

UrbNet

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UrbNet

CENTRE FOR URBAN NETWORK EVOLUTIONS
The Danish National Research Foundation



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.

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GREETINGS FROM THE DIRECTOR

It is with great pleasure that I invite you to explore the first annual report of the Danish National Research Foundation's (DNRF) Centre of Excellence for Urban Network Evolutions (UrbNet).

2015 marked the beginning of an extraordinary adventure and the onset of a new voyage of exploration into urban archaeology. In 2014, the DNRF decided to award 65 million DKK to a new research centre focusing on urban development across Northern Europe, the Levant and East Africa, focusing on the period between the 3rd century BCE and the medieval times. This is the largest single contribution from a Danish funding body to humanities research in decades. The centre proposed to integrate archaeologies across regional and diachronic foci and history and employ cutting-edge methods and techniques from natural science, collaborating closely with the Aarhus AMS ^{14}C Dating Centre and the Niels Bohr Interdisciplinary Center for Plasma Mass Spectrometry (DK-ICPMS), both based at Aarhus University, as well as string of international partners.

This interdisciplinary endeavour carries the prospect of leading to an innovative and groundbreaking "High-Definition Archaeology", intended to set the tone for urban archaeological research for years to come, at the same time calling into question what has previously been established as "facts" about urban events and developments up through time. 30 January 2015, more than 150 people came to celebrate the official inauguration of UrbNet, which was hosted at Moesgaard Museum in the grand new auditorium.

Since then, we have advertised and filled a number of key scientific positions. The research programmes within the centre have gathered speed and expanded, e.g. to include a large,

newly started urban excavation in Doliche, South-East Turkey, brought to us by our newly employed assistant professor, Michael Blömer, and funded for a ten-year period by the German Research Council (DFG). Another assistant professor, Luise Ørsted Brandt started in March 2016, bringing an individual postdoc grant from the Carlsberg Foundation, and UrbNetco-funds her project. We welcomed two PhD students in 2015 and another five PhD students at the beginning of 2016. The carefully defined projects of these PhD candidates fill core positions in the centre, where we work hard toward fruitful ways to transcend disciplinary borders. The PhD students are key to the mission of the centre, a principal aim of which is to educate a new generation of researchers at the interface between science and humanities.

May-August constituted an intense field season with centre activities in both Ribe, Denmark, and Jerash, Jordan. Several centre members participated in these excavations or were involved in the subsequent data analyses, based on which a number of papers have already been published, been submitted for publication or are in the pipeline.

In the autumn, UrbNet took the lead on an EU Marie Curie action for a European Training Network (ETN), gathering a consortium of nine internationally recognised scholars on urbanism from eight European research institutions. The outcome of the application is expected to be announced in the first half of 2016. Whether or not successful in this round, the initiative, which focused on urban resilience in the pre-modern past, found great resonance across archaeologies and history at top institutions across Europe and provided UrbNet with a new set of international partners who were brought together for the first time across regional, diachronic and disciplinary borders through the unique UrbNet setting.

Since its inauguration, UrbNet work has attracted the attention of both Danish and international news media who have requested expert statements and comments on a variety of topics, ranging from the preservation of cultural heritage in Syria to the organisation of European trade networks in early medieval times. As projects evolve, and new findings emerge, we expect UrbNet to further increase the dissemination of research results and scientific knowledge to the wider public.

In January 2016, we hosted our first conceptual conference, "Biographies of Place", which will lead to the first publication in a newly founded UrbNet book series.

In April 2016, we welcomed our first visiting professor, Alain Schnapp (Université Paris 1 Panthéon-Sorbonne), who will spend three months at the centre, giving an urban lecture series, based on which a second book the UrbNet book series will be written.

The achievements of 2015 and the first quarter of 2016 year are plentiful and diverse, and I am exceedingly proud to captain the UrbNet team of creative and hard-working people. I hope you will enjoy reading our 2015-2016 highlights, and that you will follow us in our quest for a fundamentally new understanding of urban evolutions over time and space!

Rubina Raja
Professor, Centre director



Photo: Lars Svankjær

ABOUT URBNET

Centre for Urban Network Evolutions (UrbNet) is a groundbreaking archaeological research initiative exploring the evolution of urbanism and urban networks from the Hellenistic period to the Middle Ages. The centre is based at Aarhus University, School of Culture and Society, and is funded as a Centre of Excellence by the Danish National Research Foundation. UrbNet was inaugurated 30 January 2015.

UrbNet aims to compare the archaeology of urbanism from medieval Northern Europe to the ancient Mediterranean and the Indian Ocean World, and determine how – and to what extent – urban networks catalysed societal and environmental expansions and crises in the past. The centre is firmly rooted in the humanities but enjoys close collaborative ties with natural sciences.

Network urbanism and High-Definition archaeology

Becoming urban is widely recognised as one of the great turning points of history.

The innovations, cultural entanglements and environmental exchanges afforded by urbanism led to social and material complexity, which make up the core of today's civilisation. The complex stratigraphies of urban archaeology form a uniquely rich archive of this process. This evidence – the single most data-rich material archive of anthropogenic change in the last five millennia – remains vastly underexploited.

UrbNet aims to advance the understanding of the historical process of urban evolution, and this will be achieved by developing the ability of archaeology to characterise the scale and pace of events and processes. A series of recently developed scientific techniques afford unique potential for archaeology to refine the precision of dates, contexts and provenance ascribed to excavated materials. These will be integrated to form a new "High-Definition" approach to the study of global and interregional dynamics.

The provenance of materials is clarified through the application of chemical, isotopic and biomolecular analysis of organic and inorganic materials. The characterisation of contexts is augmented by the application of soil chemistry, analysis of ecofacts and micromorphology, and this is then used to reconstruct high-precision chronologies through increasingly sophisticated statistical modelling of radiocarbon dating and other fast-developing methods, such as optically-stimulated luminescence.

UrbNet's work comprises projects that intersect questions and problems concerning urban development and networks in the regions from Northern Europe over the Levant to the East Coast of Africa. It involves elaborate work on empirical material from a number of existing excavation projects, and the centre aims to make substantial contributions toward theoretical and methodological developments in the field. Individual projects may also arise from other bodies of data.

The centre is headed by centre director Rubina Raja, professor of Classical Archaeology, and deputy director Søren M. Sindbæk, professor MSO of Medieval Archaeology. Furthermore, the centre consists of a strong, interdisciplinary core group.

Website:

<http://urbnet.au.dk>



The newly appointed centre directors of the 2015 Centres of Excellence funded by the Danish National Research Foundation (Photo: Danish Ministry of Higher Education and Science).

STAFF

UrbNet Core Group

**Rubina Raja**

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

Rubina Raja's research evolves around 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.

**Søren M. Kristiansen**

Associate professor
Department of Geoscience, Aarhus University

Søren M. Kristiansen's work evolves 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.

**Charles Leshner**

Niels Bohr Professor
Department of Geoscience, Aarhus University

Charles Leshner's research evolves 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).

**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.

**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.

**Bjørn Poulsen**

Professor

School of Culture and Society, Aarhus University

Bjørn Poulsen's work evolves 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.

**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.

**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.



New Employees



Michael Blömer (1 November 2015-)

Assistant professor

School of Culture and Society, Aarhus University

Michael Blömer's research focus is 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.



Luise Ørsted Brandt (1 March 2016-)

Assistant professor

School of Culture and Society, Aarhus University

Luise Ørsted 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.



Neeke Hammers (1 October 2015-)

PhD student

School of Culture and Society, Aarhus University

Neeke Hammers' 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.



Christina A. Levisen

Centre administrator (1 July 2015-)

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.

Research and Student Assistants

Line Egelund (Ceramics in Context) (1 January 2015-)

Annette Højen Sørensen (16 February 2015-15 July 2015)

Kristine Thomsen (1 June 2015-31 December 2015)

Sara Ringsborg (Palmyra Portrait Project) (1 December 2015-)

Mette Normann Pedersen (15 December 2015-)

Mie Egelund Lind (15 December 2015-)

Anders Dam Hove (15 February 2016-)

Ann Lisa Pedersen (15 February 2016)

Marian Frandsen (15 May 2016-)

Jesper V. Jensen (Palmyra Portrait Project) (9 May 2016-)

Nathalia Kristensen (Palmyra Portrait Project) (9 May 2016-)

PhD students

**Hanna Dahlström** (1 January 2016-)

PhD student

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-)

PhD student

School of Culture and Society, Aarhus University

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

**Kristine Thomsen** (1 February 2016-)

PhD student

School of Culture and Society, Aarhus University

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

**Olav E. Gundersen** (1 February 2016-)

PhD student

School of Culture and Society, Aarhus University

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

**Ema Bauzyte** (1 February 2016-)

PhD student

School of Culture and Society, Aarhus University

Ema Bauzyte's project focuses on the East Africa Swahili Coast and will attempt 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.

UrbNet Affiliates

**Heike Möller**

Assistant professor (project: Ceramics in Context)

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 research focus has now shifted to Jordan.

**Alex Peterson**

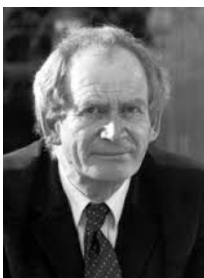
PhD student (project: Ceramics in Context)

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.

**Signe Krag**

Assistant professor (project: Palmyra Portrait Project)

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 BC to the third century AD.

**Alain Schnapp**

UrbNet Visiting professor, April-June 2016

Alain Schnapp is Professor Emeritus of Classical Archaeology at Université Paris 1 Panthéon-Sorbonne. His main research interests are Greek iconography and cultural history of Antiquity, and he is recognised among peers as one of the leading experts in his field.

URBNET PROJECTS

Danish-German Jerash Northwest Quarter Project: The 2015 Campaign

The nature and extent of the urban development of Roman Gerasa (modern Jerash) 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 the Roman empire. Research has, however, mostly focused on the development of the city along its main street and the city within a regional perspective. The aim of a new archaeological project, initiated in 2011, is to investigate the settlement history of the Northwest Quarter of Jerash through all periods and to contextualise the 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, four excavation campaigns have been undertaken from 2012 to 2015. 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 period 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; 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 Byzantine 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.

From mid-July until the end of August 2015, the Danish-German Jerash Northwest Quarter Project undertook further work in the Northwest Quarter of the Decapolis city of Gerasa.

A team of 36 specialists and students from BA level 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 also joined, including Austria, Denmark, Germany and the UK. During this campaign, the focus was on investigating the nature of water management installations, the dating of the city wall, use of inner-urban empty spaces for urban farming and gardening, as well as examining domestic architecture and an ecclesiastic complex with strong connections 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, and the focus was on open access publications. Places of publication in 2015 included: American Journal of Archaeology, Journal of Archaeological Science, Levant, Nature Scientific Reports, Numismatic Chronicle, as well as Syria.

Funding for the project and its various methodological studies comes from the Carlsberg Foundation, The Danish National Research Foundation, Deutsche Forschungsgemeinschaft (DFG), the EliteForsk Award 2015 and H.P. Hjerl Hansens Mindefondet for Dansk Palæstinaforskning.

Directors: Rubina Raja (Aarhus University) and Achim Lichtenberger (Ruhr-Universität Bochum).

Read more at: <http://projects.au.dk/Internationaljerashexcavation/>



Photo: The Danish-German Jerash Northwest Quarter Project



Photo: The Danish-German Jerash Northwest Quarter Project

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, heads of the registration team Assistant professor Dr. Annette Højen Sørensen and Assistant professor Dr. Heike Möller, Architect Nicole Pieper (Vienna), Conservator Margit Petersen (Viborg), Paleozoologist Pernille Bangsgaard Jensen (Copenhagen) and the field and registration team: Malene Byø, Philip Ebeling, Julian Einschenk, Alessandra Esposito, Luisa Goldammer-Brill, Niels Benjamin Hansen, Charlotte Bach Hove, Nicole Jezewicz, Hans-Peter Klosek, Kevin Kremser, Mie Egelund Lind, Kevin Luijter, Line Egelund Nielsen, Mette Normann Pedersen, Alex Hunter Peterson (PhD student), Søren Pfeiffer, Sara Ringsborg, Ulrike Rübesam, Karen Elizabeth Spencer, Janek Sundahl and Nicolai Broen Thorning. Dr. Peter Hambro Mikkelsen, director of the

Department of Conservation and Natural Science at Moesgaard Museum (Denmark), and Peter Mose Jensen evaluated the potential for archaeobotanic sampling, while Dr. Holger Schwarzer (Münster University, Germany) examined the ancient glass finds, and Ingrid and Dr. Wolfgang Schulze (Essen, Germany) the Late Byzantine and Early Islamic coinage of the years 2012-2015. A sampling project for geochemistry and environmental history research was started by Professor Dr. Ian Simpson (Stirling University, Scotland) and Associate professor Dr. Søren Munch Kristiansen (Aarhus University, Denmark).



Rubina Raja inspects sediment during modern construction work (Photo: The Danish-German Jerash Northwest Quarter Project).



The 2015 Jerash excavation team (Photo: The Danish-German Jerash Northwest Quarter Project).

Glass Provenance and Recycling as Evidence for Production Cycles, Self-Sustainability and Urban Networks.

The 2012-2015 campaigns of the Danish-German Jerash Northwest Quarter Project in Jerash, Jordan, revealed numerous glass artefacts, raw glass and glass slag, testifying, on the one hand, to the use and consumption of glass and, on the other hand, intensive glass production in Jerash. The studies - archaeological, chemical and isotopic - of glass artefacts within the framework of UrbNet and the Danish-German Jerash Northwest Quarter Project show that the nature of these activities was a secondary glass working process, rather than a primary. Furthermore, they attest to Byzantine raw glass of the type Levantine I being imported from large-scale glass production centers on the Mediterranean coast. Here, on the Levantine coast with beach sand, glassmakers mixed shell-bearing sand with natron (soda) formed naturally on dry salt-lake beds, most likely from Wadi el-Natron in Egypt.

Systematic elemental variations in glass from Jerash allow us to identify the range of minor minerals in the sands used for this glass production, providing new critical clues about the raw materials. While raw glass was not produced in Jerash, the trace elements reveal that recycling of the glasses occurred extensively and was well-organised. Glass was systematically collected and re-melted, which is reflected in the well-correlated trace-element trends among the glasses.

The more the glasses were recycled (i.e. re-melted), the higher the incorporated amounts of contaminants from fuel ash and furnace walls became. The local nature of the recycling processes and the narrow range of the chemical composition of the imported glass afford an opportunity to study these competing processes in such detail that, for the first time, we can identify the behaviour of minor elements, such as e.g. vanadium, arsenic, zirconium, thorium and uranium during these processes.

The implications of these studies are promising. They indicate a relatively high self-sustainable nature of glass recycling in Jerash, which in turn allows for the detailed characterisations of the ancient recycling processes. The intention is to expand the glass studies further to include raw imported glass and glass slag, as well as a detailed trace-element study of sand from the Levantine coast, which has never been undertaken. Complimentary studies of other materials, such as iron, ceramics and semi-precious stone, will be carried out in parallel studies in order to allow for comparison of recycling scales with other material categories.

Investigators: Gry H. Barfod (Aarhus University), Achim Lichtenberger (Ruhr-Universität Bochum) and Rubina Raja (Aarhus University).



A green glass bead being processed in the micro-XR (Photo: Gry H. Barfod).



The bead close-up (Photo: Gry H. Barfod).

Geoarchaeological Programme at Jerash

As part of UrbNet's research imperatives in Jerash, geoarchaeology has been introduced to the excavation programme with the purpose of giving new insight into urban site formation processes and explore relationships between the city and its hinterland within an urban evolution perspective.

The Northwest Quarter of Jerash, Jordan, is densely covered with building structures laid out on a terrace system, stretching over the entire hill (app. 4 hectares). The area inside the wall is the highest point in the ancient city, and one specific research focus is the settlement history of the hill and the continuities and changes this area underwent over time.

Based on field observations in 2015 of the Jerash Northwest stratigraphies, there is potential for field- and laboratory-based geoarchaeological approaches to make significant and distinctive contributions to the understanding of site formation processes. In doing so, we will contribute to the overall understanding of urban development at Jerash.

The geoarchaeological prospection furthermore revealed that the perhaps most innovative and groundbraking approach would be to open up a new programme to explore the relationship between the city and the wadi (river); we see this as a long-term programme which will also benefit the wider UrbNet research programme.

As a starting point, we will explore the potential of the wadi sediments as a cultural and environmental record that can be explicitly related to the archaeology of the city.

The geoarchaeological research programme in Jerash will be conducted in close collaboration with Professor Ian Simpson, Head of School of Natural Sciences, University of Stirling, Scotland.

In connection with the 2015 excavation in Jerash, two members from the Department of Conservation and Natural Science (Moesgaard Museum) spent a week at the site in order to assess the possibility of using various sampling techniques. The recovery of charred plant material seems to be possible, and they encountered the first sign of charred seeds of flax and olive stones. Furthermore, the department has evaluated all charred organic material intended for ^{14}C dating from the site.



Trench at the city wall (Photo: Søren M. Kristiansen).



Co-director, Professor Achim Lichtenberger, Ruhr-Universität Bochum, prepares to examine the wadi sediment (Photo: Søren M. Kristiansen).



Peter Mose (Moesgaard Museum) in the process of looking at samples in the microscope (Photo: Peter H. Mikkelsen).

Ribe Rosenallé Excavation Project: The 2015 Campaign

Photo: Søren M. Sindbæk

Ribe at the Danish Wadden Sea is one of the most important archaeological sources for European history between the Migration period and medieval times. As one of a small group of emporia, which emerged from the end of the 600s around the North Sea and the Baltic Sea, Ribe was a hub for maritime networks, through which the exchange of goods and cultural interactions connected the world in new ways from Northern Norway to the Mediterranean and the Middle East. As the earliest city in the North, Ribe gathered and catalysed a world in change at the threshold of the maritime expansion of the Viking Age.

The archaeological remains from the earliest Ribe comprise burials and fortification structures, buildings, workshops and roads, spread out across a large area. As a source of Northern Europe's urbanisation and early market exchange during the period c. 700-850 CE, Ribe's archaeology is outstanding. Whereas the remains from other North-Sea emporia have been largely destroyed, the archaeology of early Ribe is, in places, exceptionally well-preserved in thick cultural layers, with a large material of artefacts, traces of crafts and other remains. In present-day Denmark, Ribe is indisputably the most abundant archaeological source for the hundred years leading up to the Viking Age. Its intact and detailed stratigraphy also makes Ribe a significant reference point for archaeological chronology and knowledge about finds in Northern Europe in the 700s. The remains, however, have mostly been subject to small-scale or methodologically inadequate excavation.

In May and June 2015, the Ribe Rosenallé Excavation Project continued fieldwork initiated in 2014 at a site along the perimeter for the Viking-age town. The excavation's target is a rare, undisturbed and accessible area, which allows the first large-scale open-area excavation of the early urban centre. The area comprises traces of Ribe's earliest defences together with a central part of the town's pagan cemetery and remains of buildings from several episodes of settlement in the period 700-1200 CE. Together with excavations previously conducted by the Museum of Southwest

Jutland outside the defences, the excavations aim to uncover a continuous sample of the urban topography, reaching over 250 m from the outer reaches of the town to the centre. This enables a new and dynamic view of the urban development, revealing previously unknown and sometimes profound changes in the history of the town. Among the highlights of the 2015 campaign was the discovery of several furnished graves, among them a cremation grave with a unique, and completely intact, imported French wine pitcher.

The excavations are directed by Søren M. Sindbæk in collaboration with Morten Søvsø, head of archaeology at the Museum of Southwest Jutland, and Dr. Sarah Croix, project researcher at Aarhus University. They are organised in collaboration with the Museum of Southwest Jutland and the Department of Culture and Society at Aarhus University as training excavations for archaeology students. A number of UrbNet staff participate actively in the fieldwork and related analyses. The results are due to be published as a monograph by Aarhus University Press. Analytical results of materials from the 2015 are forthcoming, and several journal papers are prepared for publication. A comprehensive monograph of the pagan cemetery is being prepared by Dr. Sarah Croix, funded by a special grant from the Danish Ministry of Culture.

The team of the 2015 field work consisted of directors Søren M. Sindbæk (Aarhus University), Morten Søvsø (Museum of Southwest Jutland) and Sarah Croix (Aarhus University), Troels Bo Jensen, Michael Alrø Jensen, Maria Knudsen and Sarah Qvistgaard (Museum of Southwest Jutland) and Victor Palsted Bizoev, Pia Berg Christensen, Eirik Randrup Christensen, Mira Vettterslev Dønstrup, Marian Frandsen, Nikoline Gilså, Steffen Hansen, Lasse Skjerninge Hermansen, Anders Dam Hove, Serena Marina Siff Jepsen, Henriette Lise-Lotte Kammann, Adisa Kicin, Anna Hennebjerg Lunde, Cathrine Frederiksen Madsen, Matias Sebastian Møller, Kathrine Knudsen Møller, Maiken Pehrson Nielsen, Rick William Nielsen, Nikolaj Grønbæk Olesen, Ann Lisa Pedersen, Isabella Birk Uhrskov, Hanna Antonie Wigen (students).

Read more at: <http://sciencenordic.com/ancient-urn-hints-global-trade-network>
<http://www.sydvestjyskemuseer.dk/da/aktuelle-projekter/de-doedes-by/>

Photo: Søren M. Sindbæk

Dating Ribe's Earliest Defences

Viking-age Ribe was surrounded, at some point in time, by considerable defences, consisting of an earthen rampart and a c. 20 m wide shallow moat. The earthworks extended over more than half a kilometre, representing one of the most formidable defensive structures known from the Viking Age in Scandinavia. As a major building work and a physical demarcation of the urban area, the rampart has been a pivotal point in discussions of the evolution of Scandinavia's earliest town. The possible presence of major defences contemporary with the early trading port would be the earliest recorded case of a town wall in Scandinavia and a major challenge to the general view of early Ribe as an open, rather weakly institutionalised community. However, the dating of the moat was based on object finds and individual stratigraphic relationships, and it could not be pinned down further within a period from c. 850-1000 CE.

The Ribe Rosenallé Excavation project has targeted the moat, aiming to establish the chronology of the structures more exactly. For the first time, a wide stretch of the rampart was uncovered, enabling us to study the layout of the moat and establish that no major wooden constructions had formed part of the moat or rampart. A consequent stratigraphic excavation procedure allowed us to obtain an unmixed artefact collection from the fill of the moat, comprising several coins and other well-dated artefacts, making it clear that the moat was filled in by the mid-eleventh century at the latest.

In order to date the construction of the moat, other methods were required. With the collaboration of UrbNet's geoarchaeological team, samples were obtained from a thin layer of humic soil in the moat bottom, the remains of a short-lived vegetation cover. Using a method developed by the Aarhus AMS ^{14}C Dating Centre at Aarhus University, organic matter from the buried former soil surface was submitted to acid-alkali-acid fractionation of soil organic matter (SOM) and subsequent ^{14}C AMS-dating. The results were analysed together with those of conventional ^{14}C -dates on charred seeds and twigs from the floor of the moat and subjected to Bayesian statistical modelling.

The results have major and surprising implications for the reconstruction of early urban history in the North. It is clearly demonstrated that the major defences were not constructed in the ninth century, when Ribe was first active as a trading port, but only appeared in the tenth century, at a time when few other features have been identified, and the town is commonly assumed to have been partly deserted. The rampart now marks a major phase of activity, which was previously practically unknown and can be associated with a decisive new turn in the urban development. The context and implications of these new realisations are a major goal for continuing fieldwork to elucidate.

Photo: Søren M. Sindbæk



A student adjusts the levelling staff over the moat (Photo: Søren M. Sindbæk).



An 11th-century coin found in the filling of the moat (Photo: Søren M. Sindbæk).

The Doliche Excavation: Exploring Urbanism in Syria (Assistant professor Michael Blömer)

Doliche was a major city of Roman and Byzantine North Syria, located in Turkey (near Gaziantep, South-East Anatolia), approximately 50 km north of the Turkish-Syrian Border. The city has not attracted scholarly attention so far, and no surveys or excavations have been carried out. This, however, is about to change. A new excavation project was begun in 2015, generously funded by the German Research Council (DFG). This provides the opportunity to conduct intensive surveys and excavations in core areas of the city over the next three years. The goal is to explore the biography of the city and to enhance our understanding of urban development in Syria from the Hellenistic to the Byzantine period. To achieve this ambitious aim, the excavation was linked to UrbNet in November 2015. The research environment offered by UrbNet and the stimulating exchange of experiences with colleagues of various archaeological disciplines and sciences will be pivotal to turn the Doliche excavations into a case study for the exploration of urbanism of ancient Syria and beyond. By integrating contextual archaeology and scientific techniques, we will not only test and challenge the urban history of Doliche but also deliver new assumptions about urbanism and urban networks in the Near East.

In summer 2015, first soundings in a residential area of the Late Roman and early Byzantine period yielded promising results.


Most spectacular was the discovery of a late Roman villa with a large colonnaded courtyard and splendid mosaic floors. Many features of the villa's furniture have been recovered as fragments of wall-painting, marble revetments, pottery and architectural decoration. The comprehensive study of this villa and the adjacent buildings and the context-oriented analysis of the finds promise to provide an unbiased picture of the development of the city in Late Antiquity.

In 2016, the activities in Doliche will be extended considerably. Excavations in the residential area will be continued, and geophysical prospection will be initiated. In addition, an intensive survey of the urban area will start, and new excavations will be undertaken in the public area of the city where the agora and the archive of the city were located.

Photo: Michael Blömer



Cleaning and conservation of the mosaic floor (Photo: Peter Jülich).



Ceramics in Context (Assistant professor Heike Möller)

Read more at: <http://projects.au.dk/ceramics-in-context/>

Throughout Antiquity, Gerasa in the Decapolis (modern Jerash) was a centre for pottery production, and large amounts of pottery material has been excavated by numerous missions working in the city over the last many decades. However, more than a 100 years of excavation has mainly focused on uncovering the major public monuments, and although these excavations have brought to light immense amounts of finds, only few attempts at synthetic studies have been undertaken. Therefore, there are still large gaps to fill, especially concerning the lack of published material which takes a contextualised approach. The collective research project Ceramics in Context was initiated to fill those gaps and to investigate the ceramic in context, working methodologically on disentangling and understanding complex stratigraphies and showing how a better pottery chronology might help us push forward new understandings of archaeological approaches.

Over the past years, the focus was on basic research to gain the best results in pottery studies from the site and region. A standardised typology was established with a one-solution description of different types by creating functional groups and hierarchies. Archaeometric studies on local pottery production were made to characterise the local wares in detail. The results will not only help to create a fingerprint of local production but also contribute to further studies concerning intra- and interregional exchange. This is possible due to the infrastructure of the Danish-German Jerash Northwest Quarter Project, which involves a string of experts working on a variety of objects groups.

The last years of excavation brought to light an immense amount of pottery. Destruction layers of the 749 CE earthquake preserved a lot of material that gives insight into the daily life immediately prior to the catastrophe. Middle Islamic structures allow further studies on almost unknown Ayyubid/Mamluk pottery in Jerash. Roman pottery, which is, until today, hardly published, was found in early contexts on the site and will contribute to a better understanding of Roman Gerasa.

The pottery has been and will be further studied in detail, both typologically and chronologically and through a contextual approach. The possibility of using innovative scientific methods makes it possible to go beyond such studies, allowing research on micro- and macro-regional scale. Content analyses of local and imported amphorae combined with geoscientific and archaeozoological studies of flora and fauna contribute to questions of food supply and give insights into the network of micro- and macro-market level in the Eastern Mediterranean and beyond the region of the Decapolis cities.

Ceramics in Context is funded by the Carlsberg Foundation for the period 2015-2018. PI is Professor Dr. Rubina Raja. Employees include Assistant professor (Classical Archaeology) Dr. Heike Möller, PhD student (Classical and Medieval Archaeology) Alex Peterson, students (Classical Archaeology) Line Egelund and Janek Sundahl. The project is part of UrbNet, as well as the Danish-German Jerash Northwest Quarter Project.

Fur and Skin Trade in Viking and Medieval Denmark: A Biomolecular Investigation of Archaeological Fur, Skin, and Leather from Denmark and Its Contribution to the Understanding of the Viking and Medieval Fur and Skin Trade (Assistant professor Luise Ørsted Brandt)

Written sources from the 10th-16th centuries describe fur as a central commodity in Viking and medieval towns. This project aims to species-identify Viking and medieval fur and skin materials using proteomic methods on samples taken from extant clothing of the era. The data will contribute to current debates about trade of fur and animal skins and the demand for them.

Archaeological fur and skin materials will be sampled, and the relevant animal species identified using newly-developed proteomic methods: PMF and MS-based peptide sequencing. The findings will shed light on the raw materials required for leather clothing and their provenance in the Viking and Medieval period. The data will be considered using Actor Network Theory (ANT) and concepts of materiality to hypothesise why the skin and fur of specific species were chosen to make garments.

By investigating how the relationship between leather, fur and people contributed to the formation of new social and cultural values in the earliest Danish towns, this project provides perspectives for understanding and interpreting perceptions of raw materials, sources of supply, stimulators of demand and the mechanisms by which they interrelate.



Urban Encounters: Mobility, Migration and Networks in Premodern Scandinavia (Project PhD student Kirstine Haase)

The research and public outreach project Urban Encounters – Mobility, Migration and Networks in Premodern Scandinavia explores new perspectives of research into premodern urbanism in northern Europe (1000-1700 AD). Urban Encounters is funded by the Velux Foundation and is a collaborative project between Museum of Copenhagen, Odense City Museums, The Nya Lödöse project in Gothenburg (The National Historical Museums (SHMM) and their collaborators Bohusläns Museum, Museum of Gothenburg and RIO Gothenburg) and Centre for Urban Network Evolutions (UrbNet) at Aarhus University. The project runs over a period of 4 years starting 1 January 2016.

Urban Encounters investigates the establishment and development of towns through the vast material brought to light in the large excavations conducted in Odense, Copenhagen and Nya Lödöse in the recent years. The size of the projects and the new scientific methods used during the excavations provide a unique opportunity for comparative and contextualised analysis of the premodern urbanisation. Through a broad understanding of the concepts “migration”, “mobility” and “networks”, Urban Encounters aims to explore ways of studying urbanism through tracing different types of actors, meetings, practices and networks in the material culture and seeing how these affected the urban places.

The multitude of encounters taking place in the towns is part of what makes towns and town life different from life in other places. To see the town as an instrument or catalyst for meetings between people gives a perspective which puts people, their motivations and experiences in focus. This is an aspect of the study of premodern urbanism which holds great potential but is in need of further attention.

The following research questions are central to the project:

- How can urbanisation be seen in the material culture of the three towns?
- Is it possible to trace urban identities and life forms in the archaeological record?
- How is the town as a meeting place expressed in the archaeological record?
- How has migration and peopling of the town contributed to the shaping of an urban identity and way of life?

The first three questions relate to the extensive archaeological material from the three excavations, while the fourth puts the results into perspective according to recent research on migration and identity.

Concrete output:

- 2 PhD projects by Museum of Copenhagen and Odense City Museums, both hosted by Centre for Urban Network Evolutions.
 - Towards the making of a town and its inhabitants – a study of urbanity seen as practice and life form in early and high medieval Copenhagen By Hanna Dahlström
 - An Urban way of Life – Urban practices, networks and identities in Odense from AD 1100-1500. By Kirstine Haase.
- Two international conferences with the central themes of the project as focal points. The first conference Towns as Meeting Places will be held 13-14 October 2016.
- Four peer-reviewed articles written in collaboration between participants of the project.
- Dissemination of the research results through videnskab.dk.
- Teaching materials and courses.
- Development of a mobile museum with place specific, digital and artefact based dissemination elements.

The Palmyra Portrait Project (Director Rubina Raja)



The Beauty of Palmyra (Photo: Ny Carlsberg Glyptotek).

In 2012, the Palmyra Portrait Project was initiated by Rubina Raja together with her colleague Andreas Kropp from University of Nottingham. The project is based at Aarhus University and funded by the Carlsberg Foundation and Aarhus University. The project members set out to compile a comprehensive corpus of the Palmyrene funerary sculptures, which were estimated to be about 1,700 pieces scattered across collections and museums throughout the world as well as in Palmyra itself, both in-situ in the ancient graves as well as 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 the first project period, at 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 an utmost important group of evidence to scholars of Antiquity. The portraits furthermore 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 Roman as a reaction to their disloyalty towards the Roman emperor when Queen Zenobia conquered large parts of the Near East, including Egypt, and claimed independence.

Apart from only having been produced for about three hundred years, three percent of these portraits are also securely dated through inscriptions and numerous of them carry inscriptions, giving us 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, which were closed off with a representation of the deceased and sometimes also 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 project has in 2015 been prolonged through an additional grant from the Carlsberg Foundation until the end of 2019. This has allowed for the employment of additional members to complement the Palmyra Portrait Project group and includes an assistant professorship, two PhD scholarships as well as a number of research assistants.

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

Read more at: <http://projects.au.dk/palmyraportrait/>

CARLSBERG FOUNDATION

The Palmyra Portrait Project: Palmyrene Women
(Assistant professor Signe Krag)

Portraiture from Palmyra make up the largest corpus of representations of men, women and children from the Roman Imperial period outside of Rome.

One of the main aims of the Palmyra Portrait Project is to compile a corpus of all known Palmyrene portraits in a database developed in the project. The accumulation of the corpus benefits from the archive assembled by Harald Ingholt. Over several decades, he collected information on Palmyrene portraits; the locations of many of these are unknown today.

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 various jewellery and brooches are extremely individualised and very unique to the Palmyrene portraiture. Palmyrene women are more frequently portrayed alone, but in many instances, they are also portrayed with their children, husbands, siblings or in larger family constellations. The portraits offer an insight to the roles played by Palmyrene women in society and in the Palmyrene family structures.

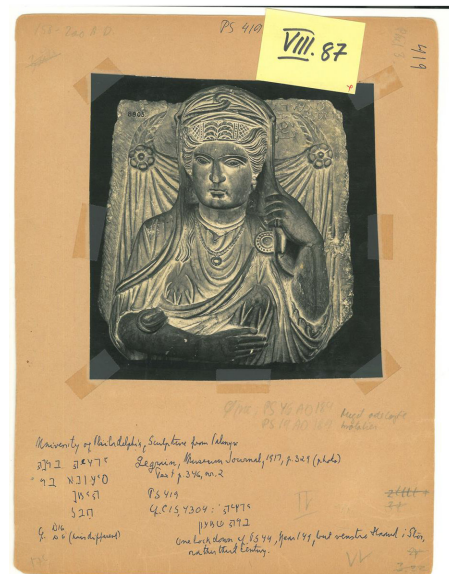
The portraits are analysed through their visual qualities in order to gain a broader understanding of the meeting with and reception of the portraits in ancient Palmyra.

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 (dir. Søren M. Sindbæk) and Sydvestjyske Museer (dir. Morten Søvsø) have been conducting further archaeological excavations in the area, 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” has been designed in order to investigate Ribe’s early population through its burial remains.

Furthermore, the funerary buildings, in which the portraits were once located, are examined in order to understand how the portraits were displayed and used in their original context.



A relief with a Palmyrene woman dated to the late 2nd century AD, University of Pennsylvania Museum of Archaeology and Anthropology, B8905 (Ingholt Archives, PS 419, Ny Carlsberg Glyptotek).

The City of the Dead (affiliated project)
(Postdoc Sarah Croix)

The project combines a theoretically-based archaeological approach to the study of the materiality of the burial rituals and a set of scientific analyses (osteology, Sr isotope analysis, AMS C14 dating, proteomics, tomography, micro XRF, ICP-MS), conducted as sub-projects in collaboration with the Conservation and Natural Science Dept., Moesgård Museum, the National Museum of Denmark, the Center of GeoGenetics at Copenhagen University, the AMS 14C Dating Center and the Centre of Excellence UrbNet. The composition of the population, its geographical mobility, its ways of dealing with death, and its cultural diversity, resulting from the negotiation of identities in the "pioneer" context of the urban setting will be explored. In this way, early medieval urbanism will be shown to be not just an economic phenomenon, but a unique social and cultural way-of-life.

The project is hosted by Sydvestjyske Museer and funded by the Danish Ministry of Culture's Research Committee with the support of UrbNet.

PI: Sarah Croix

PHD PROJECTS

Trade, Import and Urban Development (Neeke M. Hammers)

The PhD project "Trade, Import and Urban Development" takes an archaeobotanical approach to the interpretation of network connections and urban development in northern Europe during medieval times. 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 in 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. Isotope analysis, in particular analysis of strontium isotopes, can be used as a tool to indicate the provenance of archaeological materials. This project will aim to further develop methods for strontium isotope analysis on (uncarbonised) plant remains from archaeological contexts. 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 currently 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. During 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 assemblage of finds and well-preserved structures such as booths, houses, byres, 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 will allow for a detailed account on changes and developments in food economy and the local environment. Recent analysis of soil samples has revealed the presence of exotic plant species; grape (*Vitis vinifera*) and fig (*Ficus carica*). Fig and grape are rarely found in medieval sites in Denmark. The presence of these fruits is therefore significant for interpretations on urban economy and trade connections.

Through the city excavation at Odense, this project is connected to the PhD project by Kirstine Haase (started in 2016), which is part of a 4-year research and dissemination project "Urbaniseringens Møder og Mennesker" (People and encounters in urbanization) – a cooperation between Museum of Copenhagen and The Nya Lödöse project in Gothenburg, as well as UrbNet.

Understanding Complex Urban Space and Development Through Geochemistry: The Case of Jerash in Jordan (Kristine Thomsen)

The aim of the project is to create a new High-Definition method, combining Classical Archaeology and geochemical methodology. The project relies extensively on the collaboration with the ongoing excavations in Jerash, Jordan, which aim to excavate the Northwest Quarter of the city in order to undertake an archaeologically-based settlement examination to further the understanding of the development of this area, thus contributing insights more generally regarding the urban development of Jerash. This has to be done both in detail and in a diachronic perspective.

Jerash provides the ultimate backdrop for this kind of investigation. The investigations will take place in the Northwest Quarter where excavations have been undertaken since 2011. Several campaigns have yielded a large amount of finds, and architectural, geodetic and geophysical surveys have already been undertaken.

It is a complex study site where occupation continues from late Hellenistic to medieval times. The city grew immensely throughout the Roman period, but the Late Antique and Islamic periods are truly when the urban density, prosperity and settlements seemed to blossom. The Northwest Quarter was densely settled over a long period of time, and more than 300 walls have been excavated. The area stretches from the Artemision to the city walls and is the highest area within the walled city of Gerasa.

This PhD project will use optically stimulated luminescence for chronology purposes, as well as micromorphology and chemical analysis for studying the components in the soil.

Towards the Making of a Town and Its Inhabitants: A study of Urbanity as Practice and Lifeform in Early and High Medieval Copenhagen (Hanna Dahlström)

The main aim of the project is to analyse the early urban development of Copenhagen from c. 1050 to c. 1300 through a view of urbanity as practice. The first steps towards the established town are very much unknown but important in understanding the further course of urban development and the inception of an urban way of life. Recent excavations at the Town Hall Square in central Copenhagen have produced material evidence, giving new insight into the early phases of the settlement. This project will use the new source material to explore which activities, agents and networks have been important in the early urbanisation process.

At a more general level, it will investigate what information about urbanity can come from studying everyday-practices and, with Copenhagen as a case study, add to the discussion of how to understand early urbanism through material culture. The project also aims to significantly add to the understanding of the chronology and character of early Copenhagen and, in doing so, refine and revise the narrative of the formation and early

development of the town and its inhabitants. The thesis of the project is that urbanity should be seen and understood as social practice undertaken by people active in the town. Networks and mobility of people, things and ideas are key aspects, which have influenced the developing urban life, and those aspects will be in focus within the project.

Four domains have been identified as useful for the project; these are based on the empirical source material at hand and have been chosen because they hold great potential to contribute to the main questions, perspectives and goals of the project. The four areas are Craft and production, Infrastructure and organisation of space, Households and consumption and Cemeteries and their people. They can individually contribute with pieces to the larger mosaic, and seen together, they can provide information relating to urban activity, construction of the social space, everyday-practices, actors and networks.

Archaeologists working at the site of Town Hall Square in central Copenhagen, excavating one of several surfaces partly composed of iron slag. This feature is interpreted as parts of a road or a prepared open area. Remains of iron working is one of the key sources of examining the early development of the town of Copenhagen – the activities, people and networks important in the urbanisation process. The slag surfaces are also a source of information to social practices performed in the early town (Photo: Museum of Copenhagen).

Ceramics in Context (Alex Peterson)

This project aims to explore the settlement history of the Middle Islamic period at the Northwest Quarter of the ancient city of Gerasa, known today as Jerash, in Jordan. Ongoing excavations since 2011 have resulted in many discoveries and expanded current knowledge of urbanisation and settlement development over time in Jerash. Although Jerash was an important Decapolis city, much excavated material has contributed to the understanding of the Ayyubid-Mamluk periods. On top of the NW hill, an extensive building complex was found, with Mamluk-style pottery alongside repairs and modifications of the buildings, indicating Mamluk settlement over several generations. This activity is reflected in the material culture through handmade geometrically-painted ware (HMGPW) – a ceramic style generally associated with Mamluk activity and also known from the Ayyubid period. Evidence of Ayyubid-Mamluk occupation in this area is much better represented than previously thought. The PhD project Ceramics in Context grew out of a need to analyse this later medieval material. By examining the ceramic material from these periods, both empirically and in a wider regional context, the aim is to better understand the settlement history in the Northwest Quarter.

The ceramic repertoire of the Middle Islamic period in Jordan, and its chronology and typology, is still largely unclear. Although frequently studied from historical and art historical perspectives, the period's pottery and material culture have received little attention.

Research on Islamic pottery in Jordan and the Levant is still at an early stage of development, and many studies publish ceramics without contextualising or interpreting them in meaningful ways.

This project aims to develop a more precise ceramic chronotypology for the Ayyubid-Mamluk period by focusing on Jerash. Through empirical analysis of individual finds, contextualisation within the site and the urban development of Jerash will take place. 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. It is also 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 the empirical analysis 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.



Layout of Middle Islamic complex in the NW Quarter of Jerash
(Photo: Danish-German Jerash Northwest Quarter Project).

An urban way of life: Urban Practices, Networks and Identities in Odense, 1100-1500 CE (Kirstine Haase)

Based on recent excavations of an almost entire block in the medieval town center of Odense, as well as older excavations and written sources related to medieval Odense, this project will study the urban way of life in Odense from the 12th to 16th Century.

Central research questions are:

- What characterises the social practices of the town?
- How are urban practices expressed in the archeological record?
- How were the town's local, regional and transregional networks manifested?
- How are identities of the urban communities expressed in the material culture?

Putting the archaeological context first and analysing settlement patterns, use of resources, waste management and use of public and private space, the project will identify social practices as they are expressed in an urban environment. The social or urban practices are seen as defining the urban way of life.

Urban practices are not the only thing defining the urban way of life; networks related to the town are also of significance. Networks have played a crucial role in shaping the town and its people as they have facilitated an exchange of material culture, practices and norms.

By shedding light on artefact biographies and innovations as seen in changes in material culture and structures, networks can be reconstructed and the relations within them pointed out and highlighted.

Furthermore, the inhabitants and visitors that peopled the town are key elements in understanding the urban way of life. Who were they and what defined them? The vast and well preserved material from Odense holds the potential to study the identities of the inhabitants and the identities of the various communities (formal or informal) within the town, e.g. women, children, merchants, craftsmen etc. This can happen both through the artefacts themselves but also through their distribution, past and archaeological context.

Addressing the aforementioned themes via a contextual approach, combined with a wide range of scientific analyses, the project aims to establish a new archaeological research approach to urbanity.

Besides coinciding with the overall aims of UrbNet, the PhD is also part of the research and public outreach project "Urban Encounters – mobility, migration and networks in premodern Scandinavia".

The project is funded by the Velux Foundation and is set up as collaboration between the Museum of Copenhagen, Odense City Museums, the Nya Löösö project in Gothenburg and UrbNet at Aarhus University.



The street "Overgade" from the 12th Century in the background, in front the floor of a 15th Century basement (Odense City Museums).



A wooden beaker from the 14th Century (Photo: Odense City Museums).

Commercialisation and Urbanisation on the Periphery of Medieval Europe (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. The research on commercialisation as a driver of fundamental social change is inspired by recent research into medieval England, but the working field is primarily Scandinavia. The subject will be approached 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, CE and a large geographical area, Scandinavia, have 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 with the potential to reveal agricultural changes resulting from increased commercialisation and urbanisation with studies of the coin material where the main object is to chart the spread of coins through new layers of society on a more High-Definition scale, through stratigraphic analysis, than has previously been done.

The macro study will consist of correlating the emergence of medieval towns with the numismatic material, hoping to reveal much more about what the urbanisation and commercialisation process actually was, who were able to partake in it, and when it actually occurred. 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.

East African Pyro-Technological Processes and Networks, 7th-10th Centuries AD (Ema Bauzyte)

This research project aims to conduct a comprehensive interdisciplinary study of archaeological material retrieved from 7th-10th century contexts on the East African coast. The project will focus on the material produced, using two pyro-technologies: iron smelting and clay firing.

A number of sites with connection to the coast and in proximity to one another will be identified, and ceramics and metallurgical remains from these sites will be obtained and analysed for chemical composition and isotopic signatures. This will be carried out, firstly, in order to identify the raw materials and technological procedures employed for iron smelting and production of local ceramics. Elemental and petrographic analyses will be performed in order to determine whether the materials used were obtained locally or needed to be imported from elsewhere.

Furthermore, the project aims to investigate the technological equipment and procedures that enabled the production of iron and ceramics, defining the thermodynamic processes occurring in the furnaces in order to evaluate the expertise of the local craftsmen and determine whether there is evidence of standardised production. Secondly, a comparative study will be carried out of pyro-technologies of iron smelting and ceramics' firing, in terms of materials used and technological processes involved within the limits of a particular site.

The study will attempt to determine whether parallels can be drawn between the pyro-technological processes used to process two distinct materials.

Finally, the project will investigate whether raw materials used and technologies employed are comparable across sites, indicating common material sources and/or sharing of technological know-how.



Early Tana Tradition ceramic sherds from Dakawa, Tanzania 7th-10th centuries. (Photo: Stephanie Wynne-Jones).

SCIENTIFIC BREAKTHROUGHS

Riddles of the Past - Published in Nature Scientific Reports

In 2014, during excavation of an Early Islamic building, researchers from the Danish-German Jerash Northwest Quarter Project found a small cylinder case. At first glance, the corroded find did not seem remarkable; however, when the cylinder was opened, an ultra-thin, complexly-folded scroll appeared. The scroll was made of silver and gold, and team members' curiosity was intensified when they realised the metal plate carried extensive writing.

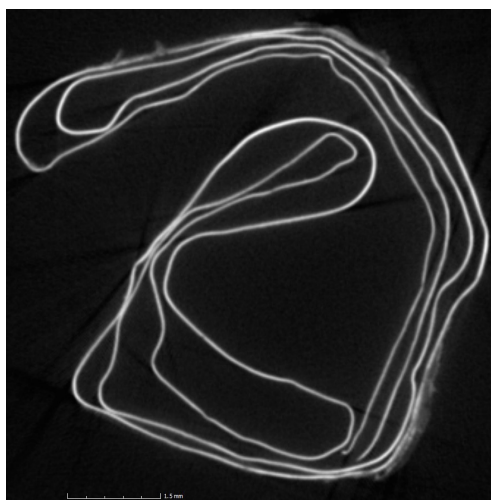
It was clear from the beginning that any attempt to unfold the fragile sheet would surely destroy it. Therefore, the scroll was computer tomographed, and subsequently, an advanced digital unfolding technique allowed each layer of the metal plate to be examined. After meticulous scrutiny by the world's leading philologists - one of whom (based at Aarhus University) had been specially trained for the purpose of digitally unfolding this plate, a 17-line script was identified as a magic spell written in pseudo-Arabic, mixed with Greek letters.

Being pseudo, the exact details of the script are inaccessible (spells of such nature were never intended to be re-read after being folded away and kept for protective purposes).

Nevertheless, the small, corroded silver scroll found in the rubbles of an earthquake-destroyed Early Islamic house in Jerash is an immensely significant find. It proves that traditional Semitic and Greco-Roman practices survived throughout centuries beyond the Christian era and well into the Early Islamic period, and that cultural adaptation has been a feature of human interaction ever since the dawn of civilisation. The all-round analysis of the find also, not least, shows how interdisciplinary research bringing together scholars from archaeology, history, linguistics, natural and computing sciences allow for a much fuller understanding and contextualisation of such complex finds.

This study is the first to ever apply digital imaging methods to successfully tackle complexly-folded material, and findings were published in the prestigious Nature Scientific Reports.

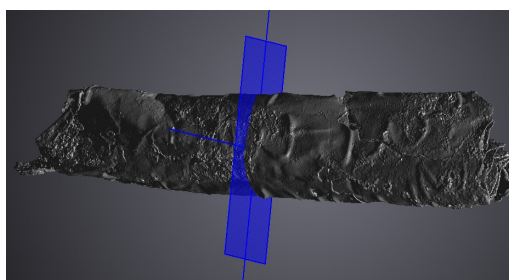
Barfod, G.H., Larsen, J.M., Lichtenberger, A. & Raja, R. (2015). Revealing text in a complexly rolled silver scroll from Jerash with computed tomography and advanced imaging software. Nature Scientific Reports, 5, 17765 (doi: 10.1038/srep17765).



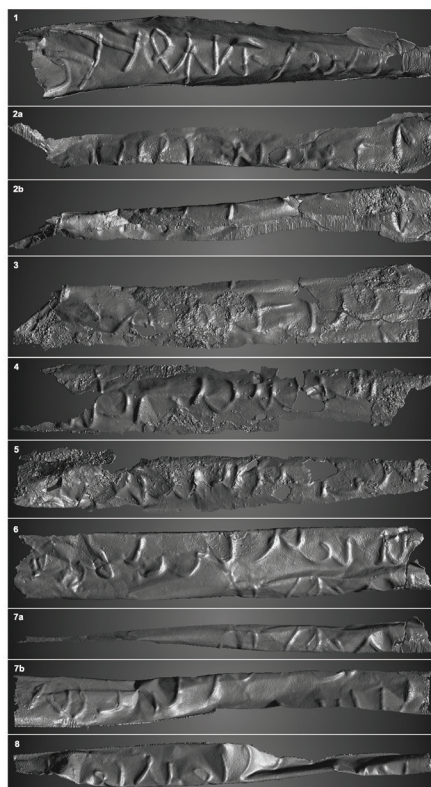
Cross-section of the silver scroll from a CT scan (Photo: The Danish-German Jerash Northwest Quarter Project).



The silver scroll, encased in a lead container, was found in 2014, during excavation of an Early Islamic building (Photo: The Danish-German Jerash Northwest Quarter Project).



Digital imaging allowed researchers to examine the scroll and its contents without destroying it (Photo: The Danish-German Jerash Northwest Quarter Project).



Upon processing the scroll using digital imaging, the researchers were able to study the script, as if the metal sheet had not been folded (Photo: The Danish-German Jerash Northwest Quarter Project).

Radiocarbon Analysis of Mortar from Roman and Byzantine Water-Management Installations in Jordan

A methodological study in cooperation between The Danish-German Jerash Northwest Quarter Project (Achim Lichtenberger and Rubina Raja), UrbNet (Rubina Raja), the Aarhus AMS ^{14}C Dating Centre, Aarhus University (Jan Heinemeier) and Åbo Akademi, Finland (Alf Lindroos).

Jerash (Gerasa) in northwestern Jordan is an important Decapolis city displaying urban development for more than a millennium, beginning in the late Hellenistic period (1st century CE). Despite more than a hundred years of archaeological explorations at the site, there are still major questions about the city's urban development, which are left open due to the nature of the archaeological investigations undertaken at the site. This, in particular, pertains to questions about the city's extension in the Roman period.

During the investigations undertaken by the Danish-German Jerash Northwest Quarter Project since 2011, it has become clear that this area of the city has partly undergone extensive phases of reuse, and therefore, a strict chronology is difficult to obtain through the archaeological strata themselves.

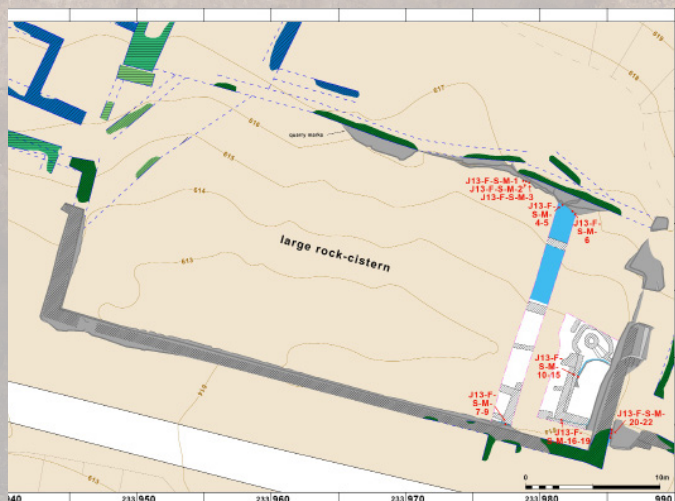
In the 2013 campaign, excavation was undertaken in the largest cistern within the city walls, which is located in the Northwest Quarter. The cistern was lined in part with several layers of mortar, belonging to different phases of use. Furthermore, water-pressure pipes embedded in mortar were found in-situ on the hill. Since methods for dating mortar have become more refined

over the later years, it was decided to have ^{14}C AMS-dating of 25 samples done in order to test chronology and relative phases in the cistern and the construction of the water-pressure pipe system, as well as the possible relation between the cistern and the pipes. These results, together with the archaeological evidence, show that the urban development of Gerasa and its extension in the Roman period need to be reconsidered, and that, among other things, there now seems to be hard evidence for water supply in the Northwest Quarter, dating to the Roman period, which is earlier in this part of the city than usually assumed. This methodological study was published open access in 2015 in *Journal of Archaeological Science: Reports* and has been quoted extensively since publication. It is a landmark publication, which shows the potential of implementing High-Definition archaeological methods in complex archaeological situations.

The mortar analysis was funded by the Carlsberg Foundation. Further support for the project infrastructure was given by the German Research Council (DFG) and H.P. Hjerl Hansens Mindefondet for Dansk Palæstinaforskning.



Pressure water pipe (Image: The Danish-German Jerash Northwest Quarter Project).



Outline of mortar samples taken from a large cistern in Jerash (Image: The Danish-German Jerash Northwest Quarter Project).

Photo: Søren M. Sindbæk

Wine Pitcher Unveils Origins of Viking-Age Trade

Ribe has long been known as the oldest city in Scandinavia, and because of its location on key water routes, it served as an important hub of trade in the Viking Age. In the market place, craftsmen and merchants from near and far forged new networks, but the range of communication facilitated by these urban encounters continues to surprise.

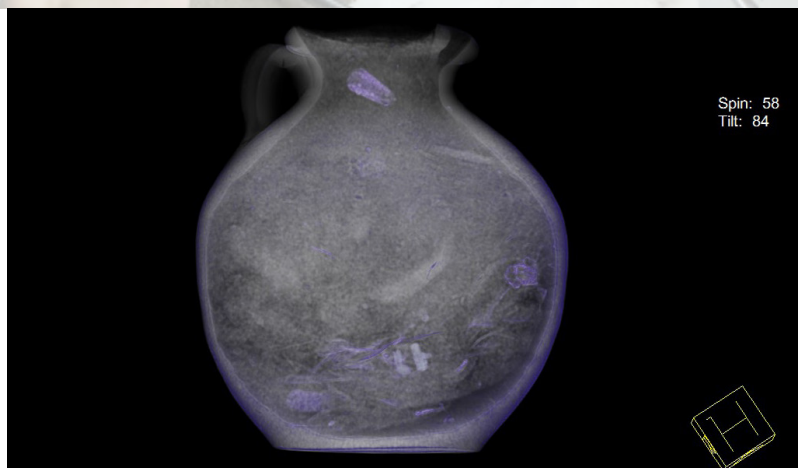
A training excavation of a Ribe cemetery in summer 2015 led to a find that has once again challenged the understanding of early Ribe's networks. Half a metre underground, a small wine pitcher appeared. Astonishingly, the vessel was completely intact.

The wine pitcher was an unprecedented and thus far a unique example of the finest pottery imported from France or Belgium more than 1,000 years ago - none of the local potteries had the technical skills to produce such a pitcher. Although imported wares are found in abundance in Ribe, not a single sherd has ever appeared from this ware or type of vessel, and the exact point of origin remains unknown. The style and fabric points to Northern France in general, and the comparisons suggest that the vessel may relate to the very earliest period of activity in Ribe.

The importance of the find was recognised by the Danish Agency for Culture and Palaces, who listed the pitcher among the top-10 archaeological finds in Denmark in 2015. This find constitutes indisputable evidence that Ribe's connection with northern Europe was not just a result of gradual expansion over many years; rather, its role as a far-reaching European trade centre was a characteristic of the city from the very beginning.

CT scans and subsequent excavations revealed another surprise: the pitcher had been used as an urn to bury the cremated remains of a child, together with a few personal objects: glass beads and a comb.

The unique find is a gift for High-Definition archaeology. Ongoing scientific examinations of the finds and the organic remains will reveal more about this enigmatic find.



A CT-scan of the wine pitcher. The vessel contained bone material, glass beads and a case with a small comb (Photo: Søren M. Sindbæk).



Søren M. Sindbæk admires his rare find: a completely intact vessel found during the excavation (Photo: Sarah Croix).

Biomolecules Trace Urban Networks: Craft Specialists and Reindeer Antler in Viking Towns

Deer antler was an important material in pre-modern craft and industry. In the early mediaeval period, this raw material was used to produce a range of valued items, including hair combs. As a result, it was exploited on an unprecedented scale. Rich assemblages of antler combs and waste from the workshops that made them have been excavated in Viking-age towns and trading places. A new biomolecular technique has made it possible to explore the resource networks behind one of the first specialised urban crafts in early mediaeval northern Europe.

A pilot study completed within UrbNet has used species identification by peptide mass fingerprinting (ZooMS) to identify the raw material for antler comb production in Ribe, Aarhus and Aggersborg, Denmark. The surprising results document that antler from reindeer (*Rangifer tarandus*) was used in Danish urban workshops from the 780s AD at the latest, presenting the earliest unambiguous evidence for exchange-links between urban markets in the southern North Sea region and the Scandinavian Peninsula – the home range of the reindeer.

The results demonstrate that long-range networks were vital to urban activities from the first appearance of towns in this part of the world, preceding the historically documented maritime expansion of the Viking Age. They suggest how urbanism may be defined and researched in terms of network dynamics: What is urban about early urban networks is not confined to one site or region but rather dispersed in resource and production networks that might involve both extended sea journeys and the exploration of marginal terrestrial landscapes. Some of the activities that gave Ribe its distinctively urban character occurred in the bustling marketplace; others took place on a Norwegian mountainside.

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.

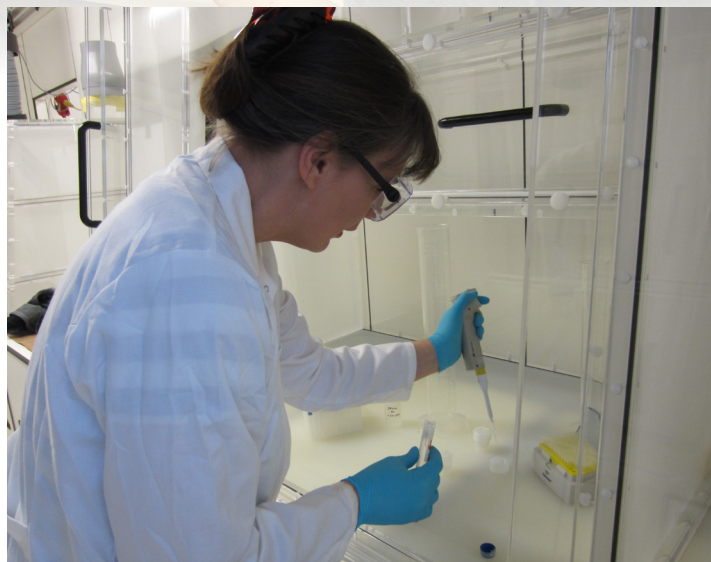


AARHUS GEOCHEMISTRY AND ISOTOPE RESEARCH

Gry H. Barfod (left) and Charles Leshner (middle) get ready to examine a Viking-age oval brooch (Photo: Søren M. Sindbæk).

The establishment of the Aarhus Geochemistry and Isotope Research (AGIR) Platform, funded through the Niels Bohr Professorship to Charles Leshner, is nearing completion, and UrbNet projects involving geochemical provenance studies are starting to take off.

The cutting-edge analytical equipment includes a quadrupole mass spectrometer (ICP-MS) for elemental analysis down to parts per billion, a multi(19)-collector ICP-MS for high-precision isotope ratio measurements of single elements of archaeological interest (e.g. Pb, Sr, Fe, etc.) and a 193 nm Excimer laser ablation system for high-spatial resolution, in-situ sampling of artefacts with very minimal sample destruction. Supporting these instruments is a 120 sq. meter metal-free Class 100 laboratory for sample preparation involving acid digestion and ion exchange chromatography. In 2016, a microXRF system was acquired for diagnostic and elemental mapping, as well as a handheld XRF unit for compositional determination in the field.



Close-up of the clean-lab work (Photo: Charlotte Rasmussen).

THE AARHUS AMS ¹⁴C DATING CENTRE

In November 2014, the Aarhus AMS ¹⁴C Dating Centre (AARAMS), Department of Physics and Astronomy, Aarhus University, received a new 1MV Tandetron accelerator to conduct radiocarbon analysis. Since the start of UrbNet, the test phase of the accelerator has come to a conclusion, and AARAMS is now fully operational. Despite UrbNet's slow startup, a total of 116 samples have been submitted for radiocarbon analysis, and 63 samples have been completed. This corresponds to 389 measurements in total, of which radiocarbon analysis amounts to 134 measurements.

To ensure a fast turnaround of UrbNet samples, a part-time laboratory assistant has been employed from 1 January 2016.

One study on radiocarbon dating of mortars from cistern and the construction of water pressure pipe systems, Jerash (Gerasa), has been published (Lichtenberger et al. 2015).

Material	#sample	¹⁴ C	δ ¹³ C	δ ¹⁸ O
<i>In progress</i>				
Bone	5			
Charcoal	14			
Grain	15	3		
Mortar	9	6	15	30
Nutshell	4			
Organic material	1			
Plant, charred	1			
Wood	3			
Subtotal	52	9	15	30
<i>Completed</i>				
Charcoal	33	33	32	
Mortar	27	88	88	86
Organic material	1	1	1	
Plant, charred	3	3	3	
Subtotal	63	125	124	86
Total	116	134	139	116

Table 1. Overview of samples submitted to AARAMS for radiocarbon analysis (¹⁴C) and stable isotope analysis (δ¹³C and δ¹⁸O) grouped by type of material.

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

CENTRE MEMBERS HONoured WITH PRESTIGIOUS AWARDS



EliteForsk award winners with H.R.H. Crown Princess Mary and former Minister of Higher Education and Science Sofie Carsten Nielsen (Photo: Danish Ministry of Higher Education and Science).



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

In February 2015, Professor and Centre director Rubina Raja received the **EliteForsk award** as a recognition of her groundbreaking research in classical archaeology, focusing on urban societies and their interaction across time and space. The award was presented by H.R.H. Crown Princess Mary and Minister of Higher Education and Science Sofie Carsten Nielsen at a reception at the Ny Carlsberg Glyptotek in Copenhagen.

"The EliteForsk awards are not just a recognition of the country's most talented researchers, it is also an investment in the future. Research will expand our knowledge of the world and help provide some answers to the great challenges we face. From the treatment of life-threatening illnesses to better insight into our cultural legacy to new forms of sustainable energy," says Sofie Carsten Nielsen.

Since 2007, the EliteForsk Awards have been presented on an annual basis to highly acclaimed Danish researchers based on nominations from the Danish Council for Independent Research. According to Sofie Carsten Nielsen, prize winners are considered *"representatives of Danish research and [...] proof that we are among the best, when talent is combined with ambition and dedication."*

In October 2015, Rubina Raja was awarded the title of **Distinguished Lecturer in the Human Sciences** by the prestigious Max Planck Society in Germany. Rubina Raja was selected for the award amongst scholars working across the humanities, legal studies, cognitive and neuroscience, as well as the social and behavioural sciences. The award was given by a committee of the Human Sciences Section based on her outstanding research on urban

development, Palmyra (Palmyra Portrait Project) and her work on ancient religion in the Levant. Rubina Raja received the award in Berlin and gave the opening lecture in the Distinguished Lecture series, entitled *Unravelling urbanism through a "High Definition Archaeology" approach: A 3D historiography of concepts of the ancient city*.

Rubina Raja also received the **Tagea Brandt Travel Scholarship for female researchers** and an elected membership of the **Royal Danish Academy of Sciences and Letters**.

Dr. Stephanie Wynne-Jones was awarded a **Pro Futura Scientia Fellowship** (SCAS) by the Swedish Collegium for Advanced Study, Uppsala University, on the basis of her scholarly excellence. During her time at SCAS, Stephanie Wynne-Jones will be working on an edited volume on The Swahili World, commissioned as part of the Routledge Worlds series. She will also be developing a major new research project exploring local production for trade on the precolonial East African coast. This will be the first attempt to explore local production and priorities in the region's engagement with Indian Ocean trade.

In May 2016, assistant professor Luise Ørsted 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.

EVENTS

Conferences and Workshops

26-28 January 2015	Palmyra and the Mediterranean, Copenhagen, Denmark
30-31 March 2015	Connections and Disconnections in the History and Cultures of Eastern Africa, Nairobi, Kenya
11 May 2015	Byernes Netværk: 28. Byarkæologiske Møde, Ribe, Denmark
23-29 August 2015	The World Congress of the International Association for the History and Religion, Erfurt, Germany
18 November 2015	Importkeramik i Vikingetid og Middelalder, Højbjerg, Denmark
26 November 2015	Fregerslev: A Unique Horseman's Burial From the Viking Period, Højbjerg, Denmark
18-20 January 2016	Biographies of Place, Aarhus, Denmark
6 April 2016	Epochalisation and Religious Innovations in Pre-Augustan and Augustan Rome, Aarhus, Denmark
2-3 May 2016	Byarkæologi - Før, Nu og i Fremtiden (Byarkæologisk Møde), Ribe, Denmark
4 May 2016	Viking Age - Fact and Fiction (35. Tværfaglige Vikingsymposium), Aarhus, Denmark
13 June 2016	Mamluk Pottery: Material Culture and History in the Middle Islamic Period, Aarhus, Denmark

Lectures and Seminars

24 June 2015	Ekstra foredrag om Palmyra Palmyra Portrait Project lecture series Associate professor Vinnie Nørskov, Aarhus University
6 October 2015	Palmyrene funerary portraiture - portraits between conflict and corpus Palmyra Portrait Project lecture series Professor Rubina Raja, Aarhus University
3 November 2015	City-hinterland relationship: The case study of the Southwest Palmyrene in Roman time Palmyra Portrait Project lecture series Dr. Paola Mior, University of Udine
14 December 2015	Kunstmarkedets aktører og deres betydning for indsamlingen og forskningen af palmyrenske portrætter Palmyra Portrait Project lecture series stud.mag. Ditte Høj, Aarhus University
16 December 2015	New narratives of sacred landscapes: Geoarchaeology and the birthplace of Buddhism Professor Ian Simpson, University of Stirling
1 March 2016	Kvinder og børn i palmyrensk gravskulptur Palmyra Portrait Project lecture series Assistant professor Signe Krag, Aarhus University

8 March 2016	Towns, trade and identities: Old questions and new approaches Dr. Steve Ashby, University of York
31 March 2016	The application of ancient protein analysis to archaeology Professor Matthew Collins, University of York
4 April 2016	The Egyptian and Mesopotamian approach Lecture series: Ruins and their significance for urban history 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? Dr. Katharina Rieger, Universität Erfurt
5 April 2016	Regional perspectives on Roman women's portrait busts Palmyra Portrait Project lecture series Helen Ackers, University of Oxford
11 April 2016	The ancient Chinese vision of city ruins Lecture series: Ruins and their significance for urban history Visiting Professor Alain Schnapp, Université Paris 1 Panthéon-Sorbonne
18 April 2016	Natural Science ice breaker Associate professors Søren Munch Kristiansen and Jesper Olsen, Aarhus University
18 April 2016	The Greco-Roman way of considering city remains Lecture series: Ruins and their significance for urban history Visiting Professor Alain Schnapp, Université Paris 1 Panthéon-Sorbonne
19 April 2016	Student representations from Ribe Students Anna Hennebjerg Lunde, Eirik Randrup Christensen and Anders Dam Hove
25 April 2016	The medieval East and West: Clash between pagan, Christian and Islamic memory Lecture series: Ruins and their significance for urban history Visiting Professor Alain Schnapp, Université Paris 1 Panthéon-Sorbonne
26 April 2016	The crossroad of empires Professor Anne Haour, University of East Anglia
2 May 2016	The Renaissance confrontation with cities' pasts Lecture series: Ruins and their significance for urban history Visiting Professor Alain Schnapp, Université Paris 1 Panthéon-Sorbonne
3 May 2016	Børneportrætter fra Palmyra Palmyra Portrait Project lecture series Sara Ringsborg
9 May 2016	The Enlightenment and the foundation of the modern vision of cities' pasts Lecture series: Ruins and their significance for urban history 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 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 Professor Eberhard Sauer, University of Edinburgh

Lectures and Seminars Continued

24 May 2016	Medieval money in Ribe: town versus country PhD student Olav Elias Gundersen, Aarhus University
7 June 2016	Writing a history of Danish medieval towns: Possibilities and Problems Professor Bjørn Poulsen, Aarhus University
14 June 2016	The distribution of cultic places within Nabataean and Roman Petra Dr. Laurent Tholbecq, Université Libre de Bruxelles

Other Events

30 January 2015	Official inauguration of UrbNet, Moesgaard Museum, Højbjerg, Denmark
25 February	Opening of the exhibition "Harald Ingholt og Palmyra", Aarhus, Denmark
13 April 2015	Open audition, UrbNet, Højbjerg, Denmark
18 November 2015	UrbNet Open House, Aarhus, Denmark
21 January 2016	Open audition, UrbNet, Højbjerg, Denmark
1 February 2016	UrbNet opening reception (new centre facilities), UrbNet, Højbjerg, Denmark
11 April 2016	Meeting with Aarhus University Rector, UrbNet, Højbjerg, Denmark
12 April 2016	1st Annual meeting with the Danish National Research Foundation, UrbNet, Højbjerg, Denmark
20 April 2016	Visit by Centre for Textile Research (University of Copenhagen), UrbNet, Højbjerg, Denmark

EXTERNAL RELATIONS

Visitors

6-12 September 2016	Ema Bauzyte (Consortium of Univerisidade de Évora, Portugal; Aristotelios Panepistimio, Greece; Università di Sapienza, Italy)	4-7 April 2016	Georgia Petridou (Universität Erfurt)
8-12 September 2015	Olav Gundersen (University of Tromsø)	4-7 April 2016	Emiliano Urciuoli (Universität Erfurt)
4-6 October 2015	Alix Thoeming (University of Sydney)	4-7 April 2016	Valentino Gasparini (Universität Erfurt)
5-7 October 2015	Georg Kalaitzoglou (Ruhr-Universität Bochum)	4-7 April 2016	Maik Patzelt (Universität Erfurt)
3-4 November 2015	Paola Mior (University of Udine)	4-7 April 2016	Katharina Rieger (Universität Erfurt)
17-19 November 2015	Ailsa Mainman (University of York)	4-8 April 2016	Richard Gordon (Universität Erfurt)
14-17 December 2015	Ian Simpson (Stirling University)	4-8 April 2016	Janico Albrecht (Universität Erfurt)
23-24 February 2016	Dirk Rieger (Hansestadt Lübeck)	11-12 April 2016	Jörg Rüpke (Universität Erfurt)
1-4 March 2016	Georg Kalaitzoglou (Ruhr-Universität Bochum)	25-27 April 2016	Stephanie Wynne-Jones (University of York)
7-9 March 2016	Steve Ashby (University of York)	10 May 2016	Anne Haour (University of East Anglia)
29-30 March 2016	Stephanie Wynne-Jones (University of York)	17 May 2016	Günther Schörner (Universität Wien)
31 March 2016	Matthew Collins (University of York)	14 June 2016	Eberhard Sauer (University of Edinburgh)
4-6 April 2016	Benjamin Sippel (Universität Erfurt)	15-16 June 2016	Laurent Tholbecq (Université Libre de Bruxelles)
4-7 April 2016	Helen Ackers (University of Oxford)		Stephanie Wynne-Jones (University of York)

Collaborators

Achim Lichtenberger , Ruhr-Universität Bochum	Jane Jark Jensen , Museum of Copenhagen
Ailsa Mainman , University of York	Jeffrey Fleisher , Rice University
Anna-Katharina Rieger , University of Erfurt	Johannes Lehmann , College of Agricultural and Life Science, Cornell University
Christina Rosén , Swedish National Heritage Board	Jörg Rüpke , University of Erfurt
Dawit Solomon , College of Agricultural and Life Science, Cornell University	Matthew Collins , University of York
Dries Tys , Vrije Universiteit Brussels	Mattias Öbrink , Bohusläns Museum
Ed Lyne , Museum of Copenhagen	Mikael Manøe Bjerregaard , Odense City Museums
Eivind Heldaas Seland , University of Bergen	Morten Søvsø , Museum of Southwest Jutland
Georg Kalaitzoglou , Ruhr-Universität Bochum	Sauro Gelichi , Ca' Foscari University of Venice
Greg Woolf , School of Advanced Study, University of London	Stuart Whatley , Museum of Copenhagen
Ian Freestone , University College London	Thomas Biginagwa , University of Dar es Salaam
Ian Simpson , Stirling University	Volker Menze , Central European University
Jakob Tue Christensen , Odense City Museums	Wulf Amelung , University of Bonn

PAPERS

Rubina Raja, "You can leave your hat on: The Palmyrene priestly modius". Beyond Duty: Interacting with Religious Professionals and Appropriating Tradition in the Imperial Era. International Conference of the ERC research project "Lived Ancient Religion: Questioning 'cults' and 'polis religion'", Erfurt, Germany 14-16 Jan 2015.

Rubina Raja, "The Palmyrene banquetting tesserae and the greco-roman influence". Palmyra and the Mediterranean, The Royal Danish Academy of Sciences and Letters, Copenhagen, Denmark, 26-27 Jan 2015.

Rubina Raja, "Die Tesserae von Palmyra". Morphomata, Cologne, Germany, 1 Feb 2015.

Rubina Raja, "Neue Forschung in Gerasa". Rotary Club Meeting, Erfurt, Germany, 3 Feb 2015.

Søren M. Sindbæk, "Discovering Borgring: A Viking fortress reveals its secrets". Highlight lecture at Jorvik Viking Festival, York, UK, 19 Feb 2015.

Rubina Raja, "Theoretical and methodological stand of Classical Archaeology". Humanomics seminar, University of Copenhagen, Copenhagen, 27 Feb 2015.

Rubina Raja, "Presentation of Centre for Urban Network Evolutions". Seminar, Centre for Textile Research, University of Copenhagen, Copenhagen, 27 Feb 2015.

Rubina Raja, "High Definition Archaeology: The example of Gerasa in the Decapolis". Geoscience seminar, Stirling, UK, 3 Mar 2015.

Rubina Raja, "Portrait habit in Roman Palmyra". Guest lecture at University of Edinburgh, Dept. of Classics, Edinburgh, UK, 5 Mar 2015.

Rubina Raja, "Heritage, archaeology and conflict". Cultural Heritage course, Stirling, UK, 5 Mar 2015.

Rubina Raja, "Depicting the dead - reflecting the living: Palmyrene funerary portraiture". Roman Art Seminar, London, UK, 9 Mar 2015.

Rubina Raja, "Palmyrene funerary portraiture in the Roman period". Guest lecture at Durham University, Dept. of Classics, Durham, UK, 10 Mar 2015.

Søren M. Sindbæk, "Aggersborg og Borgring". Lecture at the Danish University Extension, Hobro, Denmark, 16 Mar 2015.

Søren M. Sindbæk, "Dragons of the Northern Seas". Lecture at Suzhou Museum, China, 28 Mar 2015.

Rubina Raja, "Changing the urban picture through High Definition Archaeology: Urban development in Jerash (Jordan) from the Roman to the Mamluk Period." Guest lecture, Cornell University, Ithaca, USA, 17 Apr 2015.

Rubina Raja, "Redefining the urban picture: Gerasa in Jordan seen through the lens of High Definition Archaeology". Guest lecture, Joukowsky Institute for Archaeology and the Ancient World, Providence, USA, 21 Apr 2015.

Rubina Raja, "Defining sanctuaries - the Roman period". Workshop: Sanctuaries - A Comparative Approach, Erfurt, Germany, 27-28 Apr 2015.

Søren M. Sindbæk, "Arktisk udmark og byernes opland. Kammagerens netværk". Byernes Netværk: 28. Byarkæologiske Møde, Ribe, Denmark, 11-12 May 2015.

Stephanie Wynne-Jones, "The Swahili and the sea". Conference: Museums, Coastlines and Sea, University of East Anglia, 20-22 May 2015.

Rubina Raja, "Palmyra: Den seneste udvikling". Guest lecture at Aarhus University, Dept. of Culture and Society, Aarhus, 24 Jun 2015.

Rubina Raja, "Imported cult statues in the Roman Near East". Conference: Seeing the Gods, Bonn, Germany, 2-5 Jul 2015.

Rubina Raja, "Cult, topography and perception". Guest lecture at Max Weber Kolleg, Werkstattbericht, Germany, 8 Jul 2015.

Rubina Raja, "Lived Ancient Religion – Banqueting and tesseræ from Palmyra". The World Congress of the International Association for the History of Religion, Erfurt, Germany, 23-29 Aug 2015.

Rubina Raja, "A silver scroll from Jerash". Department of Antiquities, Amman, Jordan. 30 Aug 2015.

Søren M. Sindbæk, "Concluding remarks for the session 'Urban identities in the early-medieval of towns of Europe: Architecture, social space and sense of place'". European Association of Archaeology Conference, Glasgow, UK, 3 Sep 2015.

Rubina Raja, "Palmyra Portræt Projektet - portrætter mellem krig og kunstmarked." Annual meeting of the Carlsberg Foundation, Moesgaard, Denmark. 15 Sep 2015.

Rubina Raja, "Marketing illicitly exported cultural heritage objects. The case of Palmyra". Conference: Fighting the looting of Syria's cultural heritage, Sofia, Bulgaria. 16 Sep 2015.

Rubina Raja, "Portraits between corpus and conflict - the Palmyra Portrait Project". Palmyra Portrait Project lecture series, Aarhus, Denmark. 6 Oct 2015.

Stephanie Wynne-Jones, "Objects and interaction: Exploring Indian Ocean connections on the Swahili coast of East Africa". Seminar, Swedish Collegium for Advanced Study, Uppsala, Sweden, 8 Oct 2015.

Rubina Raja, "Unravelling urbanism through a 'High Definition Archaeology' approach. A 3D historiography of concepts of the ancient city". Max Planck Society Distinguished Lecture, Berlin, Germany. 22 Oct 2015.

Rubina Raja, "Den antikke storby som kulturel og religiøs smeltedigel". Lecture, Løgumkloster, Denmark. 28 Oct 2015.

Rubina Raja, "Er tidlig kristen billeddannelse et storbyfænomen?" Lecture, Løgumkloster, Denmark. 28 Oct 2015.

Rubina Raja, "The impact of humanities in a changing world: The Palmyra Portrait Project". Lecture, Aarhus, Denmark. 30 Oct 2015.

Søren M. Sindbæk, "Borgring, Trelleborgene og Harald Blåtands Ribe". Lecture at Det Antikvaritatiske Selskab, Ribe, Denmark, 3 Nov 2015.

Rubina Raja, "Applying for a Centre of Excellence". The Danish National Research Foundation's information meeting at Aarhus University, Aarhus, Denmark. 4 Nov 2015.

Rubina Raja, "The Palmyra Portrait Project – Digitizing Archives and Digging in Diaries". Archive Archaeology – Archiving and collecting the past, Aarhus University, Aarhus, Denmark, 16 Nov 2015.

Rubina Raja, Turning urbanism upside down: The Danish-German Northwest Quarter Project, Jordan, UrbNet open house, 18 Nov 2015.

Rubina Raja, The History and Current Situation of World Heritage Sites in Syria with Special Attention to Palmyra, Cultural Heritage at Risk: The Role of Museums in War and Conflict, Medelhavsmuseet, Stockholm, Sweden, 26 Nov 2015.

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Rubina Raja, The virtual market for cultural heritage objects – the case of objects from Palmyra, Nordisk Fagkonferanse om Ulovlig Handel med Kulturgjenstander, 2-3 Dec 2015.

Rubina Raja, New archaeological research in Gerasa. The Danish-German Northwest Quarter Project New archaeological research in Gerasa. The Danish-German Northwest Quarter Project, Guest lecture, Institute for Classical Archaeology, University of Vienna, Austria, 4 Dec 2015.

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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.

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Rubina Raja, "Meddelelse". 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.

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Rubina Raja, "Oplæg omkring ekspertpanels arbejde med report om kvalitetssikring af forskning, peer-review og impact". Lecture, The Royal Danish Academy of Sciences and Letters, Copenhagen, Denmark, 2 March 2016.

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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.

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, Højbjerg, Denmark, 12 April 2016.

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

Rubina Raja, "Old Testament". Seminar, University of Copenhagen, Copenhagen, Denmark, 1 April 2016.

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Rubina Raja, "Palmyra, Archaeology, History, the Danish connection and the current situation". All day course at the Danish University Extension, Aarhus, Denmark, 2 April 2016.

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Søren M. Sindbæk, A complex beadwork. Stringing together early medieval exchange. Conference: Entangled Worlds. Network analysis and complexity theory in historical and archaeological research. Vienna, Austria, 14 April 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. Byarkæologi - før, nu og i fremtiden, Ribe, Denmark, 2 May 2016.

Jacob Tue Christensen & Kirstine Haase, Den antikvariatistiske tradition i middelalderbyen Odense. 29. Byarkæologiske Møde: Byarkæologi - før, nu og i fremtiden, Ribe, Denmark, 2 May 2016.

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Alex Peterson, Ayyubid-Mamluk Evidence from the Danish-German Northwest Quarter Project. IHAJ, Amman, Jordan, 22 May 2016.

Heike Möller & Annette Højten Sørensen, Roman and Early Byzantine Ceramic Finds – New Results on Micro- and Macro Regional Patterns in Jerash's Northwest Quarter. IHAJ, Amman, Jordan, 23 May 2016.

Rubina Raja, Palmyrene Funerary Portraiture: Individualization and Group Identity. 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. IHAJ, Amman, Jordan, 24 May 2016.

Olav Elias Gundersen, Medieval money in Ribe: Towns versus country. UrbNet lecture series, Højbjerg, 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, Fra skind til skulptur – DNA og proteiner fra forhistorisk materiale. 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, Højbjerg, Denmark, 7 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.

PUBLIC OUTREACH

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P1 Eftermiddag
24 February 2015
Krig og konflikt truer verdens kulturarv
Rubina Raja

DR1 Nyhederne
26 February 2015
EliteForsk award
Rubina Raja

P1 Eftermiddag
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Islamisk Stat har vundet kontrol over Palmyra
Rubina Raja

P1 Eksistens
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Jordan and Palmyra
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P1 Supertanker
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Radio 24Syv
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Culture
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Radio 24Syv
20 August 2015
Palmyra - the crisis
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Radio 24Syv
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On the situation in Palmyra - the murder of Khaled-al-Assad
Rubina Raja

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Jordan and the situation in Syria
Rubina Raja

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22 September 2015
Ny metode kan afsløre handelsruter
Søren M. Sindbæk

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13 October 2015
Palmyra
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On the situation in Palmyra
Rubina Raja

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Rubina Raja

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Frankrig vil beskytte den syriske kulturarv
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Rubina Raja

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Interview on Zenobia and Palmyra
Rubina Raja

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

P1 Eftermiddag
31 May 2016
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EliteForsk presentation
Rubina Raja

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UrbNet employees resting after hosting an opening reception on the occasion of the new UrbNet floor being handed over 1 February 2016.

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