

## ViS: Centre for Viking-Age Studies

*A Centre of Excellence at the Museum of Cultural History, University of Oslo*

### 1. The ViS essentials

#### **ViSion and objective**

The mobility of the Vikings, epitomized in their swift ships, has been considered the key to their military success. But – like today – does not extensive mobility account for much more than that? In state-of-the-art Viking Studies, mobility stands out as the main avenue to understanding the profound transformations of the Scandinavian societies in the Viking Age (AD 700–1100). Applying new methods developed in the natural sciences, mobility can now be studied using previously unheard-of datasets.

The Centre for Viking-Age Studies (ViS) will pursue this potential by capturing the cutting edge of archaeology and natural science and will integrate them in a radically interdisciplinary thrust within Viking-Age studies. This research will involve experts in history and literature, and will influence methods and theories in disciplines that study early history worldwide. The ViS research foci mirror contemporary global concerns; therefore, they lend themselves to an extensive dissemination scheme that will engage the public and inspire research through involvement and dialogue.

**The Primary Objective of ViS is to understand transformations of Viking-Age Scandinavia by studying the mobility of the Norse, its background, character and ramifications.**

#### **Why study the Viking Age?**

Early Medieval Europe underwent significant societal transformations. Communities and networks collapsed, new ones were created and people experienced profound shifts in ideologies, living conditions and opportunities. How shall such grand societal changes be studied?

The history of Norse, the majority population of Scandinavia, is an ideal ‘laboratory’ for refining theories and methods for studying such transformations. The Norse were mobile in the extreme. From their homelands they travelled to North America, North Africa and the Black Sea. Characteristics of their overseas ventures were exploration, trade, settlement, and Viking activity proper: seaborne piracy. In Scandinavia, the introduction of industries, kingdoms, towns and coinage made this northern periphery an integral part of Europe. The combined archaeological and written evidence regarding the Norse is rich and varied, and spans widely diverse cultural and natural environments.

#### **How shall ViS study the Viking Age?**

ViS research will address three state-of-the-art research foci, the *Themes*, each contributing to fulfilling the Primary Objective. Harnessing the ongoing Second Archaeometric Revolution, ViS will apply methods that allow us, with unprecedented precision, to trace the movements of people and objects of the past. Such data will be supplied by three *Sampling Programmes*, each employing specific archaeometric methods to analyse a selected category of Viking-Age objects (Table 1). Researching Themes and integrating new datasets will challenge existing interpretations and inspire re-analysis of established bodies of evidence, archaeological and written.

The research is organised to develop the scholarly communities and disciplines involved, and particularly to enhance the national and international position of Viking Studies. We shall:

- Create lasting collaborative relationships between Viking scholars nationally and internationally
- Connect national and international research bodies that apply and develop archaeometric methods, thereby contributing to building up baseline databases and universal standards for analyses
- Educate a group of interdisciplinary Viking-Age scholars with a balanced gender ratio, equipped to employ a variety of methods and theories, and to integrate disparate types of data
- Enhance the scholarly proficiency of the ViS host, the Museum of Cultural History, University of Oslo (MCH, UiO)

**Table 1.** Relevance of the three *Sampling Programmes* (pp. 7–9) to the three *Themes* (pp. 2–5)

THEMES	SAMPLING PROGRAMMES		
	Bones	Stones	Metals
Production & communities			
Trade & plunder			
Identities & encounters			

## 2. The Themes

Previous studies of Viking-Age transformations have relied heavily on written evidence; hence they focus on the two that are best testified there: Christianization and state formation (e.g., Bagge 2010). By involving the archaeological record ViS can study a different scope of transformations which are more closely connected to the wider population's social and economic agency:

- Long-distance trade and plunder: In the early Viking Age, the Norse started trading, plundering and eventually settling overseas. In the late period, plunder halted and trade prospered.
- Urbanisation: At the beginning of the Viking Age the first flimsy towns were established. At the end, towns were numerous and significant; they were the hubs of society.
- Production of marketable goods: In the early Viking Age, craftspeople started small-scale production of identical items. At the end, certain goods were produced on an industrial scale.
- Monetisation: In the Viking Age's first half, silver bullion and coins were introduced in towns as means of payment. At the end, Scandinavia had well-functioning monetary systems.

Why did these transformations happen, how were they connected, and what societal significance did they have? ViS will seek to answer such questions by studying the increased mobility of the Viking Age and the ensuing encounters, peaceful and hostile. Mobility connected communities, extended trade networks, and challenged identities.

This approach is reflected in the three research foci, the **Themes**:

1. **Production and communities:** Understand the changes in production techniques, volumes and distribution of marketable goods and explore their connections to urban and rural communities
2. **Trade and plunder:** Understand the differences in the Norse presence between the eastern and the western Viking World, and related economic and cultural variations within Scandinavia
3. **Identities and encounters:** Understand changes in regional and trans-regional identities, also gender-related, in Scandinavia and overseas (i.e., across the Baltic Sea or the North Sea)

The Themes may represent different perspectives on the same activity or transformation. Hence, ViS research will produce a multi-faceted in-depth understanding of them. Below are described the main research efforts that will be performed within each of the three Themes. During the centre's lifetime new factual and theoretical insights as well as emerging avenues for data extraction will inspire new research initiatives within the Themes. Some additional initiatives are described in the 'Letters of Intent' in Attachment 1:20–32.

### *Theme 1: Production and communities*

The two surges in production of marketable goods, both the early by artisans (e.g., metal casters and glass-bead producers) and the late large-scale production of necessities (e.g., iron and whetstones), were characterised by standardisation of products and more widespread distribution. Moreover, they coincided with the two waves of urbanisation in Scandinavia, the first around 800 and the second around 1000, and with two waves in the introduction of silver as a means of payment. The combined effect of these developments has often been called 'the emergence of market economy'. ViS will explore whether this label is justified, and will also identify geographical variations in production, trade and monetisation, and their connections to urban and rural communities.

Individuals were part of communities and networks of different types and extents ranging from, e.g., a single settlement to regional *thing* assemblies and international elite and trade webs. Communities and networks formed the social context of decision-making, both individual and communal. Therefore, understanding their nature and coherence is essential for understanding the accumulated effect of decisions about, e.g., production, trade and plunder.

Metal casters were numerous in the earliest urban communities, and their products, mainly *copper-alloy* and *lead* jewellery, can be found in great numbers all over the Viking World. Combining evidence from metallurgical, stylistic and technological analysis of jewellery may demonstrate the geographic extent of trade in these products. It appears that craftspeople in each town and region had their own stylistic and technological preferences, possibly also different supply routes for their raw materials. Exploring these variations will trace producer/consumer networks and shed light on the less researched topics of gendered roles in consumption and production. It will help resolve is-

sues of craftspeople's mobility, who they were in terms of ethnicity and gender, their dependence on urban and rural communities, as well as communication and learning processes. If artisans stayed more or less in their home town, did that reduce competition among them?

*Iron* was an essential commodity and its production and exchange will be studied in ViS. Iron was produced from bog ore, which could be found in most of the Viking World. An increase in iron production occurred in Norway, first gradually through the period and then rising sharply around AD 1000. Studies of production volumes and of product distribution will address the organisational changes involved. Was the same type of organisation behind the large-scale production, or did new types of entrepreneurs emerge? Did iron products move in regional networks, along peer polity networks, or was there market trade with free competition between producers? Studies of production-site location may contribute to answering these questions. Was iron primarily produced close to rural communities in the early Viking Age; later to be moved into forests and mountains?

The South-Scandinavian so-called 'central places', which appear to have been essentially aristocratic residences, were also regional or trans-regional assembly places with political, juridical, ritual and economic functions. Such communities would have been nodes in a variety of network types. For example, there are indications that juridical assemblies played an important role in the dissemination of technology. Comparing distribution patterns of, for example, iron and *whetstones* from specific production sites with the spatial extent of their respective law region may indicate if assembly sites were the main places for exchange of such products.

The main researchers on this Theme will be Bill, Holst, Iversen, Larsen, A. Pedersen, U. Pedersen, Sindbæk, Skre and Stylegar. Essential research questions include:

- Were towns and markets sought from far afield or were sellers and buyers from the region?
- Did metal casters stay in towns or did they also travel to markets and magnate farms?
- Which social groups in which periods had networks beyond the community, region and polity?
- Was the increase in iron production c. AD 1000 motivated by marketing opportunities?

## *Theme 2: Trade and plunder*

Large quantities of items from most of Europe and from the Caliphate arrived in Scandinavia in the Viking Age. Some appear to have arrived as trade-goods while others are obviously loot. However, we do not know how the majority of imports, especially silver bullion and coinage, were acquired. And some types of imports, like male and female slaves, have so far been close to invisible in the archaeological record. Both silver and slaves were essential commodities in Norse societies.

Over the years 845–86, Viking armies, according to chronicles and annals, obtained c. 20,000 kg of *silver* in ransom in the Frankish realm alone. In light of this it is quite startling that from the period 840–900, only 18 Frankish coins weighing a total of 0.03 kg and only quite few Frankish silver objects have been found in Scandinavia. Finds of English silver are also stunningly lower than the recorded loot. The possible explanations appear to be two, maybe in combination: the silver was cast into such jewellery and bullion that is found in abundance in Scandinavia, or the silver was not brought back to the homelands but circulated overseas. Actually, it is possible that the main source of silver before c. 950 was Islamic coins. They were acquired in great numbers, mainly through trade along the rivers of Russia and the Ukraine. About 95,000 have been found in Scandinavia.

The significance of the introduction of silver currency in Scandinavia has been discussed, revealing disparate opinions. Was silver adopted as currency on a par with other commodity-money media, or did it represent a qualitative leap? In case of the latter – was this as a consequence of more pronounced economic agency, or by long-distance trade with Francia and with the Caliphate or by urbanisation – or perhaps both?

When researching these issues the diverse character of the Norse overseas presence in the east and the west must be considered. The rich and numerous Scandinavian burials in the east are contrasted by the scarcity of such in the west. The geography may have contributed to this difference. In the west the sea would never be far away and the Vikings could take advantage of their superior maritime skills. To the east, Byzantium and the Caliphate were separated from the Viking homelands by thousands of kilometres worth of travel on rivers or land routes where diplomatic rather



than maritime skills were important. Such differences in approach may explain why Scandinavians, as attested in written sources and in cemeteries like that in Bodzia, took high military positions in Slavonic societies and in Byzantium. This barely happened in the west. Did the differences between the east and west influence the use of silver in eastern and western Scandinavia respectively?

Slavery was significant in Scandinavia in the 11th–12th centuries and had existed for many centuries. But how extensive was it in the Viking Age and where did slaves originate? Irish, British and Continental records speak of slave taking by Vikings. Written evidence from the Baltic is scantier, but contains similar indications. Did the Viking overseas slave taking supply labour to Scandinavia or did it fuel the Continental slave markets which flourished from the late 8th century onwards – the very period of Viking activity? Are there differences between the east and the west in this respect?

These two avenues for exploring parallels and contrasts between the eastern and the western Viking World – to study the movement of slaves and silver – can now be researched on wholly new types of evidence. Extracting metallurgical data on the origin of the *silver* in Viking items found in Scandinavia and overseas may reveal which amounts of silver can be traced to which mines and coinages during the period. These data will be discussed in the context of evidence on trade activity and pillaging by the Norse in the lands in question. Together, this evidence may be brought to testify on the ways silver was acquired and to what extent Norse settlers in the east and the west maintained economic relation with their homelands.

Biomolecular evidence from *human skeletons* can help research slavery. Ancient DNA and stable isotopes from Viking Age burials may indicate which individuals and genders originated overseas. But the number of burials is low, and it remains doubtful whether slaves at all received a burial in pagan times. The likelihood for quantifying Slavonic, Baltic, English, Irish or Frankish elements in the Norse population is better when combining the Viking-Age evidence with the much richer from 11th- and 12th-century Christian cemeteries in Scandinavia. Other strategies for researching the issue will also be sought.

The main researchers on this Theme will be Barrett, Bogoucki, Gullbekk and Williams. Essential research questions include:

- Was trade the dominant import mode of silver before c. 950?
- Was silver from 9th-century plunder in the west at all brought to Scandinavia, or did Vikings hoard and spend it overseas? Why were huge amounts of silver brought from the east?
- What caused the Norse to, apparently, approach more peacefully in the east and exert more hostility in the west? Did these variations influence the respective parts of Scandinavia differently?
- Were slaves from overseas raiding traded off, or were they taken back to Scandinavia?

### *Theme 3: Identities and encounters*

Awareness of one's identity emerges in the meeting with 'the other', who was present among the Norse long before the Viking Age. In woodlands and mountains in most of the Scandinavian Peninsula lived the Sami, and in southern and eastern Scandinavia the Norse met Frisians, Slavs, Finns and Baltic peoples. However, encounters with 'the other' were taken to a new level when raiding and settling in overseas areas started.

In addition, 'the other' may be found among the Norse. Addressing Viking-Age identities involves challenging the under-researched assumption that Norse culture was uniform. In Scandinavia the Viking Age has been seen as a Golden Age and used to support nationalism of both a democratic (the nation-states) and totalitarian kind (Nazism). May we speak of a more or less homogeneous Norse identity, or is this a recent construct of patriotic narratives?

The most intimate expression of identity in the archaeological record is the grave. Its outer shape (e.g., mound or stone setting), its size, its location, and not least the grave goods, express the identity of the deceased as seen by the living. Studies of variations in burial customs and in the use of specific types of *metal* objects will track changes over time in uniformity and distinctness in identities within and between families, gender-groups and communities.

Of special interest for understanding changes in identities are regions and sites where encounters between distinctly different identities occurred, for example, towns. They were contact zones or

'third spaces' where encounters with 'the other' could eclipse roots and identities, e.g., gender, could change. Also, the so-called 'huntmen's graves' that occur in high numbers in woodland and alpine regions in Norway and Sweden may reveal hybrid identities between Sami and Norse. Of special interest overseas are lands where both archaeological and written evidence can be brought to testify on identity issues. Comparing burial customs with evidence from ancient DNA and stable isotope analysis of *human skeletons*, the complex relation between identity, personal history and biological descent may be addressed. Place-name evidence and terms for identities, like 'Westfaldingi' and 'Lochlannaigh' may add facets to such analyses.

Using this range of data from various burial sites makes possible the examination of identities. Research questions will include investigation of the importance of, e.g., gender, family ties and community affiliation in terms of life quality and access to material objects. Comparing such parameters between Scandinavian and overseas communities will contribute to understanding the reasons for the migrations. Did they settle overseas to obtain a better life, and what did that consist of?

Some particular object types may be closely connected to certain identities, and analysis of their geographical and chronological distribution in graves and settlements may reveal identity changes. An example is *soapstone* vessels, which in Western Scandinavia were used for cooking, while pottery was commonly used elsewhere. It has been widely assumed that soapstone vessels were items of trade, and the finds of such in overseas areas have been taken to indicate the extent of trade networks. However, it has been suggested that one should rather regard many of them as personal possessions carried by immigrants. The abundance of finds in Denmark, however, is maybe more likely also to reflect trade. Provenance studies of soapstone finds, recently most promisingly achieved through ICP-MS analysis can, potentially, contribute to tracing trade networks as well as connections between immigrants and homelands in the various parts of the Viking World.

Elite identities will, *inter alia*, be explored through provenance studies of materials from richly furnished burials, both the *human skeletal remains* and finds that may constitute gifts. DNA studies have the potential of establishing family lines for humans, and provenance analyses of *metal* objects may illuminate networks and encounters.

The main researchers on this Theme will be Abrams, Andrén, Glørstad, Jesch, Østmo, Ravn, Sanmark, Semple, Solli and Svanberg. Essential research questions include:

- How diverse were identities, in particular regarding gender and ethnicity, among the Norse. Did diversity change over time?
- Did identities related to kinship, community, trade and plunder overlap or compete?
- Can hybridity and creolization be traced beyond the contact zones where they emerged?

### 3. Theoretical strands

Although thematically relevant, theories developed within the social sciences and the humanities are rarely apt to deal with the diverse types of sources needed to grasp complex issues in early historic times. Therefore, ViS will reappraise and redefine existing and emerging bodies of theory to make them suited to dealing with Viking-Age data and the ViS research agenda. Linking such discussions to ongoing research will instigate among ViS members innovative attitudes to the development of new theories, methods and concepts. The following three theoretical strands are particularly significant for the three Themes.

#### *Social network theory*

Most social networks in pre-modern societies appear to include both vertical (superior/ subordinate) and horizontal (e.g., peer to peer) relations, but normally one relation type dominated each network. The most recognised vertical relation in the Viking Age is that of loyalty and protection; the horizontal is that of kinship. Their nature and significance, however, has been established solely on the basis of written evidence. Tracing these and other types of networks in the archaeological record may improve the understanding of decision-making in the Viking Age.

The social sciences have in recent years reengaged in the study of objects. This 'materiality turn' was originally inspired by Bruno Latour's (1993, 2005) Actor Network Theory (ANT), which

identifies communicative systems by tracing the distribution of objects and people. Latour suggests that both objects and people are *actants* in networks, thereby assigning agency to both.

This stance has been welcomed by archaeologists since it acknowledges, more than other branches of social theory do, that material objects have a more immediate bearing on social affairs; yet its implications need to be assessed. Do the roles of objects in the human *Lebenswelt* justify regarding them as active, or are they mere tools, utensils, ornaments and symbols that people produce and use? Various strategies for strengthening and qualifying the interpretational potential of network theory will be explored.

Several attempts to make network theory less descriptive and more explanatory have been suggested. For example, Søren Sindbæk (2010) has applied mathematical methods to identify social structures and dynamics within Viking-Age networks. These and other extensions and modifications of ANT may allow networks to be perceived as relational and socially embedded; material culture acts as evidence of both networks and agency. In ViS the discussion of such prospects will be connected to the tracing of networks of technological innovations, trade, elites, communities and identities through analyses of the distribution of people and objects.

The main researchers are Barret, Glørstad, Holst and Sindbæk.

### *Economic theory*

Until recently, many studies of Viking-Age trade have presented extensive trade systems on the basis of distribution maps of assumed trade-goods. On the other hand, scholars with a theoretical bent have virtually excluded economic agency from Viking-Age societies. Both approaches are problematic; the reason being the lack of economic theory which can deal with the heterogeneity of both the Viking-Age economy and the available evidence.

The substantivist (or primitivist) position's 'over-socialised' (Granovetter 1985) concept of man as confined within social norms and values leaves little room for economic agency. The formalist (or modernist) position is no alternative, as some of its common assumptions fail when tested. Studies in psychology and sociology have demonstrated that individuals do not have stable and coherent preferences that they maximize; neither do they have perfect information and unbounded rationality when making decisions.

To grasp the Viking-Age economic upsurge, an ambition of ViS, one must transcend the substantivist/formalist controversy. The key to an integrated approach to the economy may lie in conceptualizing it more explicitly and incorporating it into the analysis of identities and networks. Recent research suggests that such approaches are well suited for the joint analysis of archaeological and written evidence, as in the Oxford Roman Economy Project. Also, Avner Greif (2006) has successfully introduced such approaches in studies of medieval trade in the Mediterranean. In Viking Studies insights from new economic sociology have proved fruitful. ViS shall explore these as well as other approaches to the economy; for example, study the cultural rationale for individual and collective choices.

The main researchers are Andrén, Bill, Bogucki, Gullbekk, Skre and Williams.

### *Identity theory*

In recent years the buzzwords within identity studies have been *diversity*, *trans-nationalism*, *post-colonialism*, *creolization*, *hybridity*, *interaction*, *hyper-contextuality* and *diasporic identity*. Prominent scholars hold that there is no such thing as a fixed identity or culture; they are not only relational; all is flux and transformation.

These concepts and theories are developed from studies of quite recent societies, and therefore, their suitability for the study of early historic times is dubious. For instance, it appears that post-colonial theory has failed to integrate material culture as a social factor. To apply such theories in studies of material evidence without a critical evaluation of their basic constructivist ontology is not recommended when studying identities, neither ethnicity nor gender.

Extreme relativity needs to be challenged on an empirical basis by conceptualising types and mechanisms of cultural coherence, for example, by exploring the extent of uniformity in material culture within groups that appear to have been identified by the same term. Also, theories and con-



cepts for the analysis of changing identities need refinement.

Developing further current identity theories is essential when addressing the nature of the Norse overseas settlement and the settlers' relations to the homelands, both economic and social. Also, developing better identity theories will enhance the understanding of economic and social relations and networks within Scandinavia and beyond.

The main researchers are Abrams, Glørstad, Jesch, Ravn, Semple, Solli and Svanberg.

#### 4. Research design and methodology

Research will take place in **Projects** where core members join forces with postdocs, PhD and Master students to resolve research tasks related to the Themes. Projects can range from two scholars writing an article to multiple-year many-million-NOK projects involving external partners. New project ideas will undergo a strict quality control to ensure that objectives address Themes, that competence and resources are adequate, and that synergies with other projects and Sampling Programmes (below, Fig. 1) are maximised. Every project will be conducted according to a budget and a time schedule with specified milestones and deliverables, and project leaders are responsible for achieving them. Several on-going projects will join ViS; research will therefore start from day one.

To increase synergies between projects and to maintain focus on the Themes, all scholars will participate in at least one **Theme Group** (Fig. 1). Groups will assemble regularly and discuss aspects of the Theme's research problems. Each Theme Group will be facilitated by a Principal Investigator (PI, Table 4, p. 11). The PI's shall identify knowledge gaps as well as methodical and theoretical issues, and initiate new projects. One PhD position will be assigned to each Theme Group.

The **Analysis and Database Unit** (ADU, Fig. 2 p. 10) will hold the centre's main expertise on archaeometric methods, databases, and analyses. They will be facilitators in the dialogue between humanists and natural scientists. They will capture and store the centre's data, and make them accessible to projects and transferable to public databases. The quality of data will be ensured through applying strict protocols for sampling, analysis and handling of data. E.g., to make data from different labs comparable, well-characterized reference samples will be used.

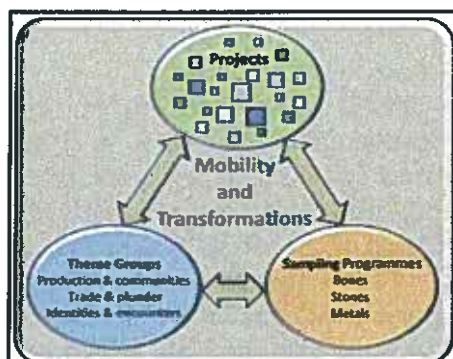
Scholars are experts in their fields and are familiar with existing evidence relevant to projects. In addition, new types of data will be supplied by the **Sampling Programmes** (Fig. 1 and below). Each programme will be coordinated by a core-group member supported by ADU staff, one 4-year postdoc, and researchers from projects with an interest in the programme. They discuss strategies (e.g., whether to aim for discrimination or provenance studies), sampling universes (e.g., whether to focus on specific sites, regions or collections), and choice of methods. The ADU will plan sampling processes, for example map lab capacities, identify bottlenecks and evade them.

All research activities will regularly be presented for discussion in the weekly **ViS Seminar**, which is the main communal academic arena of ViS. It is an informal and creative forum where core-group members, postdocs, PhDs and guests present project ideas, ongoing research, new methods and theoretical approaches for discussion. Seminars will vary from one-hour to full-day events and be open for MCH staff and the members of the ViS educational programme (p. 12).

##### *Three Sampling Programmes*

The study of artefacts has always been at the heart of Viking Studies; two centuries of excavations have unearthed an enormous mass of weapons, ornaments, utensils and bones now kept in museum collections. During the last half-century scientific methods have contributed new types of datasets from these collections, the first significant method being 14C dating.

Currently, a revolution is taking place in the archaeometric toolbox. Ongoing advances in scientific methods merit the term 'The Second Archaeometric Revolution'. Now, ancient DNA and sta-



**Figure 1.** The ViS research model. From their base in *Projects*, scholars participate in relevant *Theme Groups* and *Sampling Programmes*, criss-crossing the landscape of *Mobility and Transformations*. The research model is flexible and versatile, can easily be adjusted, and allows looping effects from any of its components to any other.

ble isotopes can be extracted from tiny inclusions in organic matter, obliterating the previously insurmountable problem of contamination. The continuing development of micro- or non-destructive sampling methods allows the analysis of unique objects. The building-up of baseline databases for identification and provenancing allows increasingly reliable conclusions. We are witnessing the emerging attainability of results hitherto beyond the reach of scholarship, for example, quantifiable patterns of production, trade, demography and mobility.

Coordination internationally is lacking in this field, for instance in the building up of baseline databases. Related research initiatives need to be connected and routines for making data generally available need to be established. ViS shall, supported by partners, take such a role.

Employing these perspectives, three Sampling Programmes will provide high-quality data designed to address some of each Theme Group's essential research tasks. The programmes will engage in developing archaeometric methods that are as yet experimental. The high risk of such engagements will be balanced by the application of established methods. The programmes will sample artefacts in national and regional museum collections in Northern Europe (i.e., north of the Alps). Principal museums have assured us of their willingness to facilitate such sampling (Attachment 1:3–9). Progress plan and milestones for programmes are described in Table 2, p. 10.

In carrying out the programmes ViS will work with existing laboratories and research units. All three programs involve the geosciences, in particular the provenancing in programmes B and C. This competence is present in ViS through the participation in the core-group of members from the Isotope Geochemistry Group at the Department of Geosciences (UiO) and the partnership with the Geological Survey of Norway (NGU, <http://www.ngu.no/en-gb/>) (Attachment 1:15–16).

Core-group members with significant experience in the application of archaeometric methods are Andersen, Barrett, Bill, Kutzke, Larsen, U. Pedersen, Simonsen and Sindbæk.

#### **Programme A: Bones**

This programme will assemble and supply results from isotope, ancient DNA, osteological and pathological analyses on many of the c. 2,000 known *human skeletons* from Norse burials in and outside of Scandinavia. As a starting point, our cooperation with the University of Cambridge (p. 12) offers a unique possibility to access material from ongoing excavations of a Norse burial site in Scotland, ensuring state-of-the-art procedures and protocols from excavation to laboratory work.

The programme will detect mobility, changes and differences in the composition of populations, their living conditions, social patterns of food consumption and distribution, and cultural practices like violence and body modifications (e.g., tooth filing). Genetic studies will reveal human dispersal and patterns of genetic continuity between generations. In combination with studies of the burial contexts these results will supplement and challenge object-based archaeological thinking about identity, gender, economy, networks and mobility.

The programme will also collect ancient DNA and isotope data from *animal bones*. Some species, like horses and dogs, may have been moved over large distances, while others, like sheep and pigs, may be assumed not to have been moved so much. Provenancing the former will supply information on trade and networks; isotopic signatures of the latter will supply baseline data necessary both to determine expected value range for local individuals and to identify the isotopic composition of regional food resources. Synanthropic species like house mice have been shown to hold excellent genetic markers of colonization episodes. Data from ancient DNA analyses will be compared with the growing body of data on geographical patterns in the DNA of modern humans and animals. Bone analyses will be performed by ViS staff in cooperation with leading research bodies internationally, including the Department of Evolutionary Biology, Uppsala University: <http://www.ebc.uu.se/Research/IEG/evbiol/> and the Laboratory for isotopic analysis at the McDonald Institute, Cambridge (Attachment 1:18): <http://www.arch.cam.ac.uk/garrod-laboratory/>

#### **Programme B: Stones**

*Soapstone* quarries have been found in most regions in Norway, and in south-western Sweden and in Shetland. Soapstone objects can be found in large numbers beyond these areas, for example, in Denmark, England, Ireland and Germany. Recently, soapstone provenancing based on inductively-



coupled plasma-mass spectrometry (ICP-MS) has been conducted. Results are promising but suffer from scant baseline data. So does the provenancing, hitherto not attempted, of the dark fine-grained Caledonian schist that was widely used as *whetstones* from the early Viking Age onwards.

The programme will supply baseline data from sampling quarries. Also, a selection of whetstone and soapstone objects from the whole Viking World will be sampled to trace their places of origin, mainly using mineralogical and geochemical methods. This will help in identifying trade routes and identities and networks of immigrants. This programme will be conducted by ViS staff in cooperation with NGU (Attachment 1:15–16).

### **Programme C: Metals**

A large proportion of Europe's profane *copper-alloy* metalwork of the 8th–10th centuries AD is found in Scandinavian graves; c. 10,000 objects. Half as many are in *lead*. Metallurgical analyses of this material, workshop waste and raw materials will aim at identifying the types of alloys, the quality of raw materials, and the degree of recycling of scrap metal. Results will be combined with evidence on technological and stylistic preferences and skills to identify innovation centres, groups of craftspeople, codes of practice, learning processes, and the distribution of technologies. Initially, large series of objects will be analysed using a non-destructive handheld XRF to select samples for detailed analyses by a micro-destructive technique (Electron Microprobe). Provenancing will be based on trace elements and/or lead isotope analyses (using MC-ICPMS).

In Scandinavia c. 285,000 Viking-Age *silver* coins have been found, in the Viking World c. 825,000. The estimated weight of ornamented silver and bullion is higher than that of the coins: some 400 kg. A selection of this material will be analysed using the methods described above, with the aim to trace the flow of silver from the mine through minting, possible re-minting, and melting down into ornaments and bullion. Recent studies suggest that European and Islamic silver thus can be differentiated. These and other groupings will be sought.

Thousands of *iron* production sites are known in Sweden and more than c. 2,500 in Norway. Based on data from selected sites, the chronology and volumes of the production will be estimated. The MCH collections contain more than 25,000 Viking-Age iron objects; the Norwegian total is c. 60,000 and the Scandinavian more than 150,000. Based on the geochemical composition of, respectively, iron objects and slag from production sites, selected objects will be provenanced (using Electron Microprobe). The method is much used but has hitherto failed to give convincing results. Recently, Bill, Larsen and colleagues have made promising progress by increasing the number of trace elements to be mapped. Further refinement of the method will be attempted, e.g. by including geochemical data on bedrock, soil and groundwater supplied by NGU (Attachment 1:16). Baseline data from extraction-site slags all over Scandinavia will be collected.

Metal analyses will be performed by ViS staff in cooperation with NGU (Attachment 1:15).

## **5. Value added generated by establishment of the centre**

ViS is rooted in the ongoing research of the core-group members, but takes it to a whole new level in terms of scale and ambition. Hitherto, in our research projects, we have applied novel scientific methods, developed theoretical strands and produced insights regarding specific sites, regions and artefact types. In this proposal, harnessing achievements gained, ambitions are raised to addressing grand themes in the overall understanding of the Viking Age and the Viking World. To successfully pursue these ambitions is needed a research body with the volume and duration of a centre.

Researching the complexity of mobility and transformations requires a concerted effort of a highly interdisciplinary research group with diverse competences. The Sampling Programmes, essential in the plan, need a stable funding and an 8–10-year perspective to be completed and for the results to be fruitfully employed in research. Employing them is not at all straightforward. For example, ancient DNA evidence has been taken to testify directly about cultural identity, ignoring the complexity of identity formation. To avoid such pitfalls, the use of archaeometric methods needs to be balanced by theoretical and historical insight. Only an interdisciplinary centre with the critical mass of scholars can achieve the productive synergy between data, methods, theories and history.

Only a centre of this size and duration can attract top international scholars, like the ones who have accepted our invitation to join ViS (Table 4 and Attachment 2). Also, such a research venue will attract a diverse group of PhDs and postdocs. Most of the core-group members are acquainted, but few have previously cooperated in research. They are now eager to focus on common goals.

ViS takes advantage of the momentum from the Kaupang Excavation Project 1998–2011 (Skre 2007, 2008, 2011), one of the largest and most successful research projects within Viking Studies during the last decades. Employing an international scholarly team, the excavation, the publication of its results, and groundbreaking research on urbanisation, trade, economy and politics of 9th–10th centuries were completed with unprecedented speed and quality. The project's networks are still intact and core staff can be reassembled. This will ensure that acquired competencies in collaborative research efforts, rarely seen but highly needed within the humanities, will be preserved and conveyed to a new generation of scholars. Without a new assignment this opportunity will be lost.

In combination, the educational measures in ViS (p. 12) will produce a generation of interdisciplinary Viking-Age scholars. In the future, nationally and internationally, expertise is needed among humanists on the application of methods that combine and bridge the natural sciences and the humanities. Education within ViS' interdisciplinary environment will enable students to understand the potential of archaeometric methods and data and to integrate them in research efforts.

Aiming at revitalising research and dissemination, the MCH is currently undergoing an in-depth analysis that will result in changes in organisation and staff (Attachment 1:2). Acknowledging that maintaining vitality is not achieved by such changes alone but demands a continuous effort, the MCH envisage ViS to be a dynamic agent that will constantly enhance the museum's proficiency.

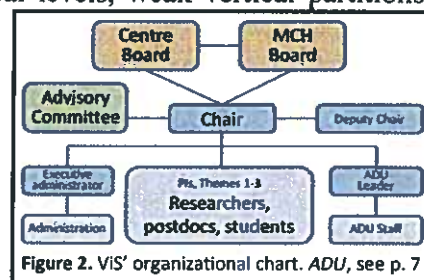
## 6. Organisation, core group, work plan and education

### *The ViS organisation, progress plan and milestones*

We find the following organisational parameters crucial to organising collaborative research:

- **Relation to host:** Clear-cut financial and administrative interface, independence in directing research and recruiting staff, and well-functioning routines for cooperation and information flow
- **Internally:** Firm and transparent leadership, few hierarchical levels, weak vertical partitions, and integrating venues and activities

A detailed contract is agreed between ViS and MCH deciding matters of responsibility, resources and communication. The MCH Board will approve the centre's budget and appoint the ViS Board. The ViS board and Advisory Committee will be composed when starting the centre. Information flow with the MCH will be attained by the Chair attending the weekly meetings of the MCH executive group (Attachment 1:2).



The Chair of ViS will be Professor Dagfinn Skre, Deputy Chair will be Dr. Unn Pedersen. All strategic as well as significant financial and administrative decisions will be taken by the Chair within the rules and regulations of the Research Council (RCN), UiO and MCH. In day-to-day management the Chair will work with the Deputy Chair assisted by an Executive administrator, supplemented when necessary with the ADU leader and the PIs. They all meet monthly with ViS members to share information and discuss matters pertaining to the centre's activities.

The ViS organisation (Fig. 2) and research model (Fig. 1, p. 7) will, while cherishing the benefits of a competitive environment, further a communal mindset and contribute to modifying the hampering tradition within the humanities of individual research. They will impede the develop-

Table 2. Progress plan and milestones for research and dissemination activities. X= Events.

ACTIVITY	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
<b>Sampling programmes</b>										
* Discussions and revisions of sampling strategies										
* Sampling										
ViS Conferences			X			X			X	
Exhibitions				X			X		X	
Multi-author volumes				X			X		X	
The C. Blindheim Lecture	X	X	X	X	X	X	X	X	X	X



ment of internal subcultures and will facilitate an open research environment where discussions thrive and exposure is mandatory. Research activities will define the organisation, not the reverse.

### *The ViS staff*

The core group has 25 members (Table 4). They have published cutting-edge results during the last decade and several are leading scholars internationally within their fields. Some are experts in handling large datasets integrated into GIS (Geographic Information System), and have contributed to the development of new archaeometric methods. Members have proven ability to generate external research funding, and they have chaired large-scale international research projects (Attachment 2). The group has a moderate gender balance (32 % females, Table 4) which we aim to improve (p. 14).

The western bias in the group's competence (Table 4) will be balanced during the activities of the centre by exploiting the networks of core-group members (in particular Bogucki, Bill, Sindbæk and Stylegar), as well as the agreements with East-European institutions made by our partner CBSA's and the National Museum of History of Sweden (Attachment 1:3, 19).

The involvement of non-UiO core-group members employed part-time in ViS will be organised as 2–3 annual concerted work periods for the Theme Groups, each of 2–5 weeks' duration. All group members will be present and alternate between workshops and writing periods.

### *International and national cooperation and funding*

Viking Studies is in dire need of extended international research efforts. Today they are mainly conducted in Scandinavia, Russia, Poland, Germany, Scotland, England, Ireland and Iceland. While research in Scandinavia has been inhibited by national research agendas, outside Scandinavia it has been impeded by being insufficiently tapped into the rich Scandinavian evidence that would allow broader comparisons and analysis. Also, because of the 20th-century political division of Europe,

Table 4. ViS core-group members, their participation in Theme Groups (Chs. 2 and 4), and main geographic regions of research within the Viking World (hatching= irrelevant). % = Annual percentage of work-year. X= Participant. PI= Principal Investigator. UiO scholars are highlighted in bold

NAME	DISCIPLINE	GEN- DER	Theme Group 1	Theme Group 2	Theme Group 3	%	Eastern Scandinavia	Western Scandinavia	Southern Scandinavia	North At- lantic	Ireland, Br. Isles	Francia, Germany	Poland, Baltic coast	Russia, Ukraine	Islamic Ca- liphate	Byzantine Empire
Chair																
<b>Dagfinn Skre</b>	Archaeology	M	X	X	X	100										
Deputy Chair																
<b>Unn Pedersen</b>	Archaeology	F	X	X	X	100										
Other core-group members																
Lesley Abrams	History	F		X	X	20										
<b>Tom Andersen</b>	Geosciences	M	X	X	X	10										
Anders Andrén	Archaeology	M	X		X	20										
James Barrett	Archaeology	M	X	X		20										
<b>Jan Bill</b>	Archaeology	M	PI	X	X	80										
Mateusz Bogucki	Archaeology	M	X	X	X	20										
<b>Zanette Glørstad</b>	Archaeology	F	X	X	PI	100										
<b>Svein H. Gullbekk</b>	Numismatics	M	X	PI		80										
Mads Kähler Holst	Archaeology	M	X		X	20										
<b>Frode Iversen</b>	Archaeology	M	X	X	X	100										
Judith Jesch	Norse literature	F	X		X	20										
<b>Hartmut Kutzke</b>	Metallurgy	M	X	X	X	20										
<b>Jan Henning Larsen</b>	Archaeology	M	X			40										
<b>Gunnar Liestøl</b>	Media studies	M	X	X	X	50										
<b>Einar Østmo</b>	Archaeology	M			X	20										
Anne Pedersen	Archaeology	F	X		X	20										
<b>Mads Ravn</b>	Archaeology	M			X	20										
Alexandra Sanmark	Archaeology	F			X	20										
Sarah Semple	Archaeology	F		X	X	20										
<b>Siri Simonsen</b>	Geosciences	F	X	X	X	10										
Søren M. Sindbæk	Archaeology	M	X	X	X	20										
<b>Brit Solli</b>	Archaeology	F	X	X	X	100										
Frans-Arne Stylegar	Archaeology	M	X	X		20										
Fredrik Svanberg	Archaeology	M	X		X	20										
Gareth Williams	History	M	X	X	X	20										

Table 3. Number of annual work-years in the basic positions in ViS.

POSITIONS	Employed	Vacant	Total
Researcher	10.8	5.0	15.8
Postdoc, PhD		6.0	6.0
Technician	0.1	2.0	2.1
Administrative		2.0	2.0
<b>Total</b>	<b>10.9</b>	<b>15.0</b>	<b>25.9</b>



Viking studies in the eastern and the western Viking World are weakly integrated.

Harnessing the particular dynamics caused by the Second Archaeometric Revolution, ViS shall contribute to overcoming both these obstructions. In all Themes, evidence from Scandinavia as well as the eastern and western Viking World will be addressed. Theme 2 is specifically designed for such integration. Also, the extensive national and international cooperation in ViS will contribute to reducing the dominance of a West-European perspective and to developing the competence of Viking-Age scholars to encompass larger parts of the Viking World. The Norwegian research community, rooted in both the Anglo-American theoretical and Continental empirical traditions, is ideally situated to take Viking Studies into a new era.

The ViS Advisory Committee members will be leading scholars within Viking Studies and in Early-Medieval Studies. Some will be chosen from the Chair's network (CV, Attachment 2)

The highly international character of the ViS core group can be seen from Attachments 1–2. To further expand international cooperation, ViS has established partnership with three research bodies that complement and support the core group's competencies. The three will contribute in joint projects, seminars, conferences, and exchange of scholars and PhD students. The partners' executive groups will also be invited to form an informal network for developing research leadership. Further information on their contribution to ViS is given in their Letters of Intent (Attachment 1:17–19).

- Centre for the Study of the Viking Age, Nottingham <http://www.nottingham.ac.uk/csval/>
- McDonald Institute for Archaeological Research, Cambridge <http://www.mcdonald.cam.ac.uk/>
- Centre for Baltic and Scandinavian Archaeology [http://www.zbsa.eu/centre?set\\_language=en/](http://www.zbsa.eu/centre?set_language=en/)

The Norwegian archaeological research community is large but dispersed between five University Museums and four teaching departments. ViS shall contribute to building bridges through transregional and transnational research activities and an educational programme (below). Regarding museums, ViS will reap benefits from and support the intentions of the RCN programme 'Strategic programme for the University Museums' (UNI-MUSEER 2009–14). The programme was initiated by the Ministry of Education and Research and RCN to strengthen research and cooperation between the museums. After the UNI-MUSEER programme ends, ViS will continue to develop networks and projects with the involved museums, thereby contributing further to national cooperation in the field. The museums have expressed their support to these ambitions (Attachment 1:2, 6–9).

Together with national and international partners ViS will develop grant proposals to national (RCN), Nordic (The Nordic Research Board) as well as international sources (HERA, EFS, ERC, FP8). Also, core-group members will pursue their hitherto very successful track record of obtaining funding from a variety of private, semi-public, and public funding sources. In the budget, up to 2015, we have listed only project grants that are secured and project proposals that currently are pending. Thereafter, a modest annual increase of 5% until 2021 is estimated.

### *Educational programme*

ViS will educate 15 PhDs. Several core-group members are experienced Master and PhD supervisors (Attachment 2) and they will initiate reading groups, colloquia and joint supervision for students. Cooperating with the well-established Nordic Graduate School in Archaeology 'Dialogues with the Past' currently based at UiO, and with our three international partners (above), ViS will offer a multi-disciplinary training programme. ViS has also agreed with the four Archaeology departments in Norway to exchange PhD students (Attachment 1:10–13). At any time, ViS will accommodate three exchange students from Norway and abroad.

To prepare the recruitment of qualified PhD students, ViS will work with relevant Norwegian universities, in particular the Institute of Archaeology, Conservation and History (IAKH) and the Department of Geosciences, both at UiO. Annually, four Master students from these four disciplines that present project sketches relevant to ViS research will become members of the ViS Master Student Scheme. They will be invited to events, given access to resources, be integrated in activities, and thereby connected to ViS networks. Also, core-group members will teach relevant Master courses at IAKH. These measures will make PhD and Master students, depending on their interest and abilities, eminently qualified for employment in museums, teaching and research.

### *Dissemination objectives and measures*

The scholarly dissemination from ViS will meet high international standards. Joint research efforts will dominate in ViS. Therefore, contrary to the tradition in the humanities, a high proportion of the output will be multi-author publications, mainly papers in peer-reviewed international journals. It will be required that PhD research has the quality necessary for publication of main results in such journals. We will also cherish the long-standing tradition within the humanities to produce monographs and multi-author volumes. Data from Sampling Programmes will be published online.

In the national publication credit system the average individual score of UiO scholars is ### points. ViS aims for an average score of ### points. Over a 3-year period every ViS scholar will be expected to produce an annual average of ### points.

Vikings have immense worldwide popularity. The ViS Themes mirrors transformations experienced by people today. Insights and accounts produced in ViS will provide identification and historical depth that will support people's efforts to cope with contemporary concerns.

In addition to meeting popular interest, the ViS public dissemination scheme is set to tackle a challenge that researchers will face: to keep the Primary Objective and the Themes in sight amidst the myriad of empirical details and discussions of specifics. The public tends to be interested in consistent stories and grand explanations. Therefore, the public dissemination of research results challenges scholars to produce syntheses free of scholarly jargon and is, potentially, a fruitful feedback loop for recontextualisation and critique of research questions and results. The popular dissemination measures (below) will all be venues for interaction with the public. Also, ViS will contribute to the IAKH-based project 'History of Norway online'. This interactive website will be launched on the Norwegian Constitution's 200th anniversary in 2014.

### **Conferences and multi-author volumes**

Each of the three ViS Conferences and the subsequent multi-author volumes will have the common heading '*Transformations of the Viking Age*'. They will address empirical and theoretical issues that relate to Themes and the Primary Objective. The first (2015, Table 2) will be dedicated to *Economy*, the second to *Identity*. The ambition of the third, *Mobility and Transformations*, will be to bridge Themes and synthesise ViS research. The subsequent volumes will contain a selection of improved conference papers as well as synthesising chapters.

### **Exhibitions**

The three exhibitions will have the same topics as the conferences and the multi-author volumes do. They will be produced by ViS working with MCH staff. Exhibitions will take place in MCH, which has c. 500.000 annual visitors, and will be offered to museums in Scandinavia and beyond.

In addition, ViS will contribute to the development of the permanent Viking exhibitions in the new building complex which will house the MCH Viking collection. The building complex is expected to be commissioned by the Norwegian government in 2013 and completed before 2017.

### **The Charlotte Blindheim Lecture**

Honouring the memory of MCH's leading international Viking scholar Charlotte Blindheim (1917–2005), this annual lecture will be given by a prominent scholar on a subject of public interest.

### **Mobile augmented reality**

An ongoing mobile augmented reality project headed by Prof. Gunnar Liestøl, Department of Media and Communication, UiO, will be included in ViS. It develops simulation of reconstructed past objects, environments, events and stories to be displayed *in situ* via shelf hardware (smartphones running e.g., iOS or Android). The expressive and narrative potential of this technology will be developed to make ViS research results available to the public on the actual sites where finds have been made. Such solutions may help easing the conflict between local communities that have their relics removed and the museums where the relics are kept. Working closely with other ViS scholars this technology's potential as a scholarly tool will also be explored. For a video demonstration see: <http://www.inventioproject.no/sitsim/>

### **WikiViking**

For the general public as well as students and many scholars, Wikipedia is the initial source of information on scholarly issues. The site has more than 400 million unique visitors monthly and expects to have 1 billion in 2015. Therefore, the quality of information offered there should be a prime concern for scholarly communities. The improved quality-control in Wikipedia, resulting in notable betterment, has tempered academic mistrust towards this collaboratively edited encyclopaedia.

ViS will join the rising numbers of academics among Wikipedia authors in an activity we have named WikiViking. All ViS scholars will be required to write and improve, in English and a Scandinavian language, Wikipedia articles related to their research. Following the success of some museums, ViS will promote two-way linking between relevant Wikipedia articles and public databases of archaeological finds and sites. Also, supporting an ongoing tourist-industry project at the Arts Council Norway, articles on Viking sites and finds will be geo-referenced, thereby making them easy to discover for people in the vicinity. To initiate WikiViking and support authors ViS will employ a 'Wikipedian in residence', a scheme developed at the British Museum in 2010.

### *Gender equality, ethics and environment*

ViS activities have no environmental repercussions. All Sampling Programmes will apply non-destructive methods or minimize interventions. That on human skeletons will observe the ethical guidelines of UiO, the guidelines of the National Committee for Research Ethics in the social sciences and the humanities, and accepted international standards.

Increasing the proportion of women in academic positions is a prominent strategic goal of the RCN, the UiO and the MCH. In addition to the obvious concerns about equal opportunities for all, regardless of gender, we hold that a balanced gender ratio promotes a diverse and creative research environment. Therefore, achieving a balanced gender ratio is an essential success factor for ViS. The objectives and measures describe below actively supports the intentions described in the UiO 'Gender Equality Action Plan 2010–12'.

- The gender ratio in the ViS leadership (Chair and Deputy Chair) is 50%, which is in line with our objective.
- The gender ratio among PIs is 33% female, which is in line with our objective
- In the course of the first four years we aim at increasing the ratio of female core-group members from today's 32% (8 of 25, Table 4) to at least 37%.
- Among the PhD students, we aim at a gender ratio of 47% females (7 out of 15)
- The ViS Board and the Scientific Advisory Committee will have a gender ratio of at least 40% females, and a female scholar will head at least one of these bodies

In Norway the last two decades, the proportion of females among undergraduate archaeology students has been well above 50%. Still, the gender ratio gets more unbalanced the higher the positions. The same is the case in the other humanistic disciplines involved in ViS. The following measures are intended to reduce the 'loss' of females in education and in the professional career ladder by optimizing the conditions for female Master students, PhD students and young scholars:

1. The Deputy Chair, a young and high-profile female scholar, will have a special responsibility to recruit and support PhD-students and young scholars
2. PhD students and young scholars, male and female, will be offered a mentor programme
3. When advertising for positions we will emphasize the general measures to support families given in Norway, such as paid maternity/paternity leaves (100% salary for 10 months or 80% for 12 months), and corresponding extension of PhD employment
4. In accordance with UiO policy, when female and male applicants otherwise are equally qualified, the female will be preferred
5. The annual Charlotte Blindheim Lecture will promote women in high academic positions

Based on their scholarly achievements and potential, two young female scholars have been appointed to leading posts in ViS: Dr. Unn Pedersen as Deputy Chair and Dr. Zanette Glørstad as PI. They are eminently qualified for these assignments and in addition, they will serve as role models for female Master and PhD students, and for young female scholars.



The Deputy Chair Unn Pedersen completed her PhD in 2010 and is already established as a leading Viking scholar. Her expert competence is Viking metalwork and the application of metallurgical methods. Having been a core staff member in the Kaupang Project and having held a teaching position at the University of Århus, prominent hubs in Viking Studies, she has built up an extensive international network and competence in education, as well as in organizing and conducting joint research efforts.

Zanette T. Glørstad took her MA at the University of Cambridge and her PhD at UiO in 2011. Her competencies span a wide array of fields, including the use of GIS analysis of complex distributional datasets. She is a prominent representative of the young generation of archaeologists who, harnessing the extensive theoretical discourse of the 1990s, creatively have renewed the study of objects. She is a seasoned project leader, has an excellent record of accomplishment for delivery, and an extensive international network.

### *Phasing-out strategy*

ViS is planned with the aim of supporting long-term plans for developing all relevant activities at MCH: research, conservation, excavations, exhibitions and collection management. ViS will engage in all these activities and thereby heighten the competence of existing MCH staff members. Also, staff members recruited by ViS will develop the necessary qualifications to fill vacant MCH positions. To further ensure that they are qualified for these positions, the MCH recruitment plan will be taken into account when employing ViS staff-members (Attachment 1:2).

On the closure date, five ViS staff members are expected not to have permanent MCH/UiO-positions to return to. But positions will soon become vacant: Following the closure of ViS the Chair will retire, and within a few years he will be joined by two MCH core-group members. UiO will grant a permanent annual contribution of 2 million NOK to every faculty or museum that receives a SFF grant. Following the closure of ViS, this grant will primarily be used to cover time gaps between cessation of ViS funding and vacancies at MCH.

## 7. References

- |   |   |
|---|---|
| <p>Bagge, S. 2010: <i>From Viking stronghold to Christian kingdom. State formation in Norway c. 900–1350</i>. København, Tusculanum Press</p> <p>Granovetter, M. 1985: Economic Action and Social Structure. The Problem of Embeddedness. <i>American Journal of Sociology</i>, 91:481–510</p> <p>Greif, A. 2006: <i>Institutions and the path to the modern economy. Lessons from medieval trade</i>. Cambridge University Press</p> <p>Latour, B. 1993: <i>We have never been modern</i>. Harvard University Press, Cambridge, MA</p> <p>– 2005: <i>Reassembling the social: An introduction to actor-network-theory</i>. Oxford University Press</p> | <p>Sindbæk, S. M. 2010: Re-assembling regions. The social occasions of technological exchange in Viking Age Scandinavia. In: R. Barndon et al. (eds.): <i>The Archaeology of Regional Technologies</i>. The Edwin Mellen Press, Lewistown, pp. 263–87</p> <p>Skre, D. (ed.) 2007: <i>Kaupang in Skiringssal</i>. Aarhus University Press</p> <p>– (ed.) 2008: <i>Means of Exchange. Dealing with Silver in the Viking Age</i>. Aarhus University Press</p> <p>– (ed.) 2011: <i>Things from the Town. Artefacts and Inhabitants in Viking-Age Kaupang</i>. Aarhus University Press</p> |
|---|---|

