EDITORIAL

Johannes Müller, Speaker Graduate School ‘Human Development in Landscapes’

The initial delight about the second five-year funding period for our Graduate School is already visible in new summer activities, some of which are described in this newsletter. Furthermore, openings for new PhD and post-doctoral positions have been published and have already triggered responses from a large number of interested young researchers. For more information see our website: www.uni-kiel.de/landscapes/allgemein/jobs.

To gain and to administrate public money for education and research, as the graduate school has once again successfully demonstrated, requires a high degree of responsibility. Our scientific products are not the result of private fundings, but of public efforts. But due to the power of private companies in monopolizing the publication of scientific results and because university libraries pay millions of Euros for periodicals in which their own scientists publish, many institutions and scholars have been attempting to find alternative ways to distribute their results. In light of this issue, “Boycott Elsevier” has become a new slogan within the scientific community (www.thecostofknowledge.com). Harvard, for example, asks their researchers to publish in open access journals because all research which is sponsored by the public should be readable for everyone, and often very different, radiocarbon signal. Therefore, he analyses samples not only from bulk bone but he also measures the chemical composition of the bone along a profile, trying to identify uncontaminated areas within the bone.

The second approach that Ricardo has chosen is to reconstruct ancient dietary habits using stable isotope analysis. The goal is to determine the proportion of any aquatic contribution. Well-documented finds of human bones, for which the age is already known, provide him with exact knowledge of the magnitude of the reservoir effect. Results obtained through diet reconstruction can then be compared with the determined reservoir effect and used to validate this approach.

Ricardo intends to finish his PhD project towards the end of the year.

TACKLING THE RESERVOIR EFFECT

GS student works on refining bone radiocarbon dating

When an archaeologist finds a bone during an excavation, he or she of course wants to know its age. A good method to obtain this information is radiocarbon dating, and Kiel University offers excellent conditions for this approach: The Leibniz-Laboratory for Radiometric Dating and Isotope Research is situated right in the middle of the campus. It features high-end technology such as a 3 MV Tandetron accelerator mass spectrometer (AMS) system and several mass spectrometers.

The Leibniz-Labor is also the place where Ricardo Fernandes, PhD student at the Graduate School, works on refining the radiocarbon dating of bones. He tackles the so-called reservoir effect; a phenomenon caused by having fish on the menu. “The bones of humans who had an aquatic diet during their lifetime may be “fictitiously” dated many years older than they really are”, Ricardo explains. “This is caused by an “old” radiocarbon signal present in aquatic reservoirs, derived, among others, from leaching of carbonates from the geological background, for example limestone rocks.” This old “carbon” enters the aquatic food chain and via a fish-based diet is incorporated in the human body. This of course includes human bones thus resulting in an apparently older radiocarbon age. As archaeologists and historians need accurate chronologies to interpret the development of human societies in the past, the reservoir effect may hinder many research projects.

To obtain more reliable chronologies, Ricardo takes two approaches. One of them is to date the mineral, non-protein, part of ancient bones, built mainly from dietary carbohydrates that are essentially only present in terrestrial plant material. “The problem with dating bone mineral is that it is often contaminated under different environmental factors” says Ricardo. For example, groundwater can seep into the pores of buried bones where it deposits soil carbonates which have their own, and often very different, radiocarbon signal. Therefore, he analyses samples not only from bulk bone but he also measures the chemical composition of the bone along a profile, trying to identify uncontaminated areas within the bone.

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RAISING A STONE – REVEALING A SECRET?

This summer, archaeologists from Kiel University are undertaking a field campaign at the Küsterberg near Hundisburg (Saxony-Anhalt, Germany). In cooperation with Saxony-Anhalt’s State Office for Heritage Management and Archaeology, they are excavating a megalithic tomb dating from the early Neolithic. In mid-July, a special moment occurred when, with support from the Agency for Technical Relief (Technisches Hilfswerk), the 2.5 ton capstone was lifted. As a result of this lift, the chamber of the tomb can now be examined. The researchers are especially seeking ceramic remains from Funnel Beaker societies. The megalith is situated near the river Beber, which marks the border between a moraine landscape to the north and loess soils to the south. Around 5,500 BC, the first farmers reached this area from the banks of the Danube. The change they brought was immense: Sedentism, agriculture and livestock breeding were all innovations at the beginning of the Neolithic.

The excavation is part of the DFG priority programme 1400 “Early Monumentality and Social Differentiation”. Our colleague Christoph Rinne and his team of 15 students from the Institute for Pre- and Protohistory at Kiel University are supported by Kay Schmütt, member of the Graduate School “Human Development in Landscapes”, who is writing his PhD thesis on the construction of social space in this landscape during the Neolithic.

IMPROVING TEXTS

Eileen Kücükkaraca, Scientific and Technical Editor at the Graduate School, offers her assistance in editing English texts of all GS members. The main focus concentrates on enhancing grammatical, syntactical, and stylistic aspects of a variety of English texts, such as research papers, presentations, posters, abstracts, and applications. Eileen’s office
High resolution settlement dynamics and their impact on archaeologi- 

cal landscape studies in southwest Azerbaijan", which his co-authors 

Tevekkül Aliyev and Barbara Helwing presented there.

**GRADUATE SCHOOL ALUMNI (III): FEVZI KEMAL MOETZ**

More and more PhD students of the first generation are finishing 

their projects and leaving the Graduate School. We keep in touch with 

them and trace their next steps. Where are they going after their PhDs, and 

what are they doing there? 


Fevzi-Kemal Moetz finished his PhD studies in 2011. In his thesis, he 

analyzed aspects of early sedentism in Mesopotamia. Kemal compared 

data from more than 200 Neolithic sites in the region. The postdoctoral 

position he now holds is oriented in the same direction: It focuses on 

the sites of Gusir Höyük (near Siirt in southern Anatolia) and Aktoprak- 

lik (near Bursa in northwestern Anatolia). While the former provides 

hints for the overall beginning of the Neolithic (10th century BC), the 

latter reveals traces of its spread to Europe (7th century BC). The project 

is based at Istanbul University and financed by the German Academic 

Exchange Service (DAAD). 

“The aim is to analyze the dynamics of sedentism at these sites and 

and to reconstruct the interaction between humans and environment”, 

explains Kemal. An interdisciplinary combination of methods is ap-

plied to this end; archaeological excavations, soil science and palyn-

ology are used to produce data, which are then analyzed via a geographic 

information system (GIS). “Furthermore, we will do an aerial prospection of the sites using a quad-

rocopter”, Kemal says. “By combining the picture 

from the quadrocopter camera with a topographic map and the GIS-processed data, we want to obtain a 3D reconstruction of the 

settlements and the excavations. This should enable us to draw conclusions about the settlement 

development in relation to environmental dynamics.” 

In his new position, Kemal benefits a lot from his time at the Graduate 

School. “In Kiel I learned much about the methods I am using now”, 

he states. His first contact with Istanbul University was also support-

ed by the GS: “Thanks to my PhD stipend, I was able to go there and 

prepare my fieldwork activities in Turkey.” Additionally, contact with 

soil scientists and palynologists from Kiel University was facilitated by 

means of the interdisciplinary structure of the GS, as Kemal underlines: “Without all these options for training and cooperation provided by the Graduate School, my postdoctoral project would not exist today.”

**SELECTED EVENTS** (complete calendar: www.uni-kiel.de/landscapes)

Venue for Biweekly Colloquia: Leibnizstraße 1, Room 204

**September**

Wednesday, September 26, 10:00 a.m. – Special Biweekly Colloquium: Steve Weiner, Kimmel Center for Archaeological Science, Weizmann Institute of Science, Rehovot, Israel. Microarchaeology.

**October**

Thursday, October 25 (2:30 p.m.) and Friday, October 26 (9-12 a.m.) - Poznańer Tage. Siedlungen, Gräber, Deponierungen der mitteleuropäischen Bronzezeit: Gemeinsame Forschungen aus Poznani und Kiel (lectures in English and German) - Institute for Pre- and Protohistory, Johanna-Mestorf-Str. 2-4

**November**

November 22 to 23 – Advisory Board Meeting

Friday, November 23 – GS Plenary Meeting