



human development in landscapes
GRADUATE SCHOOL AT THE UNIVERSITY OF KIEL

BIWEEKLY COLLOQUIUM
Monday, 2nd of July, 5:00 p.m.

ZOOMS: TOWARDS MOLECULAR BONE IDENTIFICATION ON AN
INDUSTRIAL SCALE

Professor Matthew Collins – York University (UK)

Biomolecular archaeology is rightly being transformed by advances in next-generation sequencing of DNA, which provide unparalleled access to molecular information in the past. Protein has been the backbone of radiocarbon dating and bulk stable isotope analysis, but the speed of technological development has seemed slow when contrasted with DNA.

In this presentation I will explore future directions for *protein* research within the context of landscape archaeology under three headings: (i) Degradation, (ii) Identity and (iii) Recovery.

It is (in the authors view) essential to understand degradation and we will highlight the way in which degradation can be used to estimate the age of sites, and by this to further understand the link between site history and molecular preservation. We are using proteins, keratin, collagen and eggshell proteins as simple low-cost methods for identification, as an example I will discuss the use peptide mass fingerprints of bone collagen (ZooMS) to explore the circulation of Viking combs. Finally we are exploring the ability to recover sequence from skeletal (and other remains) and will discuss the potential for the applications of protein analysis to the dental calculus, to explore oral health and diet in the past.

Venue: Lecture room 204, Leibnizstraße 1, CAU Kiel