Foreword

We are proud to present the Groningen Institute of Archaeology (GIA) Annual Report in a new format! From now on the basic facts and figures can be viewed on GIA’s website (http://www.rug.nl/research/groningen-institute-of-archaeology/about-the-institute/annualreport). In contrast, this brochure highlights GIA’s activities as a major international research institute, and details its future aims and ambitions. The following pages provide an overview of the year’s major fieldwork activities, national and international collaborations, and also important events, research awards and valorisation activities. Staff members will also tell you about their fascination for archaeological research in the field and in the lab.

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1. About GIA

The Groningen Institute of Archaeology is based in the Faculty of Arts of the University of Groningen, and is responsible for all archaeological research within the university. It contributes to research agendas within the humanities by integrating research perspectives from both the natural and social sciences, and by developing and incorporating novel methodologies and theories. GIA research highlights the fact that archaeology is the only academic discipline able to investigate the development of human societies from a uniquely long-term perspective. At GIA, we are convinced that insights from the past also have relevance to present-day debates and the resolution of future challenges. GIA strives to add to the regional, national and international recognition of University of Groningen as a leading research university.

GIA’s mission is:
> To conduct high-profile interdisciplinary research that is (inter)nationally visible;
> To disseminate the results of research to both the scientific community and wider society via high-quality publications, conferences and innovative public outreach;
> To provide a vibrant and supportive research environment so that students, PhDs postdoctoral researchers and staff can perform at their full potential.

Who are we?
The Groningen Institute of Archaeology consists of four chair groups; Prehistory and Protohistory of Northwest Europe, Classical and Mediterranean Archaeology, Greek Archaeology and Arctic Studies. These chair groups, in turn, link into the University of Groningen’s educational departments of Archaeology and the Arctic Centre.

The coordinators of the chair groups are full professors and form the GIA Management Team. One of them acts as GIA Director. The Management Team is supported by an Advisory Board composed of a representative selection of GIA personnel. Members of the technical staff support GIA’s research activities and fieldwork projects. GIA also maintains laboratories in Zooarchaeology, Archaeobotany and Conservation and Material Culture Studies (LCM).

Within RUG, GIA participates in the Graduate School for the Humanities of the Faculty of Arts, providing the institutional setting for GIA’s PhD training programme and the two year Research Master in Art History and Archaeology. GIA is also a member of ARCHON, the national Dutch institute for Research Master and PhD training programmes in Archaeology.

Director of GIA
Prof. dr. P.A.J. Attema

Chair groups
Prehistory and Protohistory of Northwest Europe (Prof. dr. D.C.M. Raemaekers)
Classical and Mediterranean Archaeology (Prof. dr. P.A.J. Attema)
Greek Archaeology (Prof. dr. S. Voutsaki)
Arctic Studies (Prof. dr. P.D. Jordan)

Coordinator of GIA PhDs
Fester Possel

Advisory Board
Prof. dr. P.D. Jordan (chair), F.B.J. Heinrich, M.A., MSc., Dr. L. de Jong, Dr. P.M. van Leusen, Dr. M.M.J.E. Loonen, M.A. Los-Weijns, Dr. J.H.M. Peeters
Prehistory and Protohistory of Northwest Europe

Central to the chair group of Prehistory and Protohistory of Northwest Europe is analysis of the long-term development of human-environment relations, which are studied within two contexts. The first is that of prehistoric cultural landscapes, with a focus on economic and social/cosmological use and meaning of the environment. Projects on prehistoric cultural landscapes include: assessment of Mesolithic impacts on natural ecosystems, cultivation strategies within the Swifterbant Culture and the early agriculture of ‘Celtic fields’.

The second context is that of the historic coastal and maritime cultural landscape. This comprises both the terp-mound area of the northern Netherlands, as well as the medieval maritime world. Here research is focused on the occupation history of the terp-mounds and peat districts, and also the ways in which local inhabitants were connected in wider regional and international spheres of interaction (e.g. through a focus on ship-wreck archaeology and exchange networks).

Archaeobotany is central to numerous GIA projects, most notably within the Prehistory and Protohistory of Northwest Europe chair group (e.g. the Swifterbant and Celtic Field projects, the Terp Research Group, research focusing on the maritime and coastal cultural landscape). It also contributes to other GIA chair groups (e.g. fieldwork projects of the Classical and Mediterranean Archaeology chair group) and conducts research in collaboration with a wide range of external partners. It has launched a new book series in cooperation with scholars from Kiel University: Advances in Archaeobotany. Both GIA and (inter)national colleagues are being actively encouraged to publish new research within the series. The 2004-2009 Visitation Report highlighted that the GIA’s archaeobotanical laboratory houses internationally significant reference collections. Increasing use of these collections is now being made by colleagues from Greece, Turkey and Italy. The collection is also under constant development, with the addition of numerous new specimens, and an updated taxonomy. Staff of the lab have conducted ethno-archaeological fieldwork to examine how human actions such as threshing and roasting result in patterns of wear on plant remains themselves; this work is augmenting the corpus of reference materials.

Zooarchaeology has been central to GIA since its first inception at the Biologisch-Archaeologisch Instituut in 1920. The zooarchaeological research group investigates a large variety of past phenomena that involve the human exploitation of animal populations. Present research foci include the introduction of animal husbandry to areas west of Çatalhöyük, the introduction of domestic animals to the prehistoric Netherlands, ancient fisheries in the eastern Mediterranean, and economic systems of early urban centers. Researchers of this unit employ diverse zooarchaeological methods, including comparative osteomorphology, through to ancient DNA, ZooMS, and stable isotopic analyses. Students and staff carry out fieldwork activities and laboratory analyses in Turkey, Bulgaria and Lebanon. The staff also collaborates with a large international network, including the Environmental Archaeology Lab in Boston University, the Department of Archaeology in the American University of Beirut, the Proteomics Lab in Manchester University, the Istanbul Archaeology Museums, and the Palaeogenetics Group at Mainz University. The unit also manages GIA’s extensive skeletal reference collection; these responsibilities include curation work, development and expansion of the collection, and the provision of access and support to researchers, students, and the general public.

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the Near East and Egypt. This wide international coverage facilitates productive cross-cultural comparison of key processes including plant and animal domestication and transhumance and food-production strategies; this serves to strengthen research methods and improves understanding, both in the Netherlands and abroad.

Given that their research operates both nationally and internationally, this group believes that it has a duty to conduct both research of international importance that can be made visible in academic peer-reviewed books and papers, but also that it has an important role to play in communicating the relevance of archaeological research to contemporary society, both in the northern Netherlands, and internationally.

**Classical and Mediterranean Archaeology**

The chair group of Classical and Mediterranean Archaeology (CMA) has a longstanding and firmly established tradition in Italian field archaeology. Its interdisciplinary projects in Central and South Italy combine excavations with landscape archaeological approaches to study the dynamics of Italy’s urban and rural past in a long-term perspective. Covering the period from the Bronze Age to Late Antiquity, its researchers integrate geoarchaeological, palaeoecological and material culture studies to contribute to current understanding of the formation of early complex indigenous societies, interactions with the colonial Greek and Roman world, and Roman Republican and Imperial urbanization. In conducting this research there is a central focus on the improvement of field and analytical methods and a strong interest in socio-economic and demographic aspects. The staff of the chair group conducts major and internationally renowned landscape archaeological projects such as the Pontine Region Project in Central Italy and the Raganello Archaeological Project in South Italy. From 2006 it has also been a leading partner in the international excavations at the ancient Latin site of Crustumerium, near Rome. Publications on the completed large-scale excavations conducted at the protohistoric settlements of Satricum in
Central Italy and Francavilla Marittima in South Italy are underway. The chair group has established strong international networks, has a strong track record in obtaining research funding, and attracts substantial numbers of master students, PhDs and postdoctoral researchers, all of whom play a central role in its activities.

**Greek Archaeology**

The research chair of Greek Archaeology was established in 2011. Its research covers the archaeology of the Hellenistic World in the broader sense, but also has a clear focus on the prehistory of the Aegean and the Hellenistic and Roman periods in the eastern Mediterranean and the Near East. Members of the chair group direct or participate in projects in Ayios Vasilios, Halos and Zakynthos (Greece), Beirut (Lebanon) and Erbil (Iraqi Kurdistan), and maintain an explicitly theoretical and interdisciplinary approach, combining archaeological, bioarchaeological, but also historical, iconographic and epigraphic data. Mortuary studies form a central theme in the chair group, as well as household and landscape archaeology, the study of cult and religion, and analysis of architectural monuments and imagery. Questions of social change (the emergence of complex urban societies, but also periods of crisis and decline) and the redefinition of identities in increasingly connected worlds also occupy a central position in research activities. Greek Archaeology researchers engage in public outreach and study the history and politics of archaeology, especially in countries impacted by financial crisis, political instability and conflict. They also collaborate more widely across the University of Groningen, with staff from the Departments of Ancient History and Religious Studies, and with the Centre for Isotope Research. Internationalization is also central to the chair group, which has developed close links with the Dutch Institutes in Athens and Istanbul, the Wiener Laboratory in Athens, the Athens Archaeological Society, the Greek Archaeological Service and the Archaeological Department of the University of Isparta. Greek Archaeology at GIA is quickly establishing a reputation as a centre of international excellence for methodologically innovative, theoretically sophisticated and socially engaged research.
Arctic Studies
The Arctic Centre forms a long-standing component of GIA and was established in 1970. It researches the long-term role played by humans in Arctic and Antarctic ecosystems. Its approach is interdisciplinary, integrating archaeological, anthropological, historical, biological and geographic perspectives. In addition to studying the prehistoric human colonisations and adaptations to Arctic landscapes, it also investigates the later historical rise of the Arctic as a commercial resource frontier, and in more recent times, focuses on the increasing human impacts on polar environments, and the growing geopolitical significance of these areas for transport, tourism and extractive industries. In conducting this research, the Arctic Centre participates in large international collaborative networks. Its staff also manage the Netherlands Arctic Station in Spitsbergen, and actively represent the Netherlands and Dutch Polar research in the major Arctic science organizations, including the scientific working groups of the Arctic Council, which address biodiversity, pollution and sustainable development across the circumpolar Arctic. Staff are active within the International Arctic Science Committee (IASC) (e.g. representing the Netherlands at IASC Council Meetings, and participating in the Social and Human Working Group and the Polar Archaeology Network). The Arctic Centre also employs the coordinator of the Willem Barentsz Polar Institute (WBPI), a national network that coordinates Polar research in the Netherlands. Additionally, the Arctic Centre serves as hub for education, public outreach and expert advice on Arctic scientific matters.

PhD programme
Chair groups of the Groningen Institute of Archaeology regularly have new openings for PhDs. These result from annual allocations from the Faculty, as well as national competitions and externally funded projects and international collaborations. Apart from research, PhD students at the Groningen Institute of Archaeology follow training programmes up to 30 ECTS. These programmes are typically a combination of modules offered by the Faculty’s Graduate School for the Humanities, National Research Schools, and training modules tailored to the individual PhD student’s needs. GIA offers excellent supervision, research facilities, technical support and maintains a dynamic

yet supportive academic culture. It also facilitates and supervises self-funded PhD researchers.

GIA Staff

Research Integrity
The quality of research conducted at the Groningen Institute of Archaeology is assessed in light of the highest international standards. GIA complies with the professional rules drawn up by the Association of Universities in the Netherlands (VSNU: Vereniging van Universiteiten), which can be found in the Dutch Code of Conduct for Scientific Practice. The primary values and principles enshrined in this code of conduct include a duty of care to colleagues and students, and also reliability, verifiability and independence in research. As part of appointment procedures at GIA new staff and researchers are required to declare that they are familiar with the Dutch Code of Conduct for Academic Practice and will follow it during their professional activities.

Our aims and ambitions
GIA's primary aim is to carry out interdisciplinary problem-oriented research projects in which students, PhDs, postdoctoral researchers and staff cooperate and which evolve in a spirit of collaboration with other partners, both within and outside academia. The main domains of study are within landscape, settlement, ecological and social archaeology. Currently GIA accommodates 29 fte researchers who maintain a high output of peer-reviewed papers and books; it also organises major international conferences and is active in the valorisation of its research results. GIA research spans much of the globe, and extends over considerable time depths. Projects are typically based on primary data collected by fieldwork or analysis of collections, but also include elaboration and critical synthesis of existing datasets. As only a small part of GIA's activities can be funded by the institute, GIA staff is very active - and successful - in attracting external funding. In 2014 the GIA obtained a total of €2,111,000,- of external research funding which was used to run existing projects and also to launch new initiatives.

Funding

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<tr>
<th>Name</th>
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<td>Spitsbergen</td>
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<td>From sweet to salt</td>
<td>NWO Top talent</td>
<td>€211,000,--</td>
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<td>The Agricultural Economy of Islamic Jordan</td>
<td>NWO Top talent</td>
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<td>The Avellino Event</td>
<td>NWO Vrije Competitie</td>
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<td>Norwegian Polar Institute</td>
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2. Research within GIA

Publications edited and issued by GIA

GIA’s Annual Research Day in December 2014 saw the presentation of Volume 55/56 of the Institute’s bi-annual journal Palaeohistoria, Acta et Communicationes Institutii Archeaeologici Universitatis Groninganae, which consisted of in-depth scientific reports on GIA research in the Netherlands and abroad. Palaeohistoria was founded in 1951 and GIA is currently in the process of making all back issues of the journal available online, in collaboration with Editing House Barkhuis (see: www.palaeohistoria.nl). At the same event, the annual issue of GIA’s popular outreach journal Paleo-aktueel (vol. 25) was presented. This reports on current research by GIA staff, students and affiliates. Also noteworthy in 2014 was the fact that issues of the Tijdschrift voor Mediterrane Archeologie (vol. 51 & 52) appeared; both were edited by GIA, and consisted of papers from early career researchers, with updates on new research projects across the Mediterranean (see: http://tijdschrift.mediterrane-archeologie.nl). TMA enjoys a substantial academic readership in the Netherlands and Belgium.

Prehistory and Protohistory of Northwest Europe

Research results within the field of prehistoric cultural landscapes comprise a special issue of the Netherlands Journal of Geosciences on submerged prehistoric landscapes and archaeology in the North Sea (co-edited by Peeters) and several peer-reviewed articles on the Swifterbant culture (Raemaekers). Arnoldussen carried out fieldwork on the Celtic Fields near Westeinde (province of Drenthe) and Someren (province of Noord-Brabant) and published an extensive article on Iron Age hamlet Hijken (province of Drenthe).

Research in the terp-mound district included two excavations (Sneek, Wommels) and the reconstruction of a sod-house (Firdgum), all in the

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<th>GIA research output 2014</th>
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<tr>
<td>Refereed article</td>
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<td>Non-refereed article</td>
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province of Friesland. Nicolay published the results of his postdoctoral research on Early Medieval kingdoms (see highlighted publication). The start of a new interdisciplinary project on local history of terp-mounds will lead to more diversified reconstructions of the occupation history. Research on maritime archaeology focused on the excavation of a seventeenth century ship-wreck in the province of Flevoland.

Çakirlar contributed to a major data integration project of archaeozoological data from seventeen sites in Turkey (c. 18,000-4,000 cal. BC), which aims to document the initial westward dispersal of domestic livestock. Cappers continued his work for the Digital Plant Atlas. New volumes on Ayurvedic plants are in preparation.

In 2014 Mans Schepers defended his PhD entitled Reconstructing Vegetation Diversity in Coastal Landscapes. He received a cum laude, a rare distinction in Dutch academia. Two PhD students started their projects: Yftinus van Popta (From sweet to salt: dynamics of the maritime cultural landscape of the Northeastern Zuiderzee between 1100 and 1400 AD) and Wouter Waldus (De Zuiderzee als Verkeersplein, de natuurlijke en culturele context van de turfvaart over zee (1600-1900)).

Key publications


Highlighted


The research presented in the book is the outcome of an NWO VENI-research project. It examines how precious gold and silver objects were being circulated within and between early medieval societies of the southern North Sea during the 5th to 7th centuries AD. The book reconstructs elite exchange networks and also traces how the artefacts were eventually transformed into symbols that expressed regional or supra-regional identities.
Classical and Mediterranean Archaeology

In 2014, the chair group of Classical and Mediterranean Archaeology carried out successful fieldwork campaigns in their main study regions in Italy. During the summer, Peter Attema, Barbara Belelli and Bert Nijboer conducted the 9th excavation season at Crustumerium along with a large team of students, support staff and field assistants, in close collaboration with the Archaeological Superintendency of Rome. Several Iron Age and Archaic tombs were discovered, including an exceptionally rich and interesting chamber house containing a female. In addition, an excavation of a large artificial mound was started; this is possibly an Iron Age funerary complex, which was later reused as a defensive bulwark in the city defence in Archaic times.

In the Pontine plain, south of Rome, Gijs Tol, Tymon de Haas and Barbara Borgers carried out new surveys and detailed pottery studies as part of their NWO funded project on the role of minor centres in regional economies. In Calabria, located in the deep south of Italy, Martijn van Leusen, Kayt Armstrong and Wieke de Neef completed the fieldwork component of their NWO project which examines rural life in protohistoric Italy; they also worked on a related publication. Elisabeth van ‘t Lindenhout, Peter Attema and Sarah Willemsen continued work on the final publication of the GIA excavations at Satricum, which will eventually be published as Satricum vol. III.

In addition to his research on the Roman agricultural economy, Frits Heinrich conducted archaeobotanical fieldwork at the Bronze Age site of Kerma, Northern Sudan, centre of the Nubian Kerma culture. Annette Hansen was awarded an NWO PhD Sustainable Humanities Grant, and started her research on the agricultural economy of Islamic Jordan, from the Arab Conquest to the Ottoman period. Rik Feiken and Sarah Willemsen received their PhDs in landscape and funerary archaeology respectively. Their publications are highlighted below. The year ended extremely well for the chair group - Martijn van Leusen and Peter Attema were informed that they had been awarded a major NWO grant which will enable them to study the effects of the Bronze Age eruption of Vesuvius on the surrounding populations of central Italy.
Key publications


Feiken, H. 2014, Dealing with biases: three geo-archaeological approaches to the hidden landscapes of Italy, Barkhuis & Groningen University Library.


Willemsen, S. 2014, Into the light: A study of the changing burial customs at Crustumerium in the 7th and 6th centuries BC, Barkhuis & Groningen University Library.

Highlighted


This paper provides a comprehensive introduction to the archaeology of the protohistorical settlement of Crustumerium, located near Rome. GIA has been excavating this site since 2006, building on work by Italian and international scholars that extends back to the 1970’s. This paper uses a GIS environment to integrate different types of data generated by past and present research into the site’s urban phases. The application of large-scale geophysical surveys are also included in the paper, and mark an important methodological advance because they can assess both the quantity and the quality of the remaining archaeological sub-surfaces.
Greek Archaeology

In 2014 the chair group undertook a wide range of activities. These included participation in the high-profile Ayios Vasilios Project, with continued excavation of the Northern Cemetery, the initiation of plans for an intensive survey of the area, and the setting up of a public outreach programme. In addition, the chair group took part in the Halos Archaeological Project, a collaboration between the Universities of Groningen and Amsterdam, and the Thessaly Directorate of Antiquities. This involved excavation of test trenches at the Magoula Plataniotiki, possibly the site of Classical Halos, and the study for publication of the ceramic material from Magoula Pavlina.

GA staff continue to collaborate with the University of Isparta (Turkey) in order to make important local collections of funerary stelai and other materials from the Roman period accessible to the scholarly community and the public. Furthermore, they collaborate with Harvard University and the University of Naples Federico II in order to study the Hellenistic and Roman/Parthian periods of North Mesopotamia. The chair group also established local (CRASIS, Levend Erfgoed, Cemeteries Research Project) and international research networks (Burial and Commemoration in the Roman Province, Social

Key publications

Wiersma, C. 2014, Building the Bronze Age: Architectural and social change on the Greek mainland during Early Helladic III, Middle Helladic and Late Helladic I. Archaeopress/Archaeolingua, Oxford.


Change in the Aegean World). It organizes research meetings and conferences (e.g. session on Hellenistic and Roman Pisidia at the European Association of Archaeologists). The group also raised considerable research funding, including several grants from the Institute of Aegean Prehistory, the Brennan Foundation, the Foundation Philologisch Studiefonds, the Netherlands Institute at Athens and the Thessalika Erga Foundation. Olivia Jones (PhD student) was awarded an Associate Fellowship at the Wiener Laboratory.

**Arctic Studies**

The flagship event of 2014 was the Arctic Centre’s expedition to Jan Mayen island, in collaboration with the Royal Netherlands Navy. The Arctic Centre provided archaeological and ecological teams to research the island’s natural ecosystems and document the cultural heritage of 17th Dutch whaling activities.

The Arctic Centre also coordinated a successful application to the NWO’s Kern Programme. This led to the Arctic Centre hosting two new sub-projects: Frigga Kruse (postdoctoral researcher) is researching the ecological impacts of 400 years of resource extraction on Svalbard, and Margje de Jong (PhD) examines the consequences of increasing goose populations. Both projects investigate long-term human impacts on polar ecosystems.

**Highlighted**


This book investigates processes of social change from the end of the Early Bronze Age to the beginning of the Mycenaean period by focusing on domestic architecture from the southern and central Greek mainland. This extended timescale provides scope for examining how a relatively simple society was able to recover from crisis and develop into a highly competitive and socially stratified society. A large body of data is analysed, including settlement lay-out, house architecture and domestic assemblages, in order to reconstruct both change through time and differentiation between sites and regions. Patterns of continuity and change in architectural features are highlighted in an attempt to reconstruct social and economic conditions; additional attention is directed towards understanding symbolism of architectural features.
Sarah Dresscher also started her PhD in 2014, and investigates early commercial uses of ecosystems in the High Arctic. Pomor groups from Russia were drawn to the Spitsbergen archipelago between the 18th to 19th centuries in the quest to obtain valuable walrus ivory and Polar fox furs. She is integrating archaeological, historical and ecological data to reconstruct

Key publications


the commercial activities and subsistence strategies of Pomor hunters, whose extended presence led to the formation of early cultural landscapes in this part of the Arctic. The Arctic Centre also launched a new research stream examining long-term human responses to earlier climatic cycles in the Arctic.

Much effort in Polar science has been directed at understanding the past evolution of Arctic ecosystems; much less has been done to explore the role of humans within these changing environments. This initiative integrates data from Arctic archaeology with the environmental sciences, and was awarded start-up funding by the International Arctic Science Committee.

Highlighted


This paper highlights the fundamentally interdisciplinary approach to research that is the hallmark of all the Arctic Centre's activities. It tackles a central question in circumpolar research: how were prehistoric peoples able to survive in Arctic ecosystems, and what adaptive strategies did they develop? This preliminary case-study integrates scientific methods with archaeological questions. It employs lipid residue analysis of ancient cooking vessels to establish their function, and the role they played in past survival strategies. The paper reports on pottery recovered from the site of Nunalleq in Alaska, and the results indicate that although the population had a relatively wide subsistence base, including exploitation of both terrestrial and aquatic resources, they were using the pottery for the specialist processing of aquatic fats. These findings are important on two levels: first, they indicate that the methods work very well on archaeological materials recovered from the Arctic; second, they open out potentials for reconstructing prehistoric dietary practices across the Arctic.
3. GIA in society

Prehistory and Protohistory of Northwest Europe

Archaeological research in the northern Netherlands started in Groningen with the establishment of the Biologisch-Archaeologisch Instituut in 1920. Ever since, the university has been an leading player in archaeological research and heritage management in the region. The chair group aims to maintain this tradition of regionally-embedded research, but also believes that these results and activities can be made to have even greater societal relevance.

The chair group is an important partner in the development of solutions for heritage management challenges. In 2014 several projects were undertaken in which staff members played a key role. To give two examples, Arnoldussen and Van Popta were responsible for the archaeological side of a project that aimed to produce a new predictive archaeological map for the Dutch embanked floodplains of the river Rhine and its tributaries. Second, Peeters was first author of a publication on an Early Mesolithic site excavated in the Rotterdam harbour extension.

Because a safe future for archaeological remains in situ cannot be taken for granted, we aim to create a stronger support base for the sustainable preservation of archaeological heritage by means of various activities. We work towards this goal by presenting our research to wider society via GIA-hosted publications like Paleo-aktueel, but also by public lectures.

One such lecture was of a special nature: Raemaekers gave three presentations on hunebedden for primary school children, as part of the University of Groningen Children's University. Next to outreach activities, public participation is a fruitful

Key publications / activities


Raemaekers, D.C.M., 24-11-2014. Lecture ‘De Nederlandse hunebedden’ given to three groups of 250 children aged 10-11 years, as part of the UoG programme ‘Kinderuniversiteit’.
Highlighted


In 2014 GIA participated in a collaborative research project with the physical-geography department of Universiteit Utrecht and Deltares, in order to create a new type of predictive archaeological map for the Dutch embanked floodplains. This was funded by Rijkswaterstaat and the National Heritage Agency (RCE), and used a novel 4D approach in which palaeo-landscapes are modelled for selected periods in (pre)history. This enables relevant archaeological data to be plotted in their past geomorphogenetic setting, and the new methodology also produces maps that record both terrestrial and aquatic heritage, which can be used to improve heritage managements decision-making processes, for example, risk-reduction strategies during infrastructural work. In addition, a second project was undertaken in 2014-2015 for the National Heritage Agency that supplements the new National Archaeological Map. Within this project, GIA inventoried and mapped thousands of culture-historical elements using historical and topographic maps of the embanked floodplains of the river Rhine and its tributaries (Van Popta & Arnoldussen 2015). This new data-set will facilitate much better characterization of heritage potential, particularly for more recent periods (e.g. 1830-1960 AD).

strategy for drawing new people into the discipline. In all our projects local volunteers participate, while the rebuilding of an Early Medieval sod-house in Firdgum would not have been possible at all without all their efforts!
Classical and Mediterranean Archaeology

Much of the fieldwork carried out by the Classical and Mediterranean Archaeology chair group has an intrinsic valorisation component. For example, the archaeological interventions at Crustumerium safeguard the cultural heritage from looting by clandestine diggers. The chair group’s landscape archaeological projects also produce inventories of archaeology at the regional scale that, in principle, could be used by archaeological heritage agencies in their protection strategies. During its field campaigns in the Pontine plain in Central Italy and in Calabria members of the chair group spent substantial time and energy informing the local community and wider public about their field activities through public lectures, leaflets and didactic activities at local schools. Chair group members also contributed as editors and contributors to a special issue of the ‘Forma Urbis’ dedicated to Dutch research in Italy (see below). A major feat in 2014 was the launch of a new initiative by a consortium consisting of GIA, the Superintendency of Rome and museums at Copenhagen and Amsterdam to prepare a major international travelling exhibition on the archaeological investigations at Crustumerium. Through 2016 this will be hosted in Copenhagen (Glyptotek), Amsterdam (Allard Pierson Museum), and finally, Rome.

Key publications / activities

Tymon de Haas and Gijs Tol edited (together with Jeremia Pelgrom of the Royal Dutch Institute at Rome) the FORMA URBIS. Itinerari nascosti di Roma antica vol. XIX, no. 9, pp. 4-6, highlighting Dutch field projects in Italy


Tymon de Haas and Gijs Tol gave public lectures and didactical lessons for local inhabitants of Borgo Faiti and Pontinia on the chair group’s research of the archaeological remains at Forum Appii and Ad Medias, two famous archaeological locations along the Via Appia.


Highlighted


In 2013, chair group members Tymon de Haas and Gijs Tol were asked by the Archaeological Superintendency to edit a special issue of the cultural heritage magazine FORMA URBIS to be dedicated to Dutch archaeological field projects in Italy. The job was done in close cooperation with Jeremia Pelgrom of the Royal Dutch Institute at Rome. The resulting glossy showcases a range of archaeological field projects carried out by Dutch universities in Italy among which all current field projects of the GIA. In this way GIA’s fieldwork in Italy has become available to a broad Italian audience as the Forma Urbis is sold throughout Italy.
Greek Archaeology
The public outreach program of the Ayios Vasilios Project continues with its main aim of informing and involving local inhabitants. It also explores their attitudes to archaeology and archaeologists, and aims to change public perceptions of the past in order to promote the sustainable touristic development of the area. Activities are organized in collaboration with local cultural and ecological associations, and with the local municipal authorities. An educational program related to the Ayios Vasilios Project’s findings was also organized. In addition, Filippos Koutsafis, a film-maker who has received various awards for his documentaries on ancient sites and their perception by the local inhabitants, has started working on a documentary on the Ayios Vasilios excavations.

The results of the investigation of mortuary practices of Roman Lebanon have been presented in a general interest publication for The Lebanese British Friends of the National Museum by Lidewijde de Jong. De Jong is also a member of the Syrian Heritage Initiative, a joint program of the US State Department and American Schools of Oriental Research (ASOR) which plan short- and long-term protection and preservation projects in Syria.

Key publications / activities
Ayios Vasilios Northern Cemetery excavation and public outreach program (Sofia Voutsaki) and initiation of Ayios Vasilios survey by Corien Wiersma and Sofia Voutsaki.

Activities of Burial and Commemoration in the Roman Province Network by Lidewijde de Jong, Tamara Dijkstra and Bilge Hürmüzlü.

Co-organisation of CRASIS Annual Meeting by Lidewijde de Jong and Tamara Dijkstra.

Co-organisation (Sofia Voutsaki) and participation in Levend Erfgoed/Cemeteries Research Network by Lidewijde de Jong, Tamara Dijkstra, Eleni Panagiotopoulou, Olivia Jones and Vana Kalenderian.

Excavation, study and publication of Halos and Magula Pavlina, Thessaly. University Library.

Highlighted
The Burial and Commemoration in the Roman Province Network is a collaboration between the University of Groningen and Koç University (Istanbul). It aims to bring together scholars studying funerary commemoration in the provinces of the Roman Empire and to stimulate and facilitate cross-regional and cross-disciplinary discussions. Scholars concentrating on various categories of evidence (literary, epigraphic, archaeological, art historical, osteological) from the different eastern and western imperial provinces are involved. The Network maintains a mailing list for relevant updates and an Academia page dedicated to sharing information, publications, and news relevant to the research theme. Every month, three new publications are highlighted on the Academia page.
The Arctic Centre has a long-term contract with the Dutch government to represent the Netherlands in the primary Arctic organisations; this requires specialist scientific expertise. These organisations include the working groups of the Arctic Council, the International Arctic Science Committee (IASC) and the European Union Arctic Information Centre (EUAIC). The Arctic Centre also plays a key role in coordinating the efforts of the Polar research community within the Netherlands by employing the coordinator of the Willem Barentsz Polar Institute, and by playing an active role within the Association of Polar Early Career Scientists (APECS) network. Staff of the Arctic Centre are frequently consulted by governmental agencies; they give numerous public presentations and also run a public lecture series and engage widely with the media in relation to Polar affairs. One recent Arctic Centre project also saw widespread public engagement; this was the crowd-funding action to support research into Arctic migratory birds, and was highlighted in the 2015 Wetenschapvisie of the Ministry of Education, Culture and Science.

Key publications / activities

Arctic Council Working groups – (various activities in 2014, see appendix)

Strategic Assessment of Development of the Arctic (SADA): A. Stepien et al. (2014). Strategic assessment of development of the Arctic, Arctic Centre, University of Lapland. Two Arctic Centre staff members (Kim van Dam; Annette Scheepstra) were lead co-authors of two chapters.

Association of Polar early Career Scientists (APECS) Symposium, 4 November 2015

Whaling Symposium, 31 October 2014 (run jointly by the Arctic Centre, the Netherlands Maritime Museum, Willem Barentsz Polar Institute). Please see http://www.rug.nl/research/artaarts-centrum/arcticcentre/events/symposium2014/

IMAKA public lecture series. Please see: http://www.rug.nl/research/artaarts-centrum/IMAKA/programma/archief

Highlighted

Strategic Assessment of Development of the Arctic (SADA): A. Stepien et al. (2014).

The SADA report (see above) was commissioned by the EU and had two overarching aims: first, to provide in-depth, state-of-the-art updates on the seven most important socio-economic developments currently taking place across the circumpolar Arctic; second, to assess the strategic relevance of these developments for both EU’s Arctic policy-making activities, and also for EU society at large. Therefore, embedded within the research methodology was integration of science-based analysis with proactive engagement with a wide range of Arctic stake-holders in order to incorporate their views and perspectives into future Arctic policy making initiatives by the European Commission. The SADA report makes clear policy-related recommendations to the European Commission on all these seven topics. Arctic Centre staff made major contributions to the chapters on Arctic mining activities and Arctic social change.
Narratives

Passionate about the Arctic

How can inter-disciplinary research in the Arctic help us understand human exploitation of polar regions and peoples responses to climate change in long-term historic perspective? These questions are of interest to the director of the Arctic Centre Prof. dr. Peter Jordan and his colleagues. In 2014 the Arctic Centre took part in a unique expedition to Jan Mayen, a remote island in the Arctic, the hosting of a conference on Arctic whaling plus participation in several new international partnerships, including a €2.2 million Horizon 2020 EU-project: EU-PolarNet, Connecting Science with Society.

The advantages of interdisciplinary research

Established in 1970, the Arctic Centre is an interdisciplinary research, education and information centre focusing on the polar regions. Archaeologists, anthropologists, biologists, environmental scientists and geographers engage in interdisciplinary research with a strong international dimension. What are the advantages of working in this manner? Peter Jordan explains: “We are all passionate about understanding the polar regions, and that is the common bond we all share. My colleague Maarten Loonen is an ecologist and undertakes long-term studies of migratory birds; this gives us deep insights into polar ecosystems and the evolution of the breeding and survival strategies among different polar fauna. On the other hand, those of us interested in polar archaeology and northern indigenous peoples work in the same regions but seek to understand how Arctic cultures have developed technologies and survival strategies to adapt to these dynamic Arctic ecosystems over the long-term, through hunting, fishing and gathering wild resources from the local ecosystems.”

Close integration of socio-cultural and environmental themes is also a central goal in the new project EU-PolarNet, in which the Arctic Centre represents the Netherlands. The aim is to work with academic and societal partners from nineteen European countries to develop a coordinated research programme for the next decade. By engaging with stakeholders from out outset - including the Arctic’s many indigenous peoples - the project will ensure that both human and environmental factors are addressed fully.
Social relevance and scientific quality
What is the social relevance of the work conducted by the Arctic Centre? Jordan: “The Arctic is an important area in many ways. Effects of modern climate change and industrial pollution are all readily visible in polar regions, with intense effects on local ecosystems, and on the indigenous people who rely on these local environments for their livelihoods. We need to understand these inter-connected processes better, and our archaeological research adds important long-term insights into the roles and response strategies of communities living across the Arctic.

Arctic Centre staff also represent the Netherlands in the expert working groups of the Arctic Council. Jordan: “It is crucial that we provide top-quality scientific information for these policy-related debates. In this sense, ensuring good knowledge utilization is firstly about doing good research, which then produces valuable knowledge and objective insights that can be used and shared more widely. Thinking through this process of how results of new research will be used is both creative and challenging; in now forms a central aspect of all new grant applications. Without a good knowledge utilization plan we would never get new research funded, so the two are closely linked.”

Public outreach is also in the mission statement of the Arctic Centre. What were recent activities? “In 2014 we published several books for a broad audience, e.g. on the history of Dutch whaling in the Arctic. This also led to a public lecture, a conference (organized with three societal partners and attended by both researchers and members of the general public), all of which attracted sustained media attention. A group of the Arctic Centre’s former students have been running a public lecture series on diverse polar themes for several years now. A couple of years back we also organized a polar film festival; we’ve also experimented with crowd-funding initiatives to finance and promote our research to wider society. In summer 2015 members of the public are also being offered the chance to join scientists on a scientific expedition to Spitsbergen, where they will observe and even engage with polar research activities first-hand.”

Internationalization ambitions
“We’ve always had very strong international networks; these support and facilitate our research and feed back into our teaching and outreach activities. At the moment we are strengthening our international networks with Arctic archaeologists, and this involves setting up new links and joint projects with key partners at the University of Tromsø (Norway), the Smithsonian Institution’s...
Arctic Studies Centre at the National Museum of Natural History in Washington D.C. (USA), and with the Centre for Ainu and Indigenous Studies at the University of Hokkaido (Japan). We also collaborate with specialist scientific facilities such as the BioArch Lab at the University of York (UK). These efforts lead, in turn, to production of new knowledge and to wider engagements with non-academic partners, including schools, local museums and communities, and also indigenous peoples. This internationalization and wider outreach is central to the way we work. ” Jordan concludes.

The object and its story
In the spotlights: the Laboratory for Conservation & Material Studies (LCM; www.lcm.rug.nl)
GIA houses a unique laboratory, in which materials and artefacts derived from excavations are restored, conserved and investigated. The work of the LCM is coordinated by Dr. Albert Nijboer and forms an important component of the scientific research performed by GIA. What does the lab do and why is it so important? Gert van Oortmerssen, restorer at the LCM, tells us about his work.

What kind of material arrives at the lab?
Most objects are either made of metal, clay (pottery), wood, leather, bone or stone. I am currently working on material deriving from excavations at de Onlanden, a project just southwest of the city of Groningen. Because the Province of Drenthe has created a water storage area (waterbergingsgebied) in this nature reserve, the water balance there will change, possibly damaging the archaeological traces of medieval habitation in the soil. Prior to the alterations to the landscape excavations have been performed in order to salvage the archaeological remains, some of which was then brought to this lab.

How do you preserve such archaeological objects?
The treatment of an artefact recovered from an excavation depends on the state of the object (and its recovery context) and also on the kinds of research questions that we would like to answer. A restorer tries to bring an object into a state which conserves its (original) shape and makes manageable for a
researcher. You cannot simply dry out wood that has been waterlogged for hundreds of years; the wood will deform and break. You have to treat it, in order to preserve it. For example, we treated the wheel of a cart that had been found in de Onlanden with acetone and rosin. The wood is very strong now and can be investigated, stored and exhibited under normal conditions.

Where do the objects at the LCM generally come from?
The lion’s share of the material derives from excavations conducted by GIA staff. However, GIA cooperates closely with commercial archaeology firms who occasionally require our assistance. In turn, the LCM itself sometimes turns to third parties, for example, to date pottery.

Work at the LCM must be very costly. What about financing?
Restoration and conservation activities may seem very costly, but they are essential for facilitating the study of archaeological objects. In order to properly restore a metal object, for example, one often needs to remove a thick crust of corrosion. This job can be performed more efficiently by using an X-ray machine which gives you a clear idea of the object hidden underneath. We are lucky to have received an X-ray machine from the UMCG (Academic Teaching Hospital, Groningen), which no longer met their medical requirements, but is now extremely helpful for us. Third parties can use this machine as well.

How does your work benefit scientific research?
The archaeological study of excavated objects is barely possible without active conservation and/or restoration beforehand. For example, the investigative cleaning of a bronze diadem recovered from an Iron Age tomb at Crustumerium (near Rome), went on to provide clues that would otherwise have remained undiscovered. We were able to find traces of hair and textile within the corrosion crust, and this suggests that the object had been placed on the head of the deceased woman, and fastened in place with a veil.

What is the societal impact of your work?
The moment that a shovel goes into the ground...
during an excavation an age-long equilibrium is being disturbed. As ancient objects are exposed to oxygen or different humidity levels almost all of them will start to deteriorate rapidly. It is as if we suddenly have to start fighting against time to preserve these objects.

Of course, at the same time, we also want to preserve our wider cultural heritage, and each and every object forms part of this bigger story; they tell us about the way in which earlier people lived, what they ate, and how they spent their time. Archaeologists piece together different fragments of information in order to tell that bigger story. And in order to illustrate it and present this story to the wider public, they need to draw on the restored objects, which provide a powerful spark to people’s imagination.

How does the LCM inform non-archaeologists about its activities?
Unfortunately, however, the general public tend to be presented with only the final product of conservation; a reconstructed amphora, for example. Also, it is often difficult to show and explain the more technical work we do to the layman. We have created a website on which all kinds of information can be found regarding our activities (www.lcm.rug.nl). More specifically, we are currently planning an international exhibition on the Crustumerium project run by CMA. The exhibition will travel from Copenhagen to Amsterdam and then Rome. In order to show the visitors what the restoration of archaeological objects actually entails, I will be conducting ‘live’ restoration work; this actually forms part of the exhibition. Visitors will be able to see what I do and ask me questions about it.