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Dr. Boris Pawlowski

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Two million euros for isotope zooarchaeologist Cheryl Makarewicz

European Research Council grant exploring the spread of mobile pastoralism across the steppe

The emergence of mobile pastoralism on the Eurasian steppe five thousand years ago marked a wholly unique transformation in human prehistory, where people relied for the first time almost exclustively on sheep, goat, cattle, and horses for their daily food. These new pastoralist lifestyles marked a radical departure from the sedentary agricultural societies that, up until this point, populated much of the Old World. In her project ASIAPAST, Professor Cheryl Makarewicz from Kiel University will explore the emergence, transmission, and the intensification of mobile pastoralism across the Eurasian steppe and how it transformed the diets, social, and symbolic worlds of the people who lived there. For this purpose, she has been recently awarded an ERC Consolidator Grant by the European Research Council (ERC). 329 out of 2.538 proposals have been accepted, 56 fundings went to Germany, and one goes to Professor Cheryl Makarewicz at Kiel University. She receives a funding of two million euros.

The five-year project “From herds to empire: Biomolecular and zooarchaeological investigations of mobile pastoralism in the ancient Eurasian steppe”, in short ASIAPAST, will be off to a flying start in May. Makarewicz, along with her team, will begin collecting human and animal bones and teeth, as well as pottery sherds, from key sites located in Mongolia, Russia, Kazakhstan, Uzebekistan, and Kyrgyzstan. These remains provide a valuable archive of biomolecular information that record information on what ancient pastoralists ate, how they managed their animals, and how far they moved. “This is the first inter-disciplinary project that tackles the exact subsistence and social mechansims that promoted the transition from hunting to herding over 4500 thousand years ago in this vast region of the world. We’re tackling fundamental questions that so far no one else has tried to answer”, states Cheryl Makarewicz.

Makarewicz has assembled a team of post-docs and PhD students who will employ a vast array of archaeological scientific analyses on human and animal bones and teeth and also pottery to answer these questions. This includes PhD candidate and CAU graduate Sarah Pleuger, who has extensive zooarchaeological experience with ancient animal remains recovered Bronze Age sites in Mongolia. Also, post-doctoral researcher Taylor Hermes, who soon receives his PhD degree from the Graduate School “Human Development in Landscapes” and will focus on ancient genomic analyses of sheep, goat, and cattle in order to track the pathways of livestock transmission across the steppe. Dr. Christine Winter-Schuh, a current post-doc in Makarewicz’s lab and also a CAU PhD, brings her deep knowledge of stable isotope biogeochemistry to isolate how scales human and animal mobility changed as nascent pastoralist began to exploit the landscape in new ways to support their livestock herds. Additional post-docs focusing on proteomic analyses of dental calculus and collagen proteins, and also food residue anlayses of pottery will also be supported by ASIAPAST with collaboration from laboratories at the University of Bristol and University of Manchester.

“With these cutting-edge biomolecular analytical approaches we will be able to better isolate the major subsistence and dietary changes that transformed human lifeways on the steppe”, states Makarewicz, “in particular when and how people began to incorporate milk and dairy products into their diets and also the meat and fat from domesticated animals.”

Makarewicz and her team also aim to understand how sheep, goats, cattle and horses were transformed from a source of subsistence to a symbolic medium that helped bring together far-flung nomadic communities through ceremonial activities that were carried out at large stone monuments such as kurgans and khirigsuurs). Gatherings at these momements appear to have involved the ritual slaughter of livestock, which were eaten as part of socially-integrative feasting events; the bone remains of these feasts and other ritual manipulations of livestock were subsequently placed in monuments and in human burials. Together, these examples highlight the role of livestock in supporting the emergence of complex political networks and trans-regional interactions resulting in "states on horseback" such as the nomadic Xiongnu Empire.

Photos are available for download:
www.uni-kiel.de/download/pm/2018/2018-069-1.jpg
Cheryl Makarewicz.
Credit: private

www.uni-kiel.de/download/pm/2018/2018-069-2.jpg
Archaeological samples from Eurasian steppe may lead to a better understanding, how lifeways changed due to animal domestication.
Credit: Claudia Eulitz/Kiel University

About Cheryl Makarewicz
Prof. Dr. Cheryl Makarewicz holds the Professorship Zooarchaeology and Stable Isotope Science at Kiel University's Institute of Prehistoric and Protohistoric Archaeology since 2010. Since 2011, she has served as Co-Director of the Graduate School of Human Development in Landscapes at Kiel University.Makarewicz conducted her postdoctoral research at the Archaeology Center at Stanford University and undertook her doctoral studies in the Department of Anthropology at Harvard University.

The internationally renowned zooarchaeologist has published 70 major academic papers in international journals, edited volumes and proceedings. She pioneered new methods for the use of stable isotope analysis to elucidate ancient animal management strategies and is at the forefront of developing an integrated isotope zooarchaeology. Her expertise in stable isotope analysis and zooarchaeology is recognized by her service as an Associate editor for Journal of Archaeological Science and as a reviewer for numerous national science foundations and international journals. In addition to her numerous isotope and zooarchaeology projects investigating animal domestication in the Near East, Cheryl Makarewicz has designed and led several ethnographic fieldwork projects in Mongolia documenting pastoral nomadic herding practices and dairying processing since 2003 and has directed numerous archaeological excavations in Jordan of key settlements representing the world's earliest food producing communities dating to 11,000 years ago. She has built and now supervises two laboratories at Kiel University (Zooarchaeology Laboratory and Archaeological Stable Isotope Laboratory) which together support a thriving community of post-doctoral researchers, PhD candidates, master's students, and bachelor's students.

Contact:
Cheryl Makarewicz
Institute of Prehistoric and Protohistoric Archaeology, Kiel University
phone: +49 431 880-3376
email: c.makarewicz@ufg.uni-kiel.de

Kiel University
Press, Communication und Marketing Services, Dr. Boris Pawlowski, Editor: Claudia Eulitz
mail address: D-24098 Kiel, phone: +49 431 880-2104
email: presse@uv.uni-kiel.de Web: www.uni-kiel.de Twitter: www.twitter.com/kieluni
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