

The Danish National Research Foundation's



**RESEARCH ACTIVITIES AT
THE DANISH NATIONAL RESEARCH FOUNDATION'S
CENTRE FOR TEXTILE RESEARCH (CTR)
2011**

INTRODUCTION

In 2011 CTR² continue the research of the first five years, and also embarks on new projects with new goals. This new scientific core of CTR consists of the two CTR² research programs: *Textile Economies in the Mediterranean Area (TEMA)* and *Textile Crafts and Cultures (TECC)*.

The primary staff of CTR in 2011 consisted of one director (Marie-Louise Nosch), four researchers (Ulla Mannering, Eva Andersson Strand, Mary Harlow and Karin Margarita Frei), four PhD scholars (Ulla Isabel Zagal-Mach, Lone Gebauer Thomsen, Luise Ørsted Brandt and Cecilie Brøns), and scholars employed/or affiliated for 1-12 months at CTR (Cherine Munkholt and Henriette Koefoed as editors; Peder Flemestad, Ida Demant and Vibe Maria Martens as research assistants; Maj Ringgaard as post doc.; Berit Hildebrandt (DE) as post doc; Zofia Katzmarek (PL), Christina Skelton (US), Ben Cartwright (UK), Wu Manlin (CN), Francesco Meo (IT) as visiting PhD scholars; Mette Bruun as coordinator; René Gummer as journalist; Cassandra Schröder Holm, Egzona Haxha, Niels Møldrup and Sidsel Frisch as students; Camilla Diggs as intern and several guest scholars who work with us for longer periods (Susanne Lervad, Term Plus, Copenhagen; Johan Zimsen, researcher, Copenhagen; Karin Annika Jepsen, Malmö; Camilla Luise Dahl, researcher, Copenhagen). In addition, numerous collaborators from Europe plus the USA, Canada, Israel, Syria, Jordan, China, Australia and Russia contributed to CTR research.

CTR greatly benefited from exchange and collaboration with the two CTR visiting professors, historian Zhao Feng, China National Silk Museum and archaeologist Judith Cameron, Australian National University who spent research time at CTR in October 2011. CTR also engaged in collaboration with DTU and Videometer A/S and on a pilot project on textiles and pollen sponsored by Research & Innovation University of Copenhagen (KUFIR).

In 2011, CTR signed collaboration agreements with CNRS/Nanterre (Cécile Michel) with the Wadi ath-Thamad Project (Michael Weigl) and China National Silk Museum (Zhao Feng).

Other important research activities were the final editing of several books, conference proceedings as well as monographs and papers. CTR scholars have given a total of 16 lectures at international conferences in 9 countries in 2011 (see appendix B). CTR has also arranged 4 international seminars and conferences in 2011. 60 publications have been published in 2011 by CTR staff and collaborators.



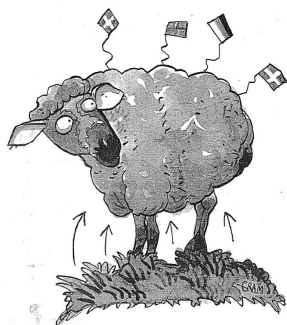
The Danish National Research Foundation's
**CENTRE
FOR
TEXTILE RESEARCH**

HIGHLIGHTS 2011



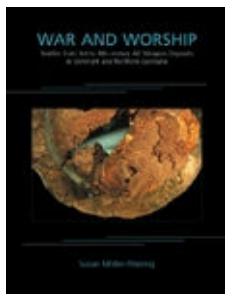
In 2011 Marie-Louise Nosch had her article "The Mycenaean administration of textile production in the palace of Knossos: observations on the Lc(1) textile targets" published in **American Journal of Archaeology**. See <http://www.ajaonline.org/article/1015>

Postdoc. Karin Margarita Frei received the "GMPCA 2011 PhD prize" in 2011 for her PhD thesis "Provenance of Pre-Roman Iron Age textiles – methods development and applications" from 2010.



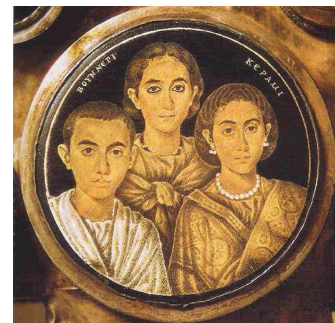
The international prize is given every second year for the best PhD in French or English within the field of archaeometry. In the thesis Frei has developed a new geochemical method of provenience for archaeological wool and plant fibre textiles from preroman Iron Age in Denmark and Sweden (500 B.C.).

In 2011 CTR celebrated the publishing of Susan Møller-Wiering's book *War and Worship: Textiles from 3rd to 4th-century AD Weapon Deposits in Denmark and Northern Germany*, Ancient Textiles Series 9, Oxford. The book is the first coherent documentation and analysis of textiles and their cultic part in weapon deposits.



The database workshop *From Tools to Textiles* in the research programme **TEMA** (Textile Economies in the Mediterranean Area) was held 22-25. November 2011 organized by Eva Andersson Strand and Lone Gebauer Thomsen .

Professor Mary Harlow is affiliated to CTR from 1. September 2011. For the next year she will be working to build up the research programme TEMA (Textile Economies in the Mediterranean Area) together with Marie-Louise Nosch.



Due to a generous donation from the Danish Agency for Culture it is now possible to finish all analyses in the project of the Hammerum girl and her costly textiles. A publication on the project results is in preperation.

During summer 2011 two new PhD scholars has begun their work at CTR.

Cecilie Brøns on the project *Textiles in Greek sanctuaries. 1050 – 323 BC*

Luise Ørsted Brandt on the project *aDNA - et redskab til analyse af den tidligste danske produktion af uld- og hørtekstiler samt udviklingen af dragt og identitet.*

The receivers of the **Margrethe Hald Prize 2011** were antropologist Henrik Kloppenborg



for his MA thesis *Becoming Real Businessmen? Negotiating Huangniu Identities at a Fake Commodity Market in Shanghai* and textile engineer Karen Marie Hasling for her MA thesis *Functional Fiber Composites.*

CTR RESEARCH IN 2011

TEXTILE ECONOMIES IN THE MEDITERRANEAN AREA (TEMA) (2010-2015)

STAFF

Marie-Louise Nosch (full time), Mary Harlow (March-December), Berit Hildebrandt (March-June), Eva Andersson Strand (part time), Peder Flemestad (full time), Egzona Haxha (part time), Cecilie Brøns (August-December), Susanne Lervad (part time), Henriette Koefoed (January-June).

Visiting scholars

Michael Weigl, tenured professor, University of Vienna, Austria (January, June); Francesco Meo, PhD fellow Ancient History Department of Cultural Heritage, University of Salento, Italy (November – December); Hedvig Enegren, post doc, Stockholm University (June, November); Christina Skelton, PhD fellow, UCLA, USA (July-August); Richard Firth, UK (August); Zofia Katzmerek, PhD fellow, Poland (March-June); Agnes Henriksen, MA student, TORS, University of Copenhagen (June-August), Beate Wagner-Hasel, Hannover University (June).

In 2011 the TEMA research team focused on building up a research group and a large network of collaborators. This included attracting foreign scholars to the TEMA group from Germany (Berit Hildebrandt), the UK (Mary Harlow) Italy (Francesco Meo), US (Christina Skelton) and Poland (Zofia Katzmerek). Research collaboration agreements were made with Birmingham University, CNRS, Nanterre, and Harvard University, USA; Toronto, Canada/Vienna, Austria.

In collaboration with the National Museum of Denmark, CTR set up a co-funded PhD grant for classical archaeologist Cecilie Brøns to research fibula and textile tools from the Lindos Athena sanctuary of Rhodes. Her main supervisor is Marie-Louise Nosch and the supplementary advisors are associate professor Lone Wriedt Sørensen, University of Copenhagen, and curator Bodil Bundgaard Rasmussen in the National Museum of Denmark.

SCIENTIFIC FOCUS AREAS IN 2011

Textiles in the Mediterranean Bronze Age

This focus area has existed since 2005 and continues to attract scholars and yield exciting results and publications. EAS and former PhD guest scholar Jo Cutler attended the XIth Cretological conference in Rethymnon and presented CTR research (Andersson Strand and Cutler forthcoming). MLN and R. Laffineur edited the 82 contributions to the Kosmos conference held at CTR in 2010 (MLN & Laffineur forthcoming 2012). Furthermore, MLN published a paper on Linear B administration of textile production in the world's most prestigious archaeology journal, the *American Journal of Archaeology*. The *Tools, Textiles and Contexts* manuscript was submitted to the publisher Oxbow Books, Oxford in June. The research program has also resulted in monographs, articles in international academic journals, papers in anthologies, articles in conference proceedings, web-published research reports, unpublished research reports, and several articles are currently in press. Several papers were written in collaboration with international partners within the research program. The results of this programme have been widely disseminated in publications, lectures, conference papers and workshops.

Finally in collaboration with CNRS research director Dr. Cécile Michel, MLN made an application for a joint project on the Bronze Age Economy of Wool called TexOrMed. This PICS application was successful and ensures a focus on Bronze Age wool economy for the coming three years. It includes joint workshops, teaching, and publications. The project has also received funding from the ESF.

Textiles in the Classical World

This is a new area of study and the focus in 2011 has been to build up and create new scientific networks. It links well to the EU project DressID in which CTR is involved since 2007 and which will terminate in 2013 with a touring exhibition.

A major resource is Mary Harlow from University of Birmingham who we were able to invite first for three months of 2011 as guest professor and then for an entire year (September 2011-August 2012). Mary Harlow is at

CTR building up scientific networks for the programme, supervising early career researchers, and writing a volume on *Roman Dress* commissioned by Cambridge University Press for their Key Themes series. In June Peder Flemestad and MLN gave a seminar in École Normale Supérieure, Paris, on the topic of 'Flax from the Bronze Age to Roman Egypt'.

Cecilie Brøns commenced her PhD studies on the fibula and textile tools from the Athena sanctuary, Lindos, Rhodes – a collection which is partly in Copenhagen, partly in Rhodes and partly in Istanbul.

CTR edited *Wearing the cloak* – 8 papers edited and published in 2012 as No. 10 in the *Ancient Textiles Series* (Oxbow, Oxford), with contributions from scholars from UK, Switzerland, Germany, Holland and Denmark. This anthology is a specialised volume on the Roman army and its clothing from archaeological, epigraphical and iconographical sources.

Berit Hildebrandt, EAS, UM and KMF have written entries for the European Dress ID exhibition catalogue.

Berit Hildebrandt, Cecilie Brøns and Jo Cutler participated in the conference at Kalamata, March 2011 on Greek textile production.

Berit Hildebrandt who was visiting post doc March–June 2011 received the prestigious grant from Volkswagen Foundation for a year's fellowship at Harvard University (September 2011-September 2012) where she has continued her association with CTR and her research on silk in antiquity. The collaboration with Berit Hildebrandt includes a conference in Harvard April 2012 with CTR scholars Mary Harlow and MLN as well as our Chinese collaborator professor Feng Zhao. Furthermore, CTR assisted post doc scholars Hedvig Landenius Enegren and Ellen Harlizius-Klück who successfully secured Marie Curie mobility grants to be conducted at CTR with the TEMA group from 2012-2014.

Textile terminology

This area remains a constant focus. In 2011 this project enriched by the formalised collaboration with a group of Danish museums and the Danish Heritage Board which funded a large scale survey and analysis of Danish textile terms in the Early Modern period. CTR collaborates on the issues of methodologies, new tools and methods to classify textile terms. This interdisciplinary collaboration has already led to one joint publication (Nosch & Lervad forthcoming). Susanne Lervad has been invited to speak about this collaboration at several conferences. Textile terminology is indeed a quite exciting platform for internal and external collaboration, ranging from Near Eastern and Mediterranean surveys of 3rd and 2nd millennium BC textile terms (Michel & Nosch 2009) to Greek and Roman textile terms (the DressID project) and Early Modern European textile terms with Maj Ringgaard (*Fashioning the Early Modern 1500-1800*) and modern textile terminological research in industries today (Susanne Lervad). In the formalized collaboration with the Danish Heritage Board, CTR has been designated as partner and scientific guarantor of the methodologies analysis.

Workshop: From Tools to textiles

The methods developed have now been integrated in several of the projects in TEMA. Additionally, researchers are visiting CTR to learn the new methods. In autumn 2011, (22-25 November 2011), both PhD fellows as well as senior researchers from Italy, DK, UK, Belgium and Denmark participated in the workshop. The four-day workshop, arranged by EAS and PhD fellow Lone Gebauer Thomsen, consisted of a series of seminars followed by practical exercises in which the participants worked with the database using their own dataset. In order to make the methods more accessible and easier to assimilate, a manual *From tools to textiles, a manual for recording, analysing and interpreting textile tools* was written. This manual will be published on the CTR website in 2012. The workshop demonstrated how the textile tool methodology developed by the TTTC team can now successfully be applied to textile tool assemblages from various European cultures, both in northern and southern Europe.



Ill. 1: From Tools to Textiles workshop

Experimental Textile Archaeology

The experimental testing of textile tools constitutes an important part of the CTR research and earlier results have had an important impact on the interpretation of textile production in antiquity. However, the diameter of a spindle whorl as well as the weight in relation to the diameter had not previously been tested systematically and was to be investigated in 2011. Another question explored was what would be the outcome if using the same tool but different fibers e.i. wool and flax? Finally, what are the differences between an inexperienced and an experienced spinner and are the differences visible when analyzing the spun yarn? In order to answer these questions, an experiment was designed by EAS and MLN and conducted in Lejre in autumn 2011. For a week two skilled spinners, two spinners with only a few years of spinning experience and one inexperienced spinner tested different spindle whorls and different fibers. The results are now compiled in a technical report. The preliminary results demonstrated some tendencies, for example that the diameter of the spindle whorls in relation to the weight of the spindle affects the outcome of the spun thread and furthermore, that skills, experience and ability clearly affects a product. Another result was that the four experienced spinners spun not only the same type of yarn but also the same amount of yarn when given the same prepared fibre material and same tool. This is a very important result when discussing a standardized textile production and the organisation of spinning. However, it was obvious that a week was too short to achieve clear statically and reliable results, thus a more elaborate experiment would have to be conducted to make further conclusions. The results of such an experiment could be used in the interpretation of spinning tools from different sites and periods and would provide insight into the types of fibres that were being spun. In order to gain a better understanding of the fibres used in textile production, the results could be combined with osteological and botanical analyses and thus allow further consideration of broader questions on agriculture and animal husbandry.

The Wadi ath-Thamad Project

A cooperation agreement was put in place in 2011 with the Wadi ath-Thamad Project and Michael Weigl, associate director of the research project and professor in Vienna. Cooperation is based on the analysis of textiles, textile-related tools and textile industry in Iron Age Syro-Palestine, in particular within the framework of the Wadi ath-Thamad Project. Additionally, cooperation to investigate ethnographic textile crafts in Jordan, and the organisation and presentation of a workshop at the University of Vienna, are also parts of the agreement. Michael Weigl has accepted an invitation from CTR to spend a research semester as a guest scholar at CTR, in spring 2012. Another part of the collaboration is that the unique and very well preserved textiles, excavated at the Iron Age site Khirbat al-Mudayna, have been brought to CTR/National Museum of Denmark for examination and further study. Archaeologist Agnes Henriksen who participated in the excavation at Khirbat al-Mudayna in the summer of 2011, will be trained by scholars at CTR and be in charge of the textile analyses during 2012. The results will be published in cooperation with CTR and the Wadi ath-Thamad Project.



Ill. 2: Textile from Wadi ath-Thamad, 500-800 B.C.

Outreach

TEMA was approached by the Danish journal *Sfinx* which publishes popular but research based papers about the Mediterranean area with the request for a special edition on CTR research. The TEMA group provided 8 contributions and the journal is published in 5200 copies in March 2012.

Submitted publications in 2011

Marie-Louise Nosch, "Les textiles des royautes", in Marie-Joséphine Werlings & Julien Zurbach (eds.) *Mélanges Pierre Carlier*.
Susanne Lervad, Pascaline Dury, Marie-Louise Nosch, "Verbal and Non-Verbal configurations of textiles: a diachronic study", *Conférence TOTh 2011. Terminologie & Ontologie : Théories et applications, Annecy, 26 - 27 mai 2011*.
Marie-Louise Nosch & Robert Laffineur (eds) *KOSMOS. Jewellery, Adornment and Textiles in the Aegean Bronze Age. 13th international Aegean conference held at Copenhagen, April 2010/13eme rencontre égéenne, Copenhague, avril 2010*. *Aegaeum* 33, 980 pages.

Eva Andersson Strand, Lone Gebauer Thomsen, Joanne Cutler, *From tools to textiles, a manual for recording, analysing and interpreting textile tools*.
Berit Hildebrandt, "Some Thoughts on the Unravelling of Chinese Silks in the Roman Empire
A Reassessment of Lucan", in *Bellum civile* 10.141-143, Conference Kalamata, Greece, March 2011.
Marie-Louise Nosch (ed.), *Wearing the Cloak. Dressing the Soldier in Roman Times*, Ancient Textiles Series 10 (150 pages), 2012.
2012, Henriette Koefoed, Marie-Louise Nosch & Eva Andersson Strand (eds), *Textile Production and Consumption in the Ancient Near East
Archaeology, Epigraphy, Iconography*. Ancient Textiles Series 12.

TEXTILE CRAFTS AND CULTURES (TECC) (2010-2015)

STAFF

Ulla Mannering (full time); Karin Margarita Frei (full time); Eva Andersson Strand (part time); Irene Skals (600 hours, NM funding); Anne-Lisbeth Schmidt (100 hours, NM funding); Conservation Department and photography, NM (300 hours, NM funding), Lone Gebauer Thomsen (40 hours), Cristina Olsen (full time), Luise Ørsted Brandt (June-December), Sølvi Fossøy (August–October), Ben Cartwright (October-December).

SCIENTIFIC FOCUS AREAS IN 2011

In 2011, work in progress and collaborations from the Danish Textiles and Costumes research programme have been included and will be continued within the TECC research programme. One important focus point for the TECC research programme has in 2011 been dissemination and outreach of research results to Danish archaeological research communities and networks and museums. Another main focus has been the sampling and preliminary analysis of Bronze Age textiles in the collection of the National Museum of Denmark.

Additional time was used on the final editing and language correction of contributions for *Designed for Life and Death* manuscript. Final editing and language correction of *Textiles and Textile Production in Europe: From Prehistory to AD 400*. The manuscript was submitted to the publisher in February 2011, and final corrections were made in December 2011. The manuscript is now published.

Danish Bronze Age Textiles

Four oak coffin graves with well-preserved costumes were selected for in-depth and systematic textile analysis including fibre analysis, dye analysis, strontium isotope analysis and light isotope analysis: Borum Eshøj Grave A and C, Egtved and Trindhøj. These four graves each represent a characteristic and specific male and female costume style.

In the autumn 2011 UM and Irene Skals analysed the majority of the approximately 150 textiles grave finds in the National Museum collection. Sølvi Fossøy, master student from NTNU, Trondheim, joined the programme for nine weeks in collaboration with the HERA-funded Cinba research programme. Sølvi Fossøy contributed with thread diameter measurements.

Further, all costume objects from the well preserved oak coffins were photographed by Roberto Fortuna, NM, and all fragmented textiles have been photographed by UM. Early Bronze Age skin materials were investigated and photographed. The results on dyes was received and showed no presence of dyes in the Early Bronze Age samples. The project was in 2011 supported by KUAS' Rådighedssum.

UM also produced texts about the costumes from four Bronze Age barrows (Skrydstrup, Egtved, Borum Eshøj and Muldbjerg) which the Danish Heritage Agency are to use for signs placed in the landscape close to the different sites. These texts will appear in Danish, English and German.

Ulla Isabel Zagal-Mach submitted her Ph.D project *Sails on the Horizon - a Craft Oriented Study of the Integration of Textile Sails in South Scandinavia Production and Use 500-800 AD* (2006-2011) co-financed by CTR and Lund University.

Luise Ørsted Brandt has embarked on her Ph. D. Project *aDNA - et redskab til analyse af den tidligste danske produktion af uld- og hørtekstiler samt udviklingen af dragt og identitet* (2011-2014). She will be performing the DNA analysis at and in cooperation with Centre for GeoGenetics, The Natural History Museum of Denmark.

Landscape of Textile Production

In this project textiles and textile production via the cultural, economic, social and gendered landscape will be investigate and discussed. The research project will be accomplished through a systematic registration and analysis of raw materials of vegetal and animal origin, tools and production installations in combination with

aspects on the physical and social use of the landscape. In 2011 EAS have started to select sites/regions. Furthermore EAS have started to record textile tools including a large group of loom weights from Uby, Zealand. However, as it has not been possible to date the find, it has decided send samples to a new research program, *14C- AMS- dating of the ceramic ware* directed by The Laboratory for Ceramic Research, Lund University. Charcoal will be extracted from the ceramic clay and C14 dated. Hopefully if the results are positive, this result will give new insights on the production, function and use of loom weights in a prehistoric context.

Strontium Isotope Analysis

Ion chromatographic procedures for provenance studies of ancient textiles have been further developed and improved, with the aim of achieving even better results from very small amounts of yarn thread pieces (<15 mg). The remaining corpus of textile samples (sampled in 2008-2010) was analyzed by Karin Margarita Frei. A strategy for publications of these results was compiled by Karin Margarita Frei and Ulla Mannering. Furthermore, sampling of the Bronze Age textiles from the National Museum textile collection began. A strategy for the sampling was proposed by Ulla Mannering.

The Hammerum Girl and The Lønne Hede Textile Project

The many different analysis of the Late Roman Iron Age grave find from Hammerum in Herning was presented at a seminar in January 2011. The different research reports are now available at the Midtjyllandsmuseum Homepage. The publication of the textile has resulted in one article in Danish (Mannering 2011) and one in English (Mannering & Ræder Knudsen forthcoming). The final publication with many co-authors is now being planned. The analysis and publication of the Lønne Hede graves from 1969 and 1995 containing well preserved textiles started. Samples for 14C and dye analysis were sent off and the results received. The project was in 2011 supported by KUAS' Rådighedssum.

Prehistoric shoes

In 2010 five prehistoric leather shoes were located at Viborg Stiftsmuseum. These shoes have not been documented before and the 14C-analysis showed that they belong to the Danish Late Bronze Age and Early Iron Age costume tradition. The 14C-analyses were paid by the AMS 14C-dateringspuljen.

The Ginnerup Grave

In 2008 a stone plate grave containing the burnt bones of one or more individuals was unearthed by Thisted Museum. The excavator suspected that the grave also contained traces of textiles and therefore the grave was taken up as a complete block. The grave has now been excavated at the Conservation Department at the National Museum of Denmark, and few but much degraded textiles have been identified. Analysis of the human remains will be carried out before publication.

Insulating and thermal capacity of wool, linen and nettle fibres

During experimental archaeological tests conducted by Ulla Mannering in 1994 and 1995 it was noted that nettle textiles possess extraordinary isolating properties. A property not recorded for linen textiles. In 2011 new A4 sized textile samples of nettle, flax and wool were prepared for analysis for thermic and insulating properties. The tests will be conducted in 2012. The project is supported by Elisabeth Munksgaard Fonden.

Textiles and Pollen. A Key to Ancient Daily Life

Staff: Marie-Louise Nosch, Ulla Mannering, Karin Margarita Frei and Vibe Maria Martens with participation of researchers from several Danish and international research institutions.

The Textiles and Pollen research programme is an interdisciplinary project which was started and developed in 2011. The project is based on a collaborative effort cross institutions and involving disciplines such as prehistoric archaeology, textile research, palynology and several more advanced disciplines within the natural sciences.

During the analyses of the Danish Late Iron Age grave find from Hammerum in Herning, Denmark, in which CTR is one of the primary investigators, the biologist Renée Enevold from Moesgaard Museum, discovered that the textile costume contained a completely different pollen spectre than that obtained from the surrounding soil taken from the grave. The unusual content of grain pollen stored in the costume was interpreted as representing

an activity related to the processes of harvesting or threshing. The results thus showed that the content of pollen in the soil and the costume are different and that they represented different bio zones and environments. This result opens for a whole new use of palynological information which can be used to identify human activities by identifying the pollen that has been stored in ancient textiles.

In order to develop this new area of research contact was established with professor Santiago Riera Mora from the University of Barcelona, who has worked with similar samples and contexts. He and his assistant Yolanda Llergo was invited to Copenhagen in September to discuss the implication of the research project and in this connection a seminar was held at CTR on the 6th September also inviting researcher from the Department of Plant Biology and Biotechnology/Section for Plant Biochemistry, Faculty of Life Science (LIFE), University of Copenhagen, Geological Museum, Natural History Museum of Denmark, University of Copenhagen, Videometer A/S Hørsholm, Geological Survey of Denmark and Greenland, Department of Environmental Archaeology and Conservation, Moesgaard Museum, SAXO-Institute, University of Copenhagen, Herning Museum and Varde Museum.

In October 2011 two samples from the Bronze Age grave from Egtved (textile threads and fur) was send for analysis at the University of Barcelona. The result was received in December and showed that the textile threads contained a high amount of grain pollen, while the fur did not contain any pollens. It was decided to write a joint article for Journal of Archaeological Science about the results from the Hammerum and Egtved graves. This will be submitted in 2012.

In August MLN applied for funding from the Research and Innovation Section, University of Copenhagen (KUFIR). The application was granted 200.000 DKK for making further applications. In December Ulla Mannering made a pre-application for the National Geographic Global Exploration Fund.

Publications submitted or prepared in 2011

Karin M. Frei, Ulla Mannering (in preparation) "Strontium isotope analysis of the Danish Bronze Age Lusehøj textiles".

Christian Bergfjord, Ulla Mannering, Karin M. Frei, Margarita Gleba, Annemette Bruselius Scharff, Irene Skals, Jan Heinemeier, Marie-Louise Nosch, Bodil Holst (submitted), "Nettle: An Important Bronze Age Textile Plant?", Science.

Marie-Louise Nosch, Ulla Mannering, Eva Andersson Strand, Karin M. Frei (accepted), "Travels, Transmissions and Transformations – and Textiles", in *Festskrift for Kristian Kristiansen*.

Eva Andersson Strand, Ida Demant, Ulla Mannering, Linda Olfsson, Lise Ræder Knudsen (in preparation) "Textiles and textile production at Vorbasse", in Ulla Lund Hansen (ed.) *Late Roman Grave Fields of the Vorbasse Settlement. Grave Fields, Settlement, Environment and Textile Production. Late Roman Jutland reconsidered*.

2012, Margarita Gleba & Ulla Mannering (eds), *Textiles and textile production in Europe from prehistory to AD 400*, Ancient Textiles Series 11, Oxbow Books.

2012, Eva Andersson Strand, "The organization of textile production in Birka and Hedeby", in S. Sigmundsen (ed.) *Viking Settlements & Viking Society*, Reykjavik 2009, 1-17.

OTHER CTR RESEARCH PROJECTS

COLLABORATION WITH VIDEOMETER A/S

Together with director Jens Michael Carstensen from Videometer A/S collaboration was launched in the autumn 2010. During this it was decided that Jens Michael Carstensen who is associate professor at the Technical University of Denmark, Department of Informatics and Mathematical Modeling in collaboration with Ulla Mannering was to present a number of textile projects during his teaching course in January 2012 in Statistical Image Analysis. In October the different projects were prepared and in December selected object were photographed in Hørsholm. Participants in the textile teaching projects were Vibe Maria Martens, Agnes Henriksen and Maj Ringgaard from CTR and Kirsten Toftegård from Designmuseum Danmark. The teaching is scheduled to take place from the 2nd-23rd January 2012.

FASHIONING THE EARLY MODERN. EU FUNDED (HERA) COLLABORATION ON FASHION RESEARCH

Staff: Maj Ringgaard, Marie-Louise Nosch, Camilla Luise Dahl, Mette Bruun, Laila Glienke.

Partners are Queen Mary, University of London, UK; Victoria & Albert Museum, UK; University of Helsinki, Finland; Stockholm University, Sweden. Danish collaborators are the National Museum of Denmark, Design Museum Denmark, Danish School of Design and The Royal Theatre.

The project is also collaborating with the Danish Costume Group on an interdisciplinary project on the creation and development of an online dictionary of historical terms for dress and textiles: textilnet.dk. The project leader is Tove Engelhardt Mathiassen and Maj Ringgaard is part of the project group.

The project demonstrates how a study of creativity and innovation as an economic and cultural force in the past can help our understanding of the same issues today. From CTR Maj Ringgaard is working on a post doc project *Creative traditions: knitting in Europe, 1500-1800* (2011-2012), where research on the distribution of knitted objects in Northern Europe during the late 16th century, 17th century and the first part of the 18th century, is undertaken. In 2011 Maj Ringgaard has conducted fieldwork studies on knitted early modern objects in the following museums: V & A and Museum of London, UK ; Livrustkammaren, Historiska Museet, Nordiska Museet, Stockholm Stads Museum and Skansens Klädkammere, Sweden; Københavns Museum, Helsingør Museer, Nationalmuseet, Denmark). The aim of the fieldwork is to explore the distribution of knitted items (e.g. stockings, waistcoats, caps) and to detect when different social groups exchanged the sewn hose with the knitted stocking or if the two kinds of leg wear were used simultaneously. The results of this research were presented by Maj Ringgaard at The Knitting History Forum conference at London College of Fashion, November 2011 (Ringgaard forthcoming).

The research also included investigations of traditional knitting, exploring the meaning of this term, on the historic reuse and recycling of textiles, on starch, coating and impregnation of textiles in early modern time and on the implementation of knitted textiles in daily wear and work wear. The results of this research were presented at the Spandex to Sportstech: Fashion and Innovation in Sportswear (November 8 2011, Copenhagen) (Ringgaard forthcoming).

The main written source for the investigation into the distribution of the knitted objects in Denmark during the late 16th century, 17th century and the first part of the 18th century are the probates from the Danish archives. This material allows us to see how the knitted items are spread in this period, both geographically and socially. Probates in archives all over Denmark, and to some extent in areas of Norway and Sweden that belonged to the Danish-Norwegian kingdom, have been studied. The probates are transcribed by historian Camilla Dahl, and those mentioning garments, textiles and textile tools are published on the project page of CTR in Danish and English. A part of the work conducted on the probates is also made available in due course as part of the "Object in focus" series of the Fashioning the Early Modern project website <http://www.fashioningtheearlymodern.ac.uk/>

Ongoing research in textile dyes and how the dyes influence the preservation of archaeological textile has been further developed leading to work presented at the conferences "Textile and chemistry" the Technical University of Denmark, (April 2011), *NESAT XI the North European Symposium on Archaeological Textiles* – Esslingen, Germany (May 2011) and *16th triennial ICOM-CC Conference*, Lisbon, Portugal (September 2011) (Ringgaard forthcoming; Ringgaard and Schaff forthcoming)

Maj Ringgaard was the co-organiser of the CIEITA conference (Centre Internationale d'Etudes des Textiles Anciens) in Copenhagen in October 2011 and was hosting the conference at the National Museum Denmark.

A workshop on the theme of early modern textile production was co-organised 6–7 October 2011 by the National Museum of Denmark, CTR and the Den Gamle By Open Air Museum, Aarhus. Twenty eight participants from Denmark, Sweden, United Kingdom, Finland, France, Italy, Germany and Australia took part in the 3rd project workshop on Early Modern Textile Production. The first day, participants visited the Brede Manor House, the National Museum conservation workshop, and the Rosenborg Castle conservation department where they saw selected items from the Royal Danish costume collection, as well as study rooms of the National Museum's Store Rooms where they saw selected textiles from the collections. On the second day, the participants visited the Old Town Museum in Aarhus and had the opportunity to view selected items from the textile collection. The afternoon of the second day was dedicated to a PhD student presentation session followed by a discussion.

An anthology with peer reviewed articles is in preparation for publishing in 2013: *Fashionable Encounters and Creative Communities in the Early Modern 1500-1850 – The Nordic Countries and the World. Dress, Accessories and Textiles*. The anthology will be edited by Marie-Louise Nosch, Maj Ringgaard, Tove Engelhardt Mathiassen, Mikkel Venborg Pedersen and Kirsten Toftegaard. Thirteen proposed articles have been accepted. All projects partners in the Fashioning the Early Modern as well as a group of relevant Nordic scholars has been invited to contribute to the anthology.



Ill. 3: Core members of the Danish part of the Fashioning the Early Modern project

RETRO CONCEPTS. FUNDED BY CENTRE FOR CULTURE AND EXPERIENCE ECONOMY

CTR is project partner in Retro Concepts [Retrokoncepter] funded by The Center for Culture and Experience Economy, CKO.

The aim of the project is to create increased economic growth for the participating textile companies through development of new concepts and storytelling. This is done with an infusion of historical and prehistoric research, inspiration and creative tools provided by the textile museum Textilforum, CTR and the creative mediator company Moving Minds.

Project partners are Development Centre UMT (project management), Textilforum Museum Midtjylland, Moving Minds, Katvig ApS, Haugland Collection, Skrivers Collection, Lene Bjerre Design A/S, Danish Art Weaving A/S, Georg Jensen Damask A/S.

The project was begun 1st of January 2011 and will end 30th of June 2012. In 2011 a number of inspirational lectures given by researchers from CTR took place: Indian textile dyes (Vibe Maria Martens); The Danish textile printing pioneer Marie Gudme Leth (Mette Bruun); Branding tools used by Danish textile companies after World War 2 (Birgit Lyngbye Pedersen); Reuse and waterproofing (Maj Ringgaard); Nordic knitting (Maj Ringgaard); Patterns, colors and techniques in a Nordic tradition (Ulla Mannerling); Weaving techniques (Tove Engelhardt Mathiassen).

A final conference and a travelling exhibition are planned for 2012.

SPANDEX TO SPORTSTECH – FASHION AND INNOVATION IN SPORTSWEAR CONFERENCE

In November 2011 CTR hosted an international conference at University of Copenhagen on textiles and sportswear. Papers on sports fashion, sportswear from a historical point of view, consumer research and the innovations in the field of technical and intelligent textiles was presented. Participants were scholars, designers and sport wear companies. The conference was live streamed and people also participated in the ongoing debate via remote participation.

Papers from the conference will be published as a topical issue of an international journal in 2012 edited by Mette Bruun and Michael Langkjær.

MARIE CURIE MASTER CLASS 2011

In June 2011 CTR held a master class aimed at attracting young European scholars to CTR/University of Copenhagen. We invited 10 young researchers to CTR and helped them to write and design a postdoc. project in Denmark for a Marie Curie postdoc. mobility grant. The masterclass was supported by University of Copenhagen. All 10 received a positive feedback from the international peer review and 10 had scores above the threshold of 75 points to bring them to the top 25 % of all applications for the grant.

CTR got two international postdocs who will begin their work at CTR in the spring of 2012. The success of our initiative has created resonance at University of Copenhagen and a new master class is planned for 2012.

EDITING AND PUBLISHING

Other important research activities of the centre consisted in 2011 of editing and publishing (see list of publications with a total of 404 publications). CTR has a publishing and distribution agreement with Oxbow Books, Oxford. The international scientific journal *Ancient Textiles Newsletter (ATN)* is edited and published at CTR, but independently of its centre of excellence structure.

In 2011, CTR staff and collaborators published 14 papers in journals, 18 papers in conference proceedings, 10 book chapters, 12 other types of publications and 6 books. The total publication productivity 2005-2010 is thus:

Total number of publications:	2005-2011	Peer reviewed	Non-peer reviewed
Number of journal articles	58	46	12
Number of conference series*	192	173	19
Number of monographs*	22	22	0
Number of book chapters	49	38	11
Research reports on web site	33	33	0
Others	57	26	31

CTR WEBSITE

CTR activities are communicated through our web site: www.hum.ku.dk/ctr. The activity on the website has been steadily increasing during 2011. On average we had app. 1400 unique users (new IP-addresses every time there is a visit) every month during the first 6 months of 2011 increasing to 1882 in November and 1752 in December. The visitors were primarily looking at CTR staff, information on conferences and research programmes. The reports in the Tools and Textiles – Texts and Contexts (TTTC) research programme published on the website were also very popular. A large number of our visitors come from the US, but also from Denmark and Europe.

CTR STRUCTURE AND STAFF

No major changes in the centre structure occurred in 2011. The SAXO institute underwent changes in staff which strongly influenced CTR's administrative structure, and made the task of controlling finances and hiring staff more difficult. From 2012, the economy will be run by Faculty of Humanities, faculty finance.

CONCLUSION

CTR's major milestones and achievements for 2011 were:

1. Consolidating two new research programmes, TEMA and TECC
2. Obtaining two new Marie Curie post docs 2012-2014
3. Choosing two new PhD fellows 2011-2014

Ved underskriften bekræftes det, at beretning og regnskab med tilhørende noter og oversigter indeholder alle relevante oplysninger, som vedrører årets primære aktiviteter i Danmarks Grundforskningsfonds Center for Tekstilforskning

March 2012

Marie-Louise B. Nosch, Director



* number of articles in conference proceedings

* this number includes monographs and anthologies edited by CTR