)
11 April 2016	The ancient Chinese vision of city ruins Lecture series: <i>Ruins and their significance for urban history</i> Visiting Professor Alain Schnapp (Université Paris 1 Panthéon-Sorbonne)
18 April 2016	Natural Science ice breaker Associate Professors Søren M. Kristiansen and Jesper Olsen (Aarhus University)
18 April 2016	The Greco-Roman way of considering city remains Lecture series: <i>Ruins and their significance for urban history</i> Visiting Professor Alain Schnapp (Université Paris 1 Panthéon-Sorbonne)
19 April 2016	Student representations from Ribe UrbNet lecture series Stud.mag. Anna H. Lunde, Erik R. Christensen and Anders D. Hove (Aarhus University)
25 April 2016	The medieval East and West: Clash between pagan, Christian and Islamic memory Lecture series: <i>Ruins and their significance for urban history</i> Visiting Professor Alain Schnapp (Université Paris 1 Panthéon-Sorbonne)
26 April 2016	The crossroad of empires UrbNet lecture series Professor Anne Haour (University of East Anglia)
2 May 2016	The Renaissance confrontation with cities' pasts Lecture series: <i>Ruins and their significance for urban history</i> Visiting Professor Alain Schnapp (Université Paris 1 Panthéon-Sorbonne)



From the UrbNet centre day with presentations (Photo: Christina A. Levisen).

3 May 2016	Børneportrætter fra Palmyra Palmyra Portrait Project lecture series Sara Ringsborg (Aarhus University)
9 May 2016	The Enlightenment and the foundation of the modern vision of cities' pasts Lecture series: <i>Ruins and their significance for urban history</i> Visiting Professor Alain Schnapp (Université Paris 1 Panthéon-Sorbonne)
10 May 2016	Surveys in the hinterland: Studying the periphery of ancient towns in Northern Jordan UrbNet lecture series Professor Günther Schörner (Universität Wien)
17 May 2016	Creating a secure environment for urban growth: The Sasanian Empire's investment in military and civilian infrastructure in the north UrbNet lecture series Professor Eberhard Sauer (University of Edinburgh)
24 May 2016	Medieval money in Ribe: Town versus country UrbNet lecture series PhD student Olav E. Gundersen (Aarhus University)
7 June 2016	Writing a history of Danish medieval towns: Possibilities and problems UrbNet lecture series Professor Bjørn Poulsen (Aarhus University)
14 June 2016	The distribution of cultic places within Nabataean and Roman Petra UrbNet lecture series Dr. Laurent Tholbecq (Université Libre de Bruxelles)
13 September 2016	Universalism and particularism in urban studies UrbNet lecture series Professor Dagfinn Skre (Museum of Cultural History, Norway)
20 September 2016	Northern Journeys: Investigating long-range trade AD 900–1400 UrbNet lecture series Professor James Barrett (University of Cambridge)
20 September 2016	Secrets of the ice: An introduction to the field of Glacial Archaeology UrbNet lecture series Advisor Lars Holger Pilø (Kulturarv, Oppland Fylkeskommune, Norway)
27 September 2016	Urbanity and urbanism studies in Roman Moesia: Seeking an ideal or overemphasising categorisation? UrbNet lecture series Visiting PhD student Lina Diers (Universität Wien)
4 October 2016	Iron in high definition: Exploring past urban networks and societies through study of iron working UrbNet lecture series PhD students Hanna Dahlström and Ema Bauzyte (Aarhus University)



Students attending a lecture by Søren M. Sindbæk (Photo: Christina A. Levisen)

- 4 October 2016 On the Palmyrene table. Epigraphic sources and iconography of food at Palmyra
Palmyra Portrait Project lecture series
Dr. Eleonora Cussini (Ca' Foscari University of Venice)
- 11 October 2016 Early 12th century secular brickwork in Lübeck
UrbNet lecture series
Dr. Dirk Rieger (Hansestadt Lübeck)
- 25 October 2016 Human-environmental relations during the post-classic period in the Mixteca Alta, Oaxaca, Mexico
UrbNet lecture series
Postdoc Genevieve Holdridge (Aarhus University)
- 31 October 2016 Anomalocivitas: On urban evolutions
Lecture series: *Age of emporia: The archaeology of urban networks*
Professor Søren M. Sindbæk (Aarhus University)
- 1 November 2016 Multi-scale network perspectives on urbanization in the Bronze Age Aegean
UrbNet lecture series
Professor Carl Knappett (University of Toronto)
- 1 November 2016 Palmyra's little-known neighbour: Osrhoene and its sculpture
Palmyra Portrait Project lecture series
Assistant Professor Michael Blömer (Aarhus University)
- 8 November 2016 Small world: On urban networks
Lecture series: *Age of emporia: The archaeology of urban networks*
Professor Søren M. Sindbæk (Aarhus University)
- 8 November 2016 What's up with AGIR?
Seminar for postdocs and PhD students
Professor Charles Leshner and Assistant Professor Gry H. Barfod (Aarhus University)
- 15 November 2016 Boom and bust: On urban dynamics
Lecture series: *Age of emporia: The archaeology of urban networks*
Professor Søren M. Sindbæk (Aarhus University)
- 21 November 2016 Réseau opératoire: On urban activities
Lecture series: *Age of emporia: The archaeology of urban networks*
Professor Søren M. Sindbæk (Aarhus University)
- 22 November 2016 Close to the cradle: Hellenistic to Islamic glassfinds from Doliche
UrbNet lecture series
Dr. Constanze Höpken (Universität zu Köln)
- 28 November 2016 Intercitizens: On urban communities
Lecture series: *Age of emporia: The archaeology of urban networks*
Professor Søren M. Sindbæk (Aarhus University)



Discussions at the UrbNet retreat, Sandbjerg Manor, Sønderborg (Photo: Christina A. Levisen).

- | | |
|------------------|---|
| 29 November 2016 | Emotion and the City: the example of Pompeii
UrbNet lecture series
Professor Annette Haug (Christian-Albrechts-Universität zu Kiel) |
| 5 December 2016 | Entrepology: On urban margins
Lecture series: <i>Age of emporia: The archaeology of urban networks</i>
Professor Søren M. Sindbæk (Aarhus University) |
| 6 December 2016 | Important faces: grave reliefs with more than one individual (mainly) from the northern Roman frontier
Palmyra Portrait Project lecture series
Postdoc Niels Bargfeldt (The Danish Institute in Rome / Aarhus University) |

Other events

- | | |
|---------------------|--|
| 21 January 2016 | Open Audition, Aarhus, Denmark |
| 1 February 2016 | UrbNet opening reception (new centre facilities), Aarhus, Denmark |
| 11 April 2016 | Meeting with Aarhus University Rector, Aarhus, Denmark |
| 12 April 2016 | 1st Annual meeting with the Danish National Research Foundation, Aarhus, Denmark |
| 20 April 2016 | Visit by Centre for Textile Research (University of Copenhagen), Aarhus, Denmark |
| 15 June 2016 | UrbNet summer celebration, Aarhus, Denmark |
| 21 November 2016 | UrbNet centre day with presentations, Aarhus, Denmark |
| 12-13 December 2016 | UrbNet retreat, Sønderborg, Denmark |



Graves at the site of Kaole ruins 2016 (Photo: Ema Bauzyte).

PhD courses

7–8 April 2016

What is in a history? The significance of historiography to research

PhD programme, Faculty of Art, Aarhus University, Denmark

Organisers: Rubina Raja (Aarhus University) and Jörg Rüpke (Max-Weber-Kolleg, Universität Erfurt)

4–17 September 2016

Mediterranean religion in the Augustan period

Studienstiftung des deutschen Volkes (Sommerakademie), Olang, Italy

Organisers: Rubina Raja (Aarhus University) and Jörg Rüpke (Max-Weber-Kolleg, Universität Erfurt)

23–24 November 2016

Contextual archaeology as a high-definition tool

UrbNet PhD course/PhD programme, Faculty of Art, Aarhus University, Denmark

Organisers: Rubina Raja (Aarhus University)



The Artemis Temple in Jerash (Photo: Danish-German Jerash Northwest Quarter Project).

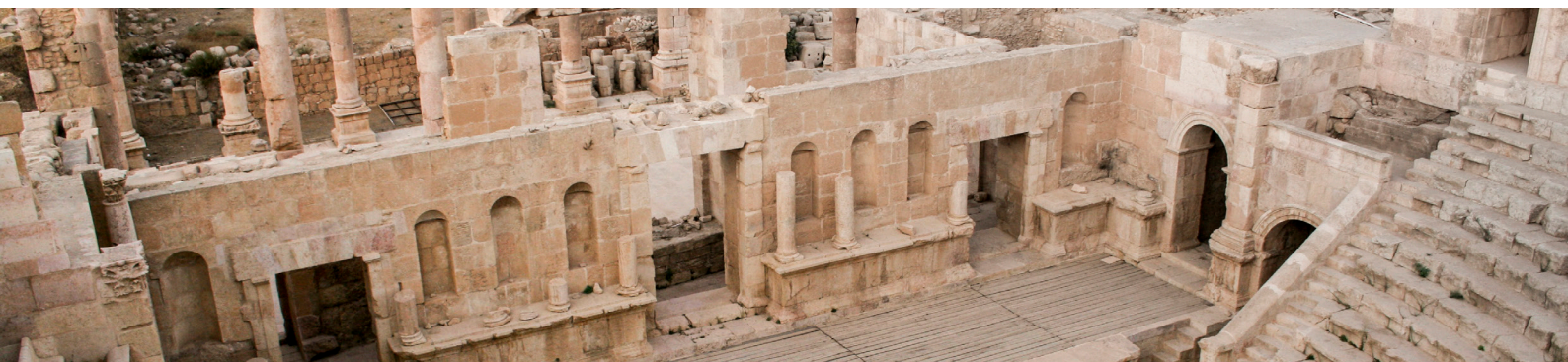
AU-external visitors

18–20 January 2016	Achim Lichtenberger (Ruhr-Universität Bochum, Germany)
18–20 January 2016	Barbora Wouters (Vrije Universiteit Brussels, Belgium)
18–20 January 2016	Dries Tys (Vrije Universiteit Brussels, Belgium)
18–20 January 2016	Eivind H. Seland (University of Bergen, Norway)
18–20 January 2016	Jette Linaa (Moesgaard Museum, Denmark)
18–20 January 2016	Johan Linderholm (Umeå University, Sweden)
18–20 January 2016	Jörg Rüpke (Max-Weber-Kolleg, Universität Erfurt, Germany)
18–20 January 2016	Karen Milek (University of Aberdeen, Scotland)
18–20 January 2016	Kirstine Haase (Odense City Museums, Denmark)
18–20 January 2016	Mateusz Bogucki (Polish Academy of Sciences, Poland)
18–20 January 2016	Michael Smith (Arizona State University, USA)
18–20 January 2016	Paul Sinclair (Uppsala University, Sweden)
18–20 January 2016	Pieterjan Deckers (Vrije Universiteit Brussels, Belgium)
18–20 January 2016	Sauro Gelichi (Ca' Foscari University of Venice, Italy)
18–20 January 2016	Sven Kalmring (Zentrum für Baltische und Skandinavische Archäologie, Germany)
18–20 January 2016	Tim Skuldbøl (University of Copenhagen, Denmark)
18–20 January 2016	Volker Hilberg (Stiftung Schleswig-Holsteinische Landesmuseum, Germany)
21 January 2016	Arne Anderson Stamnes (The NTNU University Museum, Norway)
21 January 2016	Duncan Keenan-Jones (University of Glasgow, Scotland)
21 January 2016	Federica Sulas (Istituto di Storia dell'Europa Mediterranea CNR/National Research Council, Cagliari, Italy)
21 January 2016	Joakim Kjellberg (Uppsala University, Sweden)
21 January 2016	Ny Björn Gustafsson (Roma Project, Gotland, Sweden)
21 January 2016	Pieterjan Deckers (Vrije Universiteit Brussels, Belgium)
21 January 2016	Stefan Smith (The British Institute in Amman, Jordan)
22–24 February 2016	Dirk Rieger (Hansestadt Lübeck, Germany)
1–4 March 2016	Georg Kalaitzoglou (Ruhr-Universität Bochum, Germany)
7–9 March 2016	Steve Ashby (University of York, UK)
29–30 March 2016	Stephanie Wynne-Jones (University of York, UK)
31 March 2016	Matthew Collins (University of York, UK)
1 April–30 June 2016	Alain Schnapp (Université Paris 1 Panthéon-Sorbonne, France) (UrbNet visiting professor)
4 April 2016	Jessica van 't Westeinde (Durham University, UK)
4–6 April 2016	Benjamin Sippel (Max-Weber-Kolleg, Universität Erfurt, Germany)
4–7 April 2016	Emiliano Urciuoli (Max-Weber-Kolleg, Universität Erfurt, Germany)



A view of the Aarhus University campus (Photo: Jørgen Weber).

4–7 April 2016	Georgia Petridou (Max-Weber-Kolleg, Universität Erfurt, Germany)
4–7 April 2016	Helen Ackers (University of Oxford, UK)
4–7 April 2016	Janico Albrecht (Max-Weber-Kolleg, Universität Erfurt, Germany)
4–7 April 2016	Katharina Rieger (Max-Weber-Kolleg, Universität Erfurt, Germany)
4–7 April 2016	Maik Patzelt (Max-Weber-Kolleg, Universität Erfurt, Germany)
4–7 April 2016	Richard Gordon (Max-Weber-Kolleg, Universität Erfurt, Germany)
4–7 April 2016	Valentino Gasparini (Max-Weber-Kolleg, Universität Erfurt, Germany)
4–8 April 2016	Jörg Rüpke (Max-Weber-Kolleg, Universität Erfurt, Germany)
6 April 2016	Christopher Hallett (UC Berkeley, USA)
6 April 2016	Françoise van Haepere (Université Catholique de Louvain, Belgium)
6 April 2016	Jesper M. Madsen (University of Southern Denmark, Denmark)
6 April 2016	Karl Galinsky (University of Texas at Austin, USA)
6 April 2016	Roberta Geremina (Istituto di Archaeologia e Storia dell'Arte, Italy)
11–12 April 2016	Stephanie Wynne-Jones (University of York, UK)
25–27 April 2016	Anne Haour (University of East Anglia, UK)
10 May 2016	Günther Schörner (Universität Wien, Austria)
17 May 2017	Eberhard Sauer (University of Edinburgh, Scotland)
13 June 2016	Achim Lichtenberger (Ruhr-Universität Bochum, Germany)
13 June 2016	Georg Kalaitzoglou (Ruhr-Universität Bochum, Germany)
13 June 2016	Basem al-Mahamid (Department of Antiquities of Jordan, Jordan)
13 June 2016	Jessica van 't Westeinde (Durham University, UK)
13–14 June 2016	Laurent Tholbecq (Université Libre de Bruxelles, Belgium)
15 June 2016	Anna Tjellden (Moesgaard Museum, Denmark)
15 June 2016	Leif Erik Vaag (Aarhus University Press, Denmark)
15 June 2016	Steffen T. Laursen (Moesgaard Museum, Denmark)
15 June 2016	Pieterjan Deckers (Vrije Universiteit Brussels, Belgium)
15–16 June 2016	Stephanie Wynne-Jones (University of York, UK)
20–22 June 2016	Barbora Wouters (Vrije Universiteit Brussels, Belgium)
1 September–10 December 2016	Ioanna Alexaki (Aalborg University, Denmark) (Student internship)
12 September–16 December 2016	Lina Diers (Universität Wien, Austria) (Visiting PhD student)
13 September 2016	Dagfinn Skre (Museum of Cultural History, Norway)
19–21 September 2016	James Barrett (University of Cambridge, UK)
20–21 September 2016	Lars H. Pilø (Kulturarv, Oppland Fylkeskommune, Norway)



The Northern Theatre, Jerash, Jordan (Photo: Wikimedia Commons CC BY-SA 3.0, Diego Delso, delso.photo)

20–23 September 2016	Julia Steding (Universität zu Köln, Germany)
2–4 October 2016	Agnes Henning (Humboldt-Universität zu Berlin, Germany)
2–4 October 2016	Andrea Raat (Ludwig-Maximilians-Universität München, Germany)
2–4 October 2016	Annika Backe-Dahmen (MünzenWoche, Germany)
2–4 October 2016	Eleonora Cussini (Ca' Foscari University of Venice, Italy)
2–4 October 2016	Mary T. Boatwright (Duke University, USA)
11–12 October 2016	Dirk Rieger (Hansestadt Lübeck, Germany)
12 October 2016	Achim Lichtenberger (Westfälische Wilhelms-Universität Münster, Germany)
12 October 2016	Alexandra Uscatescu (Universidad Complutense Madrid, Spain)
12 October 2016	Anne-Michelle Rasson-Seigne (Université Francois-Rabelais Tours, France)
12 October 2016	Daniela Baldoni (Italian Archaeological Mission at Jerash, Jordan)
12 October 2016	Dorothea Csitneki (Ruhr-Universität Bochum, Germany)
12 October 2016	Georg Kalaitzoglou (Westfälische Wilhelms-Universität Münster, Germany)
12 October 2016	Jacques Seigne (Université Francois-Rabelais Tours, France)
12 October 2016	Michael Prange (Deutsches Bergbaumuseum Bochum, France)
12 October 2016	Raffaela Pappalardo (Università di Napoli Federico II, Italy)
13–14 October 2016	Allan Knudsen (Svendborg Museum, Denmark)
13–14 October 2016	Angela Huang (University of Copenhagen, Denmark)
13–14 October 2016	Annika Nordström (Uppsala University, Sweden)
13–14 October 2016	Asger N. Christensen (University of Southern Denmark, Denmark)
13–14 October 2016	Axel Christophersen (NTNU University Museum, Norway)
13–14 October 2016	Carsten Jahnke (University of Copenhagen, Denmark)
13–14 October 2016	Christian Thomsen (University of Southern Denmark / Langelands Museum, Denmark)
13–14 October 2016	Christina Toreld (Nye Lödöse, Sweden)
13–14 October 2016	Christina Rosén (Arkeologerna, Statens Historiska Museum, Sweden)
13–14 October 2016	Eva Trein Nielsen (Independent scholar, Denmark)
13–14 October 2016	Georg Haggrén (University of Helsinki, Finland)
13–14 October 2016	Gitte Hansen (University Museum of Bergen, Norway)
13–14 October 2016	Imelda Friden (Nye Lödöse, Sweden)
13–14 October 2016	Ivonne D. Leivas (Linnaeus University / Grasca, Sweden)
13–14 October 2016	Jakob T. Christensen (Odense City Museum, Denmark)
13–14 October 2016	Jakob Parby (Museum of Copenhagen, Denmark)
13–14 October 2016	Jeanette Gustavsson (Rio Göteborg Natur- och kulturkooperativ, Sweden)

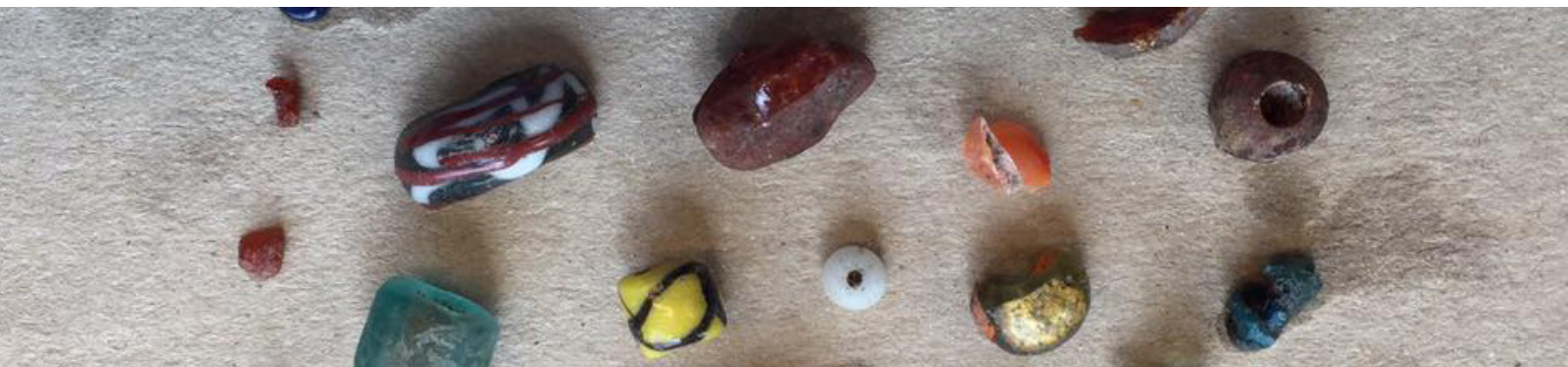


The city wall of Jerash and some of the trenches, laid out in order to investigate the water pipes that brought water to the Northwest Quarter (Photo: Danish-German Jerash Northwest Quarter Project).

13–14 October 2016	Jesper Langkilde (Roskilde Museum, Denmark)
13–14 October 2016	Jette Linaa (Moesgaard Museum, Denmark)
13–14 October 2016	Joakim Kjellberg (Uppsala University, Sweden)
13–14 October 2016	Kirsten Møller (University of Copenhagen, Denmark)
13–14 October 2016	Kristina Jonsson (Stiftelsen Kulturmiljövård, Sweden)
13–14 October 2016	Mads Runge (Odense City Museums, Denmark)
13–14 October 2016	Maija Ojala (University of Tampere, Finland)
13–14 October 2016	Mats Anglert (Arkeologerna, Statens Historiska Museum, Sweden)
13–14 October 2016	Mattias Öbrink (Arkeologerna, Statens Historiska Museum, Sweden)
13–14 October 2016	Max Pedersen (The Fisheries and Maritime Museum in Esbjerg, Denmark)
13–14 October 2016	Michael H. Gelting (The Danish National Archives, Denmark)
13–14 October 2016	Michael M. Bjerregaard (Odense City Museums, Denmark)
13–14 October 2016	Morten Ravn (Viking Ship Museum in Roskilde, Denmark)
13–14 October 2016	Morten Søvsø (Museum of Southwest Jutland, Denmark)
13–14 October 2016	Richard Magito Bruun (Kulturgruppen för resandefolket, Sweden)
13–14 October 2016	Stefan Larsson (Arkeologerne, Statens Historiska Museum, Sweden)
13–14 October 2016	Stuart Whatley (Museum of Copenhagen, Denmark)
13–14 October 2016	Svenja Weise (University of Southern Denmark, Denmark)
13–14 October 2016	Thomas Roland (Museum of Copenhagen, Denmark)
13–14 October 2016	Thomas Wallerström (NTNU, Trondheim, Norway)
13–14 October 2016	Torbjörn Brorsson (Ceramic Studies, Sweden)
13–14 October 2016	Tom Wenneberg (Gothenburg City Museum, Sweden)
13–14 October 2016	Veronica Forsblom Ljungdahl (Bohusläns Museum, Sweden)
31 October–2 November 2016	Carl Knappett (University of Toronto, Canada)
20–22 November 2016	Stephanie Wynne-Jones (University of York, UK)
20–23 November 2016	Constanze Höpken (Universität zu Köln, Germany)
22–25 November 2016	Barbora Wouters (Vrije Universiteit Brussels, Belgium)
22–25 November 2016	Stefan Larsson (Arkeologerna, Statens Historiska Museum, Sweden)
22–25 November 2016	Christian Thomsen (University of Southern Denmark, Denmark)
22–25 November 2016	Christina Rosén (Arkeologerna, Statens Historiska Museum, Sweden)
22–25 November 2016	Georg Kalaitzoglou (Westfälische Wilhelms-Universität Münster, Germany)
29–30 November 2016	Annette Haug (Christian-Albrechts-Universität zu Kiel, Germany)

Collaborators

- Albertson, Fred:** University of Memphis, USA
Amelung, Wulf: Universität Bonn, Germany
Ardeleanu, Stefan: Universität Heidelberg, Germany
Ashby, Steve: University of York, UK
Bagge, Merethe S.: Skanderborg Museum, Denmark
Beck, Dennis M.: Deutsches Archäologisches Institut, Germany
Becker, Johannes: Ruhr-Universität Bochum, Germany
Biginagwa, Thomas: University of Dar es Salaam, Tanzania
Bjerregaard, Mikael: Odense City Museums, Denmark
Brøns, Cecilie: Ny Carlsberg Glyptotek, Denmark
Cappellini, Enrico: Natural History Museum of Denmark, Denmark
Chaouali, Moheddine: Institut National du Patrimoine, Tunisia
Christensen, Jacob T.: Odense City Museums, Denmark
Christie, Annalisa: University of York, UK
Collins, Matthew: Natural History Museum of Denmark, Denmark
Çobanoğlu, Dilek: Westfälische Wilhelms-Universität Münster, Germany
Croix, Sarah: Aarhus University, Denmark
Dahl, Anders B.: Technical University of Denmark, Denmark
Deckers, Pieterjan: Vrije Universiteit Brussels, Belgium
Ebeling, Philip: Ruhr-Universität Bochum, Germany
Eboskog, Mikael: Museum of Bohuslän, Sweden
Ebsen, Jannie A.: Odense City Museums, Denmark
Eckhardt, Benedikt: Universität Bremen, Germany
Eger, Christoph: Freie Universität Berlin, Germany
Facella, Margherita: Università di Pisa, Italy
Feveile, Claus: Museum of Southwest Jutland, Denmark
Fleisher, Jeffrey: Rice University, TX, USA
Freestone, Ian: University College London, UK
Gade, Nanna H.: Museum South East Denmark
Gammeltoft, Peder: National Museum of Denmark, Denmark
Gelichi, Sauro: Ca' Foscari University of Venice, Italy
Goischke, Juliane: Deutsches Archäologisches Institut, Germany
Goodchild, Helen: University of York, UK
Gordon, Richard: Max-Weber-Kolleg, Universität Erfurt, Germany
Gundelach, Carsten: Technical University of Denmark, Denmark
Haensch, Rudolf: Kommission für Alte Geschichte und Epigraphik, Germany
Hald, Mette M.: National Museum of Denmark, Denmark
Hawkes, Jason: University of York, UK
Henriksen, Peter S.: National Museum of Denmark, Denmark
Hertz, Ejvind: Skanderborg Museum, Denmark
Heyn, Maura: University of North Carolina, USA
Horton, Mark: University of Bristol, UK
Jamhawi, Monther: General director, Department of Antiquities in Jordan, Amman, Jordan
Jensen, Jane J.: Museum of Copenhagen, Denmark
Jensen, Pernille B.: Natural History Museum of Denmark, Denmark
Kaizer, Ted: Durham University, UK
Kalaitzoglou, Georg: Westfälische Wilhelms-Universität Münster, Germany
Kindberg, Jan: Ny Carlsberg Glyptotek, Denmark
Kniess, Rudolf: Eastern Atlas, Germany
Kristensen, Signe B.: Aarhus University, Denmark
Kristensen, Hans K.: Aarhus University, Denmark
Kropp, Andreas: University of Nottingham, UK
Lane, Paul: University of York, UK
Lapatin, Kenneth: The J. Paul Getty Museum, USA
Larsen, John M.: Aarhus University, Denmark
Larsen, Lars K.: Moesgaard Museum, Denmark
LaVioletta, Adria: University of Virginia, USA
Lehmann, Johannes: Cornell University, USA
Lichtenberger, Achim: Westfälische Wilhelms-Universität Münster, Germany
Lindroos, Alf: Åby Academy, Sweden



Glass and amber beads from the excavation in Ribe (Photo: Søren M. Sindbæk).

Malcolm-Davies, Jane: Centre for Textile Research, University of Copenhagen, Denmark

Mannering, Ulla: University of Copenhagen, Denmark

Menze, Volker: Central European University, Hungary

Merkel, Stephen: Bergbaumuseum Bochum, Germany

Morales, Eréndira Q.: Rice University, USA

Neiss, Michael: Uppsala University, Sweden

Nicolay, Johan: University of Groningen, The Netherlands

Nieswandt, H.-Helge: Westfälische Wilhelms-Universität Münster, Germany

Nkirote, Freda: British Institute in Eastern Africa, Nairobi, Kenya

Olsen, Jesper V.: Centre for Protein Research, University of Copenhagen, Denmark

Öbrink, Mattias: Arkeologerna, Statens Historiska Museum, Sweden

Pade, Marianne: The Danish Institute at Rome, Roma, Italy

Parby, Jakob I.: Museum of Copenhagen, Denmark

Pedersen, Anne: National Museum of Denmark, Denmark

Pieper, Nicole: Independent architect, Austria

Pikirayi, Innocent: University of Pretoria, South Africa

Pollard, Edward: British Institute in Eastern Africa, Kenya

Porter, Barbara A.: The American Center of Oriental Research (ACOR), Jordan

Prange, Michael: Bergbaumuseum Bochum, Germany

Rieger, Katharina: Max-Weber-Kolleg, Universität Erfurt, Germany

Roland, Thomas: Museum of Copenhagen, Denmark

Rosén, Christina: Arkeologerna, Statens Historiska Museum, Sweden

Runge, Mads: Odense City Museums, Denmark

Rüpke, Jörg: Max-Weber-Kolleg, Universität Erfurt, Germany

Sagiya, Elton M.: National Museums and Monuments of Zimbabwe, Zimbabwe

Scheding, Paul: Ludwig-Maximilians-Universität München, Germany

Schmidt, Anne L.: University of Copenhagen, Denmark

Schmidt, Katharina: German Protestant Institute in Amman, Jordan

Schnapp, Alain: Université Paris 1 Panthéon-Sorbonne, France

Schulze, Ingrid: Independent scholar, Germany

Schulze, Wolfgang: Independent scholar, Germany

Schwarzer, Holger: Westfälische Wilhelms-Universität Münster, Germany

Seland, Eivind H.: University of Bergen, Norway

Simpson, Ian: Stirling University, UK

Solomon, Dawit: College of Agricultural and Life Science, Cornell University, USA

Sørensen, Annette H.: Aarhus University, Denmark

Søvsø, Morten: Museum of Southwest Denmark, Denmark

Toreld, Christina: Museum of Bohuslän, Sweden

Turner, Sam: University of Newcastle, UK

Tys, Dries: Vrije Universiteit Brussels, Belgium

Ulriksen, Jens: Museum South East Denmark, Denmark

Vernet, Thomas: Institut Français d'Afrique du Sud, Johannesburg, South Africa

Versluys, Miguel J.: Leiden University, The Netherlands

Von Rummel, Philipp: Deutsches Archäologisches Institut, Germany

Weiss, Lara: Max-Weber-Kolleg, Universität Erfurt, Germany

Whatley, Stuart: Museum of Copenhagen, Denmark

Winter, Engelbert: Westfälische Wilhelms-Universität Münster, Germany

Winther-Jacobsen, Kristina: The Danish Institute at Athens, Athens, Greece

Woolf, Greg: School of Advanced Study, University of London, UK

Woollett, James: Université Laval, Canada

Wouters, Barbora: Vrije Universiteit Brussels, Belgium

Wulf-Rheidt, Ulrike: Deutsches Archäologisches Institut, Germany

Yon, Jean-Baptiste: Laboratoire HISOMA: Histoire et Sources des Mondes Antiques, France

Invited Talks

Rubina Raja, Network urbanism and high-definition archaeology: Examples from the field. *Biocomplexity seminar*, Niels Bohr Institute, University of Copenhagen, Copenhagen, Denmark, 12 January 2016.

Rubina Raja, Untold Palmyrene stories: Unravelling Palmyrene funerary portraits. Public lecture, Stockholm, Sweden, 14 January 2016.

Rubina Raja, Tracking urban networks through high-definition archaeology: The case of Jerash in the Decapolis. Seminar, Stockholm University, Stockholm, Sweden, 15 January 2016.

Rubina Raja, Biographies of cities and rivers: The case of the Golden river at Gerasa in the Decapolis. Conference: *Biographies of Place*, Aarhus, Denmark, 19 January 2016.

Michael Blömer, Urban archaeology in Northern Syria and the new Doliche City Project. Conference: *Biographies of Place*, Aarhus, Denmark, 19 January 2016.

Søren M. Sindbæk, Urban biographies as network dynamics: Re-defining the archaeology of urbanism. Conference: *Biographies of Place*, Aarhus, Denmark, 20 January 2016.

Rubina Raja, Palmyra Portrait Project. Conference: *Danish Archaeology in a Globalised and Politicised World*, Carlsberg Akademi, Copenhagen, Denmark, 27 January 2016.

Rubina Raja, Le Tombeau des trois freres a Palmyre. Lecture at Ecole normale supérieure, Paris, France, 3 February 2016.

Rubina Raja, Networks, nodes and high definition archaeology: The case of Gerasa in the Decapolis. Lecture at Uppsala University, Stockholm, Sweden, 15 February 2016.

Rubina Raja, Palmyra: History and heritage of a lost and found city. Seminar: *Palmyra: History and Heritage of a Lost and Found City*, Uppsala University, Campus Gotland, Visby, Sweden, 16 February 2016.

Rubina Raja, Announcement. The Royal Danish Academy of Sciences and Letters, Copenhagen, Denmark, 18 February 2016.

Rubina Raja, Christen, Juden und Soldaten im Gerasa des 6. Jh.s. Kommission für Alte Geschichte und Epigraphik, Lecture, Munich, Germany, 22 February 2016.

Kristine Thomsen, Soils and Sediments. PhD course: *Reading Soils and Sediments: Geoarchaeologies of the Mediterranean and Middle East regions*, Vrije Universiteit, Amsterdam, The Netherlands, 22 February 2016.

Rubina Raja, Speech at *EliteForsk* conference, Copenhagen, Denmark, 25 February 2016.

Michael Blömer, Exploring the city of Doliche: Opportunities and challenges of a new urban excavation project at the Turkish-Syrian border. *UrbNet lecture series*, Aarhus, Denmark, 1 March 2016.

Signe Krag, Kvinder og børn i palmyrensk gravskulptur. *The Palmyra Portrait Project lecture series*, Aarhus University, Aarhus, Denmark, 1 March 2016.

Rubina Raja, Oplæg omkring ekspertpanels arbejde med report om kvalitetssikring af forskning, peer-review og impact. Forelæsning i Videnskabernes Selskab, Copenhagen, Denmark, 2 March 2016.

Michael Blömer, Berggötter und göttliche Berge in römischer Zeit. Workshop: Natur und Kult in Anatolien 5. Adressaten: Numen oder Gottheit, Deutsches Archäologisches Institut, Istanbul, Turkey, 4–5 March 2016.

Rubina Raja, New archaeological research in Jerash: The Danish-German Northwest Quarter Project. Lecture at the American Centre for Oriental Research, Amman, Jordan, 9 March 2016.

Heike Möller, Simitthus/Chimtou: Some insights into local/regional produced pottery in Roman times. Conference: *12th Roman Archaeology Conference*, Rome, Italy, 16–19 March 2016.

Rubina Raja, The gardeners of the upper valley: The importance of water to urban (religious) life in Gerasa. Workshop: *Water and Religious Life in the Roman and Late Antique Near East*, Durham University, Durham, UK, 22 March 2016.

Rubina Raja, Palmyrenske portrætter mellem krig og kunstmarked. *Gammel Testamente Seminar*, University of Copenhagen, Copenhagen, Denmark, 1 April 2016.

Alain Schnapp, The Egyptian and Mesopotamian approach. Lecture series: *Ruins and Their Significance for Urban History*, Aarhus, Denmark, 4 April 2016.



Excavation in Ribe (Photo: Søren M. Sindbæk).

Rubina Raja, The creation of an epoch: Octavian, Herod and epochalisation seen from the East. Workshop: *Epochalisation and Religious Innovations in Pre-Augustan and Augustan Rome*, Aarhus, Denmark, 6 April 2016.

Rubina Raja, Introduction to UrbNet. Visit by Rector, UrbNet, Aarhus, Denmark, 11 April 2016.

Ema Bauzyte, East African pyro-technological processes and networks in 7th–10th century AD. Visit by Rector, UrbNet, Aarhus, Denmark, 11 April 2016.

Olav Elias Gundersen, Urbanisation and commercialisation in medieval Scandinavia. Visit by Rector, UrbNet, Aarhus, Denmark, 11 April 2016.

Kristine Thomsen, Understanding complex urban space and development through geochemistry: The case of Jerash in Jordan. Visit by Rector, UrbNet, Aarhus, Denmark, 11 April 2016.

Kirstine Haase, An urban way of life: Urban practices, networks and identities in Odense, 11–1500 CE. Visit by Rector, UrbNet, Aarhus, Denmark, 11 April 2016.

Hanna Dahlström, Towards the making of a town and its inhabitants: A study of urbanity as practice and lifeform in early and high medieval Copenhagen. Visit by Rector, UrbNet, Aarhus, Denmark, 11 April 2016.

Neeke Hammers, Trade, import and urban development: An archaeobotanical approach to the study of north European cities in medieval times. Visit by Rector, UrbNet, Aarhus, Denmark, 11 April 2016.

Søren M. Sindbæk, UrbNet: The resources. Visit by Rector, UrbNet, Aarhus, Denmark, 11 April 2016.

Alain Schnapp, The ancient Chinese vision of city ruins. Lecture series: *Ruins and Their Significance for Urban History*, Aarhus, Denmark, 11 April 2016.

Neeke Hammers, Trade, import and urban development: An archaeobotanical approach to the study of north European cities in medieval times. *DNRF follow-up meeting*, UrbNet, Aarhus, Denmark, 12 April 2016.

Michael Blömer, The Doliche Excavation Project. *DNRF follow-up meeting*, UrbNet, Aarhus, Denmark, 12 April 2016.

Alain Schnapp, Travel and antiquarianism from the ancient world to the Renaissance. Seminar: *New Directions in Classical Reception*, Aarhus, Denmark, 13 April 2016.

Søren M. Sindbæk, A complex beadwork: Stringing together early medieval exchange. Conference: *Entangled Worlds: Network Analysis and Complexity Theory in Historical and Archaeological Research*, Institut für Mittelalterforschung & Österreichisches Archäologisches Institut, Österreichische Akademie der Wissenschaften, Vienna, Austria, 14 April 2016.

Alain Schnapp, The Greco-Roman way of considering city remains. Lecture series: *Ruins and Their Significance for Urban History*, Aarhus, Denmark, 18 April 2016.

Rubina Raja, Portraying the Palmyrenes: The funerary reliefs from Palmyra. Conference: *Life in Palmyra: Life for Palmyra*, University of Warsaw, Warsaw, Poland, 20 April 2016.

Alain Schnapp, The medieval East and West: Clash between pagan, Christian and Islamic memory. Lecture series: *Ruins and Their Significance for Urban History*, Aarhus, Denmark, 25 April 2016.

Kirstine Haase, Livet i byen: Et forskningsprojekt. *Forsknings Døgn*, Odense City Museums, Odense, Denmark, 29 April 2016.

Alain Schnapp, The Renaissance confrontation with cities' pasts. Lecture series: *Ruins and Their Significance for Urban History*, Aarhus, Denmark, 2 May 2016.

Søren M. Sindbæk, UrbNet og byarkæologiens fremtid. 29. *Byarkæologiske Møde: Byarkæologi – Før, Nu og i Fremtiden*, Ribe, Denmark, 2 May 2016.

Hanna Dahlström, Urbana möten och människor i arkeologisk backspegel. 29. *Byarkæologiske Møde: Byarkæologi – Før, Nu og i Fremtiden*, Ribe, Denmark, 2 May 2016.

Jacob Tue Christensen & Kirstine Haase, Den antikvariatiske tradition i middelalderbyen Odense. 29. *Byarkæologiske Møde: Byarkæologi – Før, Nu og i Fremtiden*, Ribe, Denmark, 2 May 2016.

Neeke Hammers, Trade, import, and urban development: An archaeobotanical approach to the study of north European cities in medieval times. 29. *Byarkæologiske Møde: Byarkæologi – Før, Nu og i Fremtiden*, Ribe, Denmark, 3 May 2016.



A 70 cm long metal spoon found in a private house in Jerash. It may have been used in connection with textile production (Photo: Danish-German Jerash Northwest Quarter Project).

Sara Ringsborg, Børneportrætter fra Palmyra. *The Palmyra Portrait Project lecture series*, Aarhus University, Aarhus, Denmark, 3 May 2016.

Alain Schnapp, The Enlightenment and the foundation of the modern vision of cities' pasts. Lecture series: *Ruins and Their Significance for Urban History*, Aarhus, Denmark, 9 May 2016.

Alex Peterson, Ayyubid-Mamluk Evidence from the Danish-German Northwest Quarter Project. Conference: *International Conference on the History and Archaeology of Jordan*, Amman, Jordan, 22 May 2016.

Heike Möller & Annette Højen Sørensen, Roman and Early Byzantine ceramic finds: New results on micro- and macro-regional patterns in Jerash's Northwest Quarter. Conference: *International Conference on the History and Archaeology of Jordan*, Amman, Jordan, 23 May 2016.

Rubina Raja, Palmyrene funerary portraiture: Individualization and group identity. Conference: *Palmyra: Mirage in the Desert*, New York, USA, 23 May 2016.

Achim Lichtenberger & Rubina Raja, New evidence for Byzantine and Islamic Jerash in the light of research of the Danish-German Jerash Northwest Quarter Project. Conference: *International Conference on the History and Archaeology of Jordan*, Amman, Jordan, 24 May 2016.

Olav Elias Gundersen, Medieval money in Ribe: Towns versus country. *UrbNet lecture series*, UrbNet, Aarhus, Denmark, 24 May 2016.

Rubina Raja & Jörg Rüpke, Limits to the "Augustan epoch": Urban complexity and religion in Rome and the realm of Herod the Great. *Accademia d'Egitto*, Rome, Italy, 26 May 2016.

Luise Ørsted Brandt, DNA og proteiner afslører forhistoriske tekstiler, skind og antik bemaling. The Royal Danish Academy of Sciences and Letters, Copenhagen, Denmark, 1 June 2016.

Michael Blömer, The religious life in Southeast Anatolia in the Roman period. Religious change in Central- and South-East Anatolia, Bochum, Germany, 3 June 2016.

Bjørn Poulsen, Writing a history of Danish medieval towns: Possibilities and problems. *UrbNet lecture series*, UrbNet, Aarhus, Denmark, 7 June 2016.

Heike Möller, Interpreting Middle Islamic finds "out of context": The northwest quarter evidence. Conference: *Mamluk Pottery: Material Culture and History in the Middle Islamic Period*, Aarhus, Denmark, 13 June 2016.

Alex Peterson, Middle Islamic ceramics in context from the NW quarter of Jerash. Conference: *Mamluk Pottery: Material Culture and History in the Middle Islamic Period*, Aarhus, Denmark, 13 June 2016.

Achim Lichtenberger & Rubina Raja, Middle Islamic Jerash: New evidence and perspectives. Conference: *Mamluk Pottery: Material Culture and History in the Middle Islamic Period*, Aarhus, Denmark, 13 June 2016.

Luise Ørsted Brandt, The implementation of the natural sciences in the study of ancient polychromy. The Danish Institute in Athens, Athens, Greece, 14 June 2016.

Rubina Raja & Michael Blömer, Urban religion in Antiocheia-on-the-Orontes: Lost in the hinterland? Creating images of the metropolis through religious strategies. Conference: *Lived Religion in Metropoleis: A Comparative View*, Erfurt, Germany, 21-23 June 2016.

Rubina Raja, Palmyrene funerary portraits: Diversity and uniformity in a portrait habit in the Roman Near East. *Klassische Archäologie*, Universität Würzburg, 28 June 2016.

Hanna Dahlström, A town in the making: Exploring early urbanity of Copenhagen through the study of social practices. *22nd Annual Meeting of the EAA (European Association of Archaeologists)*, Vilnius, Lithuania, 31 August-4 September 2016.

Kirstine Haase, An Agrarian town? Understanding the earliest phase of the medieval town Odense in Denmark. *22nd Annual Meeting of the EAA (European Association of Archaeologists)*, Vilnius, Lithuania, 31 August-4 September 2016.

Ema Bauzyte, Regional variations in iron smelting slag in 7-10th century East Africa. *22nd Annual Meeting of the EAA (European Association of Archaeologists)*, Vilnius, Lithuania, 1 September 2016.

Rubina Raja, Palmyra in the Syrian Desert: Or why basic research matters. Alto Adige, Olang, Italy, 13 September 2016.



Students during the annual training excavation in Ribe (Photo: Søren M. Sindbæk).

Luise Ørsted Brandt, Cecilie Brøns, Jesper V. Olsen & Enrico Cappellini, Paleoproteomics and Polychromy: The identification of peptides from paint binders from the Palace of Apries, Egypt. 7th International Symposium on Biomolecular Archaeology. Oxford, United Kingdom, 14–16 September 2016.

Sara Ringsborg, Palmyra og Palmyra Portræt Projektet. Guided tour at Ny Carlsberg Glyptotek, Copenhagen, Denmark, 16 September 2016.

Rubina Raja, Palmyra i den syriske ørken. Lecture in Ældresagen, Aarhus, Denmark, 26 September 2016.

Rubina Raja, Arkæologisk forskning i Krisezoner: AU's klassisk arkæologiske forskningsprojekter i Mellemøsten. Det lærde Selskab, Aarhus, Denmark, 27 September 2016.

Rubina Raja, Vidensbrunch om Palmyra. Dokk1, Aarhus, Denmark, 28 September 2016.

Rubina Raja, Public statues across time and cultures. Lincoln College, University of Oxford, UK, 28 September 2016.

Sara Ringsborg, Palmyrene funerary representations of children in family constellations. Conference: *Representations of Women and Children in Roman Period Palmyra*, Part I, Aarhus, Denmark, 3 October 2016.

Signe Krag, Palmyrene funerary buildings and family burial patterns. Conference: *Representations of Women and Children in Roman Period Palmyra*, Part I, Aarhus, Denmark, 3 October 2016.

Ema Bauzyte & Hanna Dahlstrom, Iron in high definition: Exploring past urban networks and societies through study of iron working. *UrbNet lecture series*, UrbNet, Aarhus, Denmark, 4 October 2016.

Heike Möller, Continuity versus discontinuity: New results on Umayyad finds of a residence-like edifice on the Eastern Terrace. Conference: *Conspicuous Productions: Gerasa's Pottery Finds from Byzantine to Umayyad Times in Context*, Aarhus, Denmark, 12 October 2016.

Gry Barfod, Pigments: More than meets the eye. Conference: *Conspicuous Productions: Gerasa's Pottery Finds from Byzantine to Umayyad Times in Context*, Aarhus, Denmark, 12 October 2016.

Achim Lichtenberger & Rubina Raja, Byzantine and Umayyad Gerasa: Results and findings from the Danish-German Jerash

Northwest Quarter Project. Conference: *Conspicuous Productions: Gerasa's Pottery Finds from Byzantine to Umayyad Times in Context*, Aarhus, Denmark, 12 October 2016.

Kirstine Haase & Hanna Dahlström, An urban way of life: And how to approach towns as meeting places. Conference: *Towns as Meeting Places: Exploring Urban Encounters, Networks and People in Northern Europe 1000–1700 AD*, Aarhus University, Denmark, 13 October 2016.

Hanna Dahlström, Towards the making of a town: Exploring the role of social encounters in the development of urbanity. Conference: *Towns as Meeting Places: Exploring Urban Encounters, Networks and People in Northern Europe 1000–1700 AD*, Aarhus University, Denmark, 13 October 2016.

Rubina Raja, Palmyrene funerary portraits. A Roman period portrait habit. Guest lecture at the Department of History of Art, Berkeley University, USA, 20 October 2016.

Rubina Raja, Urban development in Gerasa from the Roman to the early Islamic period: New results from the Danish-German Northwest Quarter Project. Cotsen Institute, UCLA, Los Angeles, USA, 21 October 2016.

Rubina Raja, The Palmyra Portrait Project: Preserving Cultural Heritage in a Time of Conflict. Public lecture at the J. Paul Getty Museum, the Getty Villa, Los Angeles, USA, 22 October 2016.

Genevieve Holdridge, Human-environmental relations during the post-classic period in the Mixteca Alta, Oaxaca, Mexico. *UrbNet lecture series*, Aarhus, Denmark, 25 October 2016.

Rubina Raja, Conflict archaeology and preserving cultural heritage: The case of the funerary portraits from Palmyra. Guest lecture, Classics, University of Texas Austin, USA, 28 October 2016.

Søren M. Sindbæk, Anomalocivitas: On urban evolutions. Lecture series: *Age of Emporia: The Archaeology of Urban Networks*, Aarhus, Denmark, 31 October 2016.

Michael Blömer, Palmyra's little-known neighbour: The sculpture of Osrhoene. *The Palmyra Portrait Project lecture series*, Aarhus, Denmark, 1 November 2016.

Alex Peterson, Middle Islamic Ceramics from the Northwest Quarter Project. Conference: *Society of Medieval Archaeology*, Brussels, Belgium, 3 November 2016.



Discussion between Rubina Raja and Søren M. Sindbæk at the 2016 UrbNet retreat, Sandbjerg Manor, Sønderborg (Photo: Christina A. Levisen).

Rubina Raja, On the recruitment for new centres of excellence. The Royal Danish Academy of Sciences and Letters, Copenhagen, Denmark, 3 November 2016.

Rubina Raja, Contextualising the world: Urban archaeology as a lens. The Black Diamond, The Royal Library, Copenhagen, Denmark, 4 November 2016.

Søren M. Sindbæk, On urban networks. Lecture series: *Age of Emporia: The Archaeology of Urban Networks*, Aarhus, Denmark, 8 November 2016.

Gry H. Barfod & Charles Leshner, What's up at AGIR? *UrbNet lecture series*, Aarhus, Denmark, 8 November 2016.

Luise Ø. Brandt, News on the Old Tunic from Møgelse, Jutland (AD 1–550). Danish National Research Foundation's Centre for Textile Research's 10th anniversary, University of Copenhagen, Denmark, 11 November 2016.

Søren M. Sindbæk, Boom and bust: On urban dynamics. Lecture series: *Age of Emporia: The Archaeology of Urban Networks*, Aarhus, Denmark, 15 November 2016.

Signe Krag, Funerary buildings and portaiture in Roman Period Palmyra. Conference: *Porträt als Massenphänomen*, Universität zu Köln, Morphomata and École Pratique des Hautes Études, Germany, 18 November 2016.

Vana Orfanou, Material people in a material world, part II: Workshops, organisation and identity. *UrbNet Centre Day*, UrbNet, Aarhus, Denmark, 21 November 2016.

Ema Bauzyte, East African pyro-technological processes and networks in 7th–10th centuries AD. *UrbNet Centre Day*, UrbNet, Aarhus, Denmark, 21 November 2016.

Genevieve Holdridge, Urban geoarchaeology of Jerash. *UrbNet Centre Day*, UrbNet, Aarhus, Denmark, 21 November 2016.

Olav Gundersen, Urbanisation and commercialisation in the far north. *UrbNet Centre Day*, UrbNet, Aarhus, Denmark, 21 November 2016.

Thomas Birch, Material people in a material world, part I: Provenance and connected materials. *UrbNet Centre Day*, UrbNet, Aarhus, Denmark, 21 November 2016.

Neeke Hammers, Trade, import, and urban development in Medieval Denmark. *UrbNet Centre Day*, UrbNet, Aarhus, Denmark, 21 November 2016.

Federica Sulas, Geoarchaeology of African urban landscapes. *UrbNet Centre Day*, UrbNet, Aarhus, Denmark, 21 November 2016.

Alex Peterson, Ceramics in Context: Pottery of a Middle Islamic hamlet in the Northwest Quarter of Jerash. *UrbNet Centre Day*, UrbNet, Aarhus, Denmark, 21 November 2016.

Hanna Dahlström, Towards the making of a town: A study of urbanity as practice and lifeform in medieval Copenhagen. *UrbNet Centre Day*, UrbNet, Aarhus, Denmark, 21 November 2016.

Luise Ørsted Brandt, Fur and skin trade in Viking and Medieval Denmark. *UrbNet Centre Day*, UrbNet, Aarhus, Denmark, 21 November 2016.

Kirstine Haase, An urban way of life: Urban practices, networks and identities in Odense, 1100–1500 CE. *UrbNet Centre Day*, UrbNet, Aarhus, Denmark, 21 November 2016.

Heike Möller, Ceramics in Context 2.0: Reviews and new perspectives. *UrbNet Centre Day*, UrbNet, Aarhus, Denmark, 21 November 2016.

Kristine Thomsen, Gerasa: Mortars matter! *UrbNet Centre Day*, UrbNet, Aarhus, Denmark, 21 November 2016.

Michael Blömer, The Doliche Urban Excavation project: State of affairs and future prospects. *UrbNet Centre Day*, UrbNet, Aarhus, Denmark, 21 November 2016.

Søren M. Sindbæk, Réseau opératoire: On urban activities. Lecture series: *Age of Emporia: The Archaeology of Urban Networks*, Aarhus, Denmark, 21 November 2016.

Rubina Raja, Complexity and the potential of contextual archaeology. PhD course: *Contextual Archaeology as a High-Definition Tool*, Aarhus, Denmark, 23 November 2016.

Heike Möller, Geology and soil formation processes. PhD course: *Contextual Archaeology as a High-Definition Tool*, Aarhus, Denmark, 23 November 2016.

Søren M. Kristiansen, Managing complex stratigraphy in Mediterranean/Near Eastern contexts. PhD course: *Contextual Archaeology as a High-Definition Tool*, Aarhus, Denmark, 23 November 2016.



Glass beads are among the most common finds from the Viking-age emporium Ribe. Bead excavated 2016 (Photo: Søren M. Sindbæk).

Ema Bauzyte, Contextual archaeology as a high definition tool: The case of Songo Mnara. PhD course: *Contextual Archaeology as a High-Definition Tool*, Aarhus, Denmark, 23 November 2016.

Kristine Thomsen, Complex Stratigraphy: Gerasa. PhD course: *Contextual Archaeology as a High-Definition Tool*, Aarhus, Denmark, 23 November 2016.

Kirstine Haase, A matter of scale: Considerations on how to use detailed analysis in the bigger picture and the bigger picture to say something about the detail. PhD course: *Contextual Archaeology as a High-Definition Tool*, Aarhus, Denmark, 24 November 2016.

Neeke Hammers, Archaeobotany in complex stratigraphic contexts. PhD course: *Contextual Archaeology as a High-Definition Tool*, Aarhus, Denmark, 24 November 2016.

Søren M. Sindbæk, Intercitizens: On urban communities. Lecture series: *Age of Emporia: The Archaeology of Urban Networks*, Aarhus, Denmark, 21 November 2016.

Olav Gundersen, Medieval attitudes to money: Why William Marshal was morally obliged to rob a monk. Lecture: *Leding, riddere og penge*, Aarhus University, Denmark, 29 November 2016.

Rubina Raja, Laokoon: En romersk skulpturgruppe. Verdens største fund. Danish University Extension (Folkeuniversitetet), Aarhus, Denmark, 30 November 2016.

Kristine Thomsen, Gerasa: Mortar. Seminar: *ToRS-Saxo 4th Annual Seminar*, University of Copenhagen, Denmark, 2 December 2016.

Søren M. Sindbæk, On urban margins. Lecture series: *Age of Emporia: The Archaeology of Urban Networks*, Aarhus, Denmark, 5 December 2016.

Kristine Thomsen, Urbanism in Gerasa, Jordan, through the lens of geochemistry. Seminar: *Classical Antiquity and its Heritage*, Aarhus, Denmark, 7 December 2016.

Federica Sulas, Innocent Pikirayi & Elton M. Sagiya, Geoarchaeology of water management at Great Zimbabwe. Conference: *The XII Nordic Conference on the Application of Scientific Methods in Archaeology (SMIA XII)*, Aarhus University, Denmark, 14–15 December 2016.

Federica Sulas & Stephanie Wynne-Jones, Activity markers and household space in Swahili urban contexts: An integrated geoarchaeological approach. Conference: *The XII Nordic Conference on the Application of Scientific Methods in Archaeology (SMIA XII)*, Aarhus University, Denmark, 14–15 December 2016.

Michael Blömer, Forschungen in Doliche 2016. Lecture: *Forschungsstelle Asia Minor, Asia Minor Abend*, University of Münster, Münster, Germany, 20 December 2016.



Soil-science expert Søren M. Kristiansen talking to students during the annual training excavation in Ribe (Photo: Søren M. Sindbæk).

Public Outreach

Radio

DR P1 Eftermiddag
15 March 2016
Kulturarv i Syrien
Rubina Raja

TV2 News
24 March 2016
Den syriske stats indtagelse af Palmyra
Rubina Raja

Radio France International
28 March 2016
The situation in Palmyra: Syrian State retakes Palmyra
Rubina Raja

Radio 24/7
29 March 2016
Palmyra generobres af den syriske stat: Lokaltetens status quo
Rubina Raja

Radio 24/7
30 March 2016
Zenobia og Palmyra
Rubina Raja

TV2 News
3 April 2016
Vikingefund kan åbne nyt forskningskapitel
Søren M. Sindbæk

DR P1 Eftermiddag
12 April 2016
Genopbygning af Palmyra
Rubina Raja

P1 Morgen
31 May 2016
Rollemodel skal skaffe flere kvinder i dansk forskning
Luise Ø. Brandt

P1 Eftermiddag
31 May 2016
Women in Science
Luise Ø. Brandt

NOVA FM
20 June 2016
Vinder-Kvinder
Luise Ø. Brandt

Radio 24/7
26 November 2016
Palmyra: En perle i Syriens ørken: 24 spørgsmål til professoren
Rubina Raja

P4 Nyhederne
13 December 2016
Palmyra: Current state of affairs
Rubina Raja

P1 Morgen
19 December 2016
Palmyra: The current situation and cultural heritage situation
Rubina Raja

TV

Axess TV
1 January 2016
Cultural heritage and conflict in Palmyra
Rubina Raja

ARTE TV
25 April 2016
Dänemark: Glück und Meer
Søren M. Sindbæk

Dk4.dk
October 2016
Arkæologien Rundt: Borgring 2016
Søren M. Sindbæk

Online Media

Ugeavisen.dk
4 January 2016
Arkæologisk fund ved Ribe er i Top 10 i Danmark
Søren M. Sindbæk

Peblish.dk
17 February 2016
Palmyra: Fortidens og fremtidens by
Rubina Raja

Huffington Post
7 May 2016
Cold case: Cops called to Viking fortress over evidence of ancient arson
Søren M. Sindbæk

Videnskab.dk
12 June 2016
Vikingegravplads i Ribe afslører arkæologisk mysterium
Søren M. Sindbæk

ScienceNordic.com
5 July 2016
Danish Viking grave reveals archaeological mysteries
Søren M. Sindbæk

Getty Research Institute
24 October 2016
Interview on Palmyra for upcoming on-line exhibition at the Getty Research Institute
Rubina Raja

Videnskab.dk
29 November 2016
På strejftog i Danmarks middelalderbyer
Bjørn Poulsen

Newspapers and Magazines

Magisterbladet
8 January 2016
Den danske vogter af Palmyras kulturarv
Rubina Raja

Folkeuniversitetet
2 February 2016
Palmyra
Rubina Raja

Berlingske Tidende
11 February 2016
Skønhed og død i Palmyra
Rubina Raja

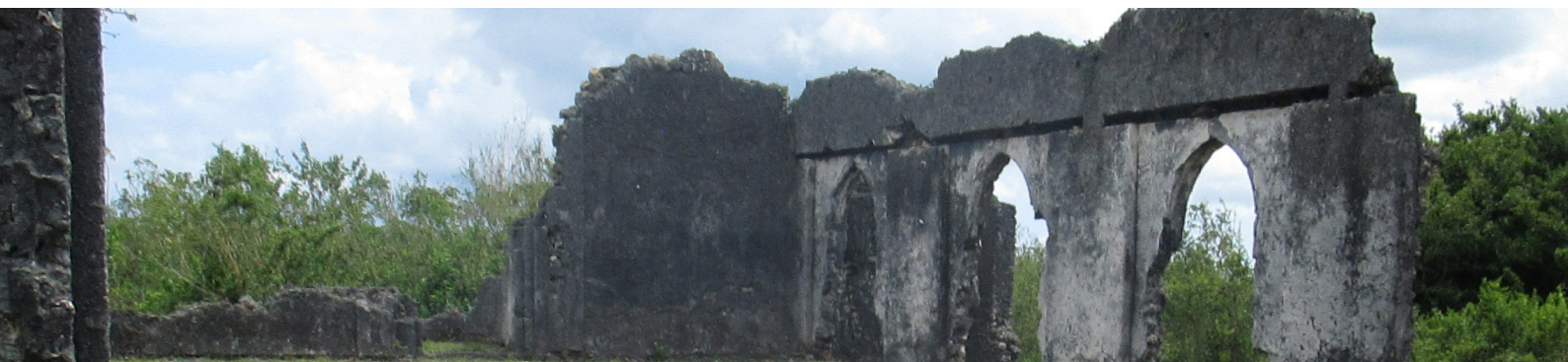
Deutsche Presse Agentur
14 March 2016
Palmyra Portrait Project
Rubina Raja

Deutsche Presse Agentur
16 March 2016
A trove could help archaeologists trying to protect Syria's heritage
Rubina Raja

Ekstra Bladet
29 March 2016
Palmyra efter IS: Så ødelagt er byen
Rubina Raja

Berlingske Tidende
2 April 2016
Nyt spor efter vikinger i Canada
Søren M. Sindbæk

Information
3 April 2016
Professor: Vikingefund kan åbne nyt forskningskapitel
Søren M. Sindbæk



Friday mosque on Tumbatu, Zanzibar (Photo: Federica Sulas).

The Jordan Times

8 April 2016

Archaeologists studying a post-quake gap in Jerash history

Rubina Raja

JydskeVestKysten

12 May 2016

Studerende graver i Ribes fortid

Søren M. Sindbæk

JydskeVestKysten

12 May 2016

Ribe får 15 millioner til ny stor udgravning

Søren M. Sindbæk

Laboranten

1 June 2016

Nyt renrum laboratoriet ved Aarhus Universitet

Gry H. Barfod

JydskeVestKysten

2 June 2016

Udgravning: Nye fund bidrager til Ribes tidlige historie

Søren M. Sindbæk

Børsen

3 June 2016

Vigtige priser til kvindelige forskere

Luise Ø. Brandt

Jyllands-Posten

14 June 2016

Arkæologisk mysterium fra Vikingetiden under optrevling i Ribe

Søren M. Sindbæk

Folkeuniversitetet

22 June 2016

Lær af fortiden

Rubina Raja

The Annual Booklet

from Aarhus University

23 June 2016

Centre for Urban Network Evolutions

Rubina Raja

JydskeVestKysten

19 August 2016

Nordens ældste stigbøjle er fra Ribe

Søren M. Sindbæk

Folkeuniversitetet

28 August 2016

Rubina Raja: Under jorden og over forventning

Rubina Raja

Weekendavisen

16 September 2016

Hvor kommer byerne fra?

Bjørn Poulsen

The Guardian

22 September 2016

Scientists use 'virtual unwrapping' to read ancient biblical scroll reduced to 'lump of charcoal'

Rubina Raja

Kristeligt Dagblad

23 September 2016

Ny teknologi giver unikt indblik i antikken

Rubina Raja

Berlingske Tidende

23 November 2016

Her er de skattefund, der ville gøre Indiana Jones bleg af misundelse

Rubina Raja

JydskeVestKysten

5 December 2016

Store forventninger til ny udgravning i Ribe

Søren M. Sindbæk



Students during the annual training excavation in Ribe (Photo: Søren M. Sindbæk).

Publications 2015–2016

Monographs

- Kristensen, H.K. & Poulsen, B. (2016). *Danmarks Byer i Middelalderen*. Aarhus: Aarhus University Press.
- Raja, R. & Sørensen, A.H. (2015). *Harald Ingholt & Palmyra*. Aarhus: SUN-Tryk. [Danish and English version]
- Wynne-Jones, S. (2016). *A Material Culture: Consumption and Materiality on the Coast of Precolonial East Africa*. Oxford: Oxford University Press.

Edited books

- Blömer, M., Lichtenberger, A. & Raja, R. (eds) (2015). *Religious Identities in the Levant from Alexander to Muhammed: Continuity and Change. Contextualizing the Sacred 4*. Turnhout: Brepols.
- Kropp, A. & Raja, R. (eds) (2016). *The World of Palmyra*. Palmyrene Studies 1, Scientia Danica, Series H, Humanistica 4:6. Copenhagen: The Royal Danish Academy of Sciences and Letters.
- Pedersen, A. & Sindbæk, S.M. (eds) (2015). *Et Fælles Hav: Skagerrak og Kattegat i Vikingetiden*. København: National Museum of Denmark.
- Raja, R. & Rüpk, J. (eds) (2015). *A Companion to the Archaeology of Religion in the Ancient World*. Chichester, West Sussex: John Wiley & Sons Inc.
- Raja, R. & Weiss, L. (eds) (2015). *The Significance of Objects: Considerations on Agency and Context*. Religion in the Roman Empire 3:2. Tübingen: Mohr Siebeck.
- Raja, R. & Weiss, L. (eds) (2016). *The Objects: Considerations on Agency and Context*. Religion in the Roman Empire 3:2. Tübingen: Mohr Siebeck.
- Sindbæk, S.M. (ed.) (2015). *Dragons of the Northern Seas: The Viking Age of Denmark*. Ribe: Museum of Southwest Jutland.
- Wynne-Jones, S. & Fleisher, J. (eds) (2015). *Theory in Africa, Africa in Theory: Locating Meaning in Archaeology*. London: Routledge.

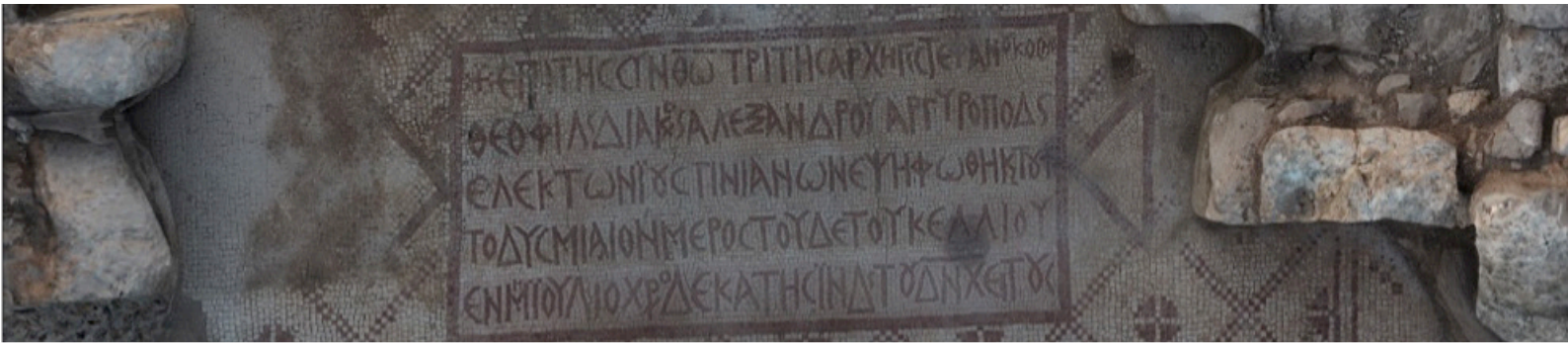
Book chapters

- Blömer, M. (2015). Der Kult des Iuppiter Dolichenus und die Frage nach Kontinuität. In Picht, L., K. Schmidt, G. Schmitz & L. Wiggering (eds), *The Limits of Change: Was ist der Wert der beständigen Dinge?* Berlin: Neofelis Verlag, 103–122.
- Blömer, M. & Nieswandt, H.-H. (2016). Atargatis und Alexander der Große: Ikonographische Überlegungen zu einer Münze aus Manbij/Hierapolis. In Nieswandt, H.-H. & H. Schwarzer (eds), *“Man kann es sich nicht prächtig genug vorstellen”: Festschrift für Dieter Salzmann zum 65. Geburtstag*. Padberg: Scriptorium, 13–30.
- Croix, S., Knudsen, M., Pentz, P., Pedersen, A., Sindbæk, S.M. & Sørensen, A.C. (2015). Tales. In Sindbæk, S.M. (ed.), *Dragons of the Northern Seas: The Viking Age of Denmark*. Ribe: Museum of Southwest Jutland, 35–99.
- Gammeltoft, P., Jakobsen, J.G.G. & Sindbæk, S.M. (2015). Vikingetidens bebyggelse omkring Kattegat og Skagerrak: Et forsøg på kortlægning. In Pedersen, A. & S.M. Sindbæk (eds), *Et Fælles Hav: Skagerrak og Kattegat i Vikingetiden*. København: National Museum of Denmark, 6–23.
- Knudsen, M., Pedersen, A., Pentz, P., Sindbæk, S.M. & Sørensen, A.C. (2015). Dragons of the northern seas: The Viking age of Denmark. In Sindbæk, S.M. (ed.), *Dragons of the Northern Seas: The Viking Age of Denmark*. Ribe: Museum of Southwest Jutland, 5–12.
- Knudsen, M. & Sindbæk, S.M. (2015). Dragon's den: Artisans and crafts. In Sindbæk, S.M. (ed.), *Dragons of the Northern Seas: The Viking Age of Denmark*. Ribe: Museum of Southwest Jutland, 25–30.



UrbNet's logo is inspired by the oldest known symbol of urbanism: the hieroglyphic ideogram for the word "city".

- Krag, S. (2016). Females in group portraits in Palmyra. In Kropp, A. & R. Raja (eds), *The World of Palmyra*. Palmyrene Studies 1, Scientia Danica, Series H, Humanistica 4:6. Copenhagen: The Royal Danish Academy of Sciences and Letters, 180–193.
- Kropp, A. & Raja, R. (2016). The world of Palmyra in Copenhagen. In Kropp, A. & R. Raja (eds), *The World of Palmyra*. Palmyrene Studies 1, Scientia Danica, Series H, Humanistica 4:6. Copenhagen: The Royal Danish Academy of Sciences and Letters, 7–16.
- Möller, H. & Becker, J. (2016). Keramik und Glas aus dem Areal der Friedhofskirche. In Niewöhner, P. (ed.), *Die große Friedhofskirche von Milet*. Wien: Verlag der Österreichischen Akademie der Wissenschaften, 292–310.
- Poulsen, B. (2015). The Church and monetization in early medieval Denmark, c. 1060–1160. In Gasper, G.M. & S.H. Gullbek (eds), *Money and the Church in Medieval Europe, 1000–1200: Practice, Morality and Thought*. Farnham: Ashgate, 141–157.
- Raja, R. (2015). Staging "private" religion in Roman "public" Palmyra: The role of the religious dining tickets (banqueting tesserae). In Ando, C. & J. Rüpke (eds), *Public and Private in Ancient Mediterranean Law and Religion*. Berlin: de Gruyter, 165–186.
- Raja, R. (2015). Palmyrene funerary portraits in context: Portrait habit between local traditions and imperial trends. In Fejfer, J., M. Moltesen & A. Rathje (eds), *Tradition: Transmission of Culture in the Ancient World*. Copenhagen: Museum Tusculanum Press, 329–361.
- Raja, R. (2015). Complex sanctuaries of the Roman period. In Raja, R. & J. Rüpke (eds), *A Companion to the Archaeology of Religion in the Ancient World*. Chichester, West Sussex: John Wiley & Sons Inc., 307–319.
- Raja, R. (2015). Fra portrætforskning til dokumentation af Syriens kulturarv. In Raja, R. & A.H. Sørensen (eds), *Harald Ingholt & Palmyra*. Aarhus: SUN-Tryk, 10–13.
- Raja, R. (2015). From studying portraits to documenting Syria's cultural heritage. In Raja, R. & A.H. Sørensen (eds), *Harald Ingholt & Palmyra*. Aarhus: SUN-Tryk, 10–13.
- Raja, R. (2015). Cultic dining and religious patterns in Palmyra: The case of the Palmyrene banqueting tesserae. In Faust, S., M. Seifert & L. Ziemer (eds), *Festschrift für Inge Nielsen*. Gateways 3, Hamburger Beiträge zur Archäologie und Kulturgeschichte des antiken Mittelmeerraumes. Aachen: Shaker Verlag, 181–200.
- Raja, R. (2016). Editor's abstract. In Kropp, A. & R. Raja (eds), *The World of Palmyra*. Palmyrene Studies 1, Scientia Danica, Series H, Humanistica 4:6. Copenhagen: The Royal Danish Academy of Sciences and Letters, 1.
- Raja, R. (2016). En romersk skulpturgruppe: Laokoon. In Nørskov, V. & P. Pentz (eds), *50 FUND: Højdepunkter i Arkæologien*. Aarhus: Aarhus Univeristy Press, 10–15.
- Raja, R. (2016). De makedonske kongers grave: Vergina. In Nørskov, V. & P. Pentz (eds), *50 FUND: Højdepunkter i Arkæologien*. Aarhus: Aarhus Univeristy Press, 236–241.
- Raja, R. (2016). Jødernes fæstning: Masada. In Nørskov, V. & P. Pentz (eds), *50 FUND: Højdepunkter i Arkæologien*. Aarhus: Aarhus Univeristy Press, 186–191.
- Raja, R. & Rüpke, J. (2015). Archaeology of religion, material religion and the ancient world. In Raja, R. & J. Rüpke (eds), *A Companion to the Archaeology of Religion in the Ancient World*. Chichester, West Sussex: John Wiley & Sons Inc., 1–26.
- Sindbæk, S.M. (2015). Northern emporia and maritime networks: Modelling past communication using archaeological network analysis. In Preiser-Kapeller, J. & F. Daim (eds), *Harbours and Maritime Networks as Complex Adaptive Systems*. Mainz: Verlag des Römisch-Germanischen Zentralmuseums, 105–118.
- Sindbæk, S.M. (2015). Steatite vessels and the Viking diaspora: Migrants, travellers, and cultural change in early medieval Britain and Ireland. In Barrett, J.H. & S.J. Gibbon (eds), *Maritime Societies of the Viking Age and Medieval World*. Oxford: Oxbow Books, 198–218.
- Wynne-Jones, S. (2015a). Biographies of practice and the negotiation of Swahili at nineteenth century Vumba. In Richard, F.G. (ed.), *Materializing Colonial Encounters: Archaeologies of African Experience*. New York: Springer, 155–176.
- Wynne-Jones, S. (2015b). Problems with practice: Dynamic interpretation in African archaeology. In Wynne-Jones, S. & J. Fleisher (eds), *Theory in Africa, Africa in Theory: Locating Meaning in Archaeology*. London: Routledge, 55–71.
- Wynne-Jones, S. & Fleisher, J. (2015). Theory in Africa, Africa in Theory. In Wynne-Jones, S. & J. Fleisher (eds), *Theory in Africa, Africa in Theory: Locating Meaning in Archaeology*. London: Routledge, 3–18.



Mosaic from the Mosaic Hall in Jerash. The inscription dates the mosaic to July AD 591, and the individuals mentioned in the inscription are all connected to the military unit *numerus Electorum Iustinianorum* (Photo: Danish–German Jerash Northwest Quarter Project).

Journal articles

- Ashby, S.P., Coutu, A.N. & Sindbæk, S.M. (2015). Urban networks and Arctic outlands: Craft specialists and reindeer antler in Viking towns. *European Journal of Archaeology* 18:4, 679–704.
- Barfod, G.H., Larsen, J.M., Lichtenberger, A. & Raja, R. (2015). Revealing text in a complexly rolled silver scroll from Jerash with computed tomography and advanced imaging software. *Nature Scientific Reports* 5, 17765.
- Blömer, M. (2016). Stadtgrabung in Doliche, *Antike Welt* 2016:1, 5.
- Blömer, M., Çobanoğlu, D. & Winter, E. (2016). Doliche 2014, *Kazı Sonuçları Toplantısı* 37:1, 41–58.
- Çobanoğlu, D., Blömer, M. & Winter, E. (2016). Doliche ve Dülük Baba Tepesi. *Aktüel Arkeoloji* 50, 88–99.
- Fleisher, J., Lane, P., LaViolette, A., Horton, M., Pollard, E., Quintana Morales, E., Vernet, T., Christie, A. & Wynne-Jones, S. (2015). When did the Swahili become maritime? *American Anthropologist* 117, 100–115.
- Frei, K.M., Coutu, A.N., Smiarowski, K., Harrison, R., Madsen, C.K., Arneborg, J., Frei, R., Guðmundsson, G., Sindbæk, S.M., Woollett, J., Hartman, S., Hicks, M. & McGovern, T.H. (2015). Was it for walrus? Viking Age settlement and medieval walrus ivory trade in Iceland and Greenland. *World Archaeology* 47:3, 439–466.
- Haensch, R., Lichtenberger, A. & Raja, R. (2016). Christen, Juden und Soldaten im Gerasa des 6. Jahrhunderts. *Chiron* 46, 177–204.
- Hawkes, J.D. & Wynne-Jones, S. (2015). India in Africa: Trade goods and connections of the late first millennium. *Afriques: Débats, éthodes et terrains d'histoire*, 6.
- Krag, S. & Raja, R. (2016). Representations of women and children in Palmyrene funerary loculus reliefs, loculus stela and wall paintings. *Zeitschrift für Orient-Archäologie* 9, 134–178.
- Larsen, J.M., Lichtenberger, A., Raja, R. & Gordon, R.L. (2016). An Umayyad period magical amulet from a domestic context in Jerash, Jordan. *Syria: Archéologie, Art et Histoire* 93, 369–386.
- Lichtenberger, A., Lindroos, A., Raja, R. & Heinemeier, J. (2015). Radiocarbon analysis of mortar from Roman and Byzantine water management installations in the Northwest Quarter of Jerash, Jordan. *Journal of Archaeological Science: Reports* 2, 114–127.
- Lichtenberger, A. & Raja, R. (2015). An architectural block with altar-iconography from the North-west Quarter of Jerash. *Levant* 2:1, 112–130.
- Lichtenberger, A. & Raja, R. (2015). New archaeological research in the Northwest Quarter of Jerash and its implications for the urban development of Roman Gerasa. *American Journal of Archaeology* 119:4, 483–500.
- Lichtenberger, A. & Raja, R. (2015). Intentional cooking pot deposits in Late Roman Jerash (Northwest Quarter). *Syria: Archéologie, Art et Histoire* 92, 309–328.
- Lichtenberger, A. & Raja, R. (2015). A hoard of Byzantine and Arab-Byzantine coins from the excavations at Jerash, 6. *Jerash 2014. Numismatic Chronicle* 175 (Coin Hoards 2015), 299–308.
- Lichtenberger, A. & Raja, R. (2016). Jerash in the Middle Islamic period: Connecting texts and archaeology through new evidence from the Northwest Quarter. *Zeitschrift des Deutschen Palästina-Vereins* 132:1, 63–81.
- Lichtenberger, A. & Raja, R. (2016). The Danish–German Northwest Quarter Project at Jarash: Results from the 2011–2013 seasons. *Studies in the history and archaeology of Jordan XII: Transparent Borders* 12, 173–188.
- Lichtenberger, A. & Raja, R. (2016). Jarash Northwest Quarter Project. In Corbett, C.J., D.R. Keller, B.A. Porter & C.P. Shelton, *Archaeology in Jordan, 2014 and 2015 Seasons. American Journal of Archaeology* 120:4, 631–672 (643).
- Raja, R. (2016). Becoming Urban. *Norwegian Archaeological Review* 49:1, 76–78.
- Raja, R. (2016). Representations of priests in Palmyra: Methodological considerations on the meaning of representation of priesthood in the funerary sculpture from Roman period Palmyra. *Religion in the Roman Empire* 2:1, 125–146.
- Raja, R. (2016). In and out of contexts: Explaining religious complexity through the banqueting tesserae from Palmyra. *Religion in the Roman Empire* 2:3, 340–371.



A wall was placed directly above one of the mosaic inscriptions found in the Mosaic Hall (Photo: Danish-German Jerash Northwest Quarter Project).

- Raja, R. & Rüpke, J. (2015). Appropriating religion: Methodological issues in testing the 'Lived Ancient Religion' approach. *Religion in the Roman Empire* 1, 11–19.
- Raja, R. & Sørensen, A.H. (2015). The "Beauty of Palmyra" and Qasr Abjad (Palmyra): New discoveries in the archive of Harald Ingholt. *Journal of Roman Archaeology* 28:1, 439–450.
- Raja, R. & Weiss, L. (2015). The role of objects: Creating meaning in situations. *Religion in the Roman Empire* 2, 137–147.
- Raja, R. & Weiss, L. (2016). The significance of objects: Considerations on agency and context, *Religion in the Roman Empire* 2:3, 297–306.
- Sindbæk, S. M. (2016). Crafting networks in Viking towns. *Medieval and Modern Matters* 4, 119–132.
- Sindbæk, S. M. & Croix, S. (2016). Helhest og Himmelhund: Dyrebegravelser på Ribes ældste gravplads. *Skalk* 4, 3–9.
- Sulas, F., Fleisher, J. & Wynne-Jones, S. (2016). Geoarchaeology of urban space in tropical island environments: Songo Mnara, Tanzania. *Journal of Archaeological Science* 77, 52–63.
- Wynne-Jones, S. & Fleisher, J. (2016). The multiple territories of Swahili urban landscapes. *World Archaeology* 48, 1–14.

Proceedings

- Lichtenberger, A. & Raja, R. (2016). Living with and on the river-side: The example of Roman Antiochia-on-the-Chrysorrhoeas-formerly-called-Gerasa. In Madsen, J.K., N.O. Andersen & I. Thuesen (eds), *Water of Life: Essays from a Symposium held on the Occasion of Peder Mortensen's 80th Birthday*. Proceedings of the Danish Institute in Damascus 11, Copenhagen: Orbis, 98–117.
- Wynne-Jones, S. & Fleisher, J. (2016). Coins and other currencies on the Swahili coast. In Haselgrove, C. & S. Krmnicek (eds), *The Archaeology of Money*. Proceedings of the workshop 'Archaeology of Money', University of Tübingen, October 2013. Leicester Archaeology Monograph 24. Leicester: School of Archaeology and Ancient History, 115–136.

Reports

- Raja, R. (2016). Illegal trade and export of cultural goods: The case of the Palmyrene funerary portraiture. In Chahin, D. & I. Lindblom (eds), *Fighting the illegal looting of Syria's cultural heritage: Report from the Sofia conference 16 September 2015. Initiatives to stop illicit antiquities trade financing the Syrian conflict*. Awareness rising. Norwegian Institute for Cultural Heritage Research, Sofia, 11–12.
- Raja, R. (2016). The history and current situation of World Heritage sites in Syria: The case of Palmyra. In Almqvist, K. & L. Belfrage (eds), *Cultural Heritage at Risk*. Stockholm: Axel and Margaret Ax:son Johnson Foundation, 27–47.

Scientific Reviews

- Blömer, M. (2016). Review of: Andrea U. De Giorgi, *Ancient Antioch: From the Seleucid Era to the Islamic Conquest* (Cambridge 2016), *Bryn Mawr Classical Review* 2016.12.34.
- Raja, R. (2016). Review of: A. Sartre & M. Sartre, *Palmyre: Vérités et légendes* (Perrin, 2016), *Bryn Mawr Classical Review* 2016.12.24.
- Sindbæk, S.M. (2016). Review of: J. Kershaw, *Viking identities: Scandinavian jewellery in England* (Oxford 2013). *Medieval Archaeology* 59:1, 343–344.



Aerial photographs taken in 1953 (right) and 2015 (left) showing the rapid development of the modern city of Jerash (credit: Royal Jordanian Geographic Centre).

Conference abstracts

Kropp, A. & Raja, R. (2016). The World of Palmyra. Abstract from the conference: *The World of Palmyra*, The Royal Danish Academy of Sciences and Letters, Copenhagen, Denmark, 16–18 December 2013.

Lichtenberger, A. & Raja, R. (2016). Biographies of cities and rivers: The case of the golden river at Gerasa in the Decapolis. Abstract from the conference: *Biographies of Place*, Aarhus, Denmark, 18–20 January 2016.

Lichtenberger, A. & Raja, R. (2016). Byzantine and Umayyad Gerasa: Results and findings from the Danish–German Jerash Northwest Quarter Project. Abstract from the conference: *Conspicuous productions: Gerasa's Pottery Finds from Byzantine to Umayyad Times in Context*, Aarhus, Denmark, 12 October 2016.

Raja, R. (2016). Middle Islamic Jerash: New evidence and perspectives. Abstract from the conference: *Mamluk Pottery: Material Culture and History in the Middle Islamic Period*, Aarhus, Denmark, 13 June 2016.

Raja, R. & Rüpke, J. (2016). Epochalisation and religious innovations in pre-Augustan and Augustan Rome. Abstract from the conference: *Epochalisation and Religious Innovations in Pre-Augustan and Augustan Rome*, Aarhus, Denmark, 6 April 2016.

Thomsen, K. (2016). Gerasa: Mortar. Abstract from the conference: *ToRS-Saxo 4th Annual Seminar*, Copenhagen, Denmark, 2 December 2016.

Other

Brandt, L.Ø., Cappellini, E., Mannering, U. & Schmidt, A.L. (2016). Nye artsbestemmelser af skind fra jernalderen: Forhistoriske proteiner fra skindkapper fundet i danske moser. *Nationalmuseets Arbejdsmark* 2016, 234–247.
<https://www.danskmoent.dk/pdf/mmStempel.pdf>

Kalaitzoglou, G., Lichtenberger, A. & Raja, R. (2016). Ausgrabungen im Nordwestviertel von Gerasa (Jordanien). *Jahresbericht des Instituts für Archäologische Wissenschaften für das Akademische Jahr 2014–2015*, 89–94.
http://www.ruhr-uni-bochum.de/archaelogie/mam/content/jahresbericht_2014_15.pdf

Raja, R. (2016). Danske pionerer i Palmyra: Den danske Palmyra-forskning i et historiografisk perspektiv. *Carlsbergfondets Årsskrift 2016: 140 års jubilæums årsskrift*, 56–63.

Rasmussen, C. & Barfod, G. H. (2016). Nyt renrum ved Aarhus Universitet. *Laboranten* 60:6, 8–11.

Christensen, J., Goodchild, H., Holm, N. & Sindbæk, S.M. (2016). Borgring: En nyopdaget vikingeborg ved Køge. *Museum Sydøstdanmark Årbog* 2015, 8–19.

Von Rummel, P., Wulf-Rheidt, U., Ardeleanu, S., Beck, D.M., Chaouali, M., Goischke, J., Möller, H. & Scheding, P. (2016). Chimtou, Tunesien: Die Arbeiten der Jahre 2014 und 2015. *e-Forschungsberichte des Deutschen Archäologischen Instituts* 2/2016, 99–109



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Cover: Map of Samarra, Iraq (Courtesy of Google Maps)

Back cover: Trench S at the top of the Northwest Quarter in Jerash. Here parts of a large cistern were excavated (Photo: Danish-German Jerash Northwest Quarter Project).

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