Ancient biomolecules

Module Lead: Prof Matthew Collins
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Term: Spring

Level / Credits: Level 7 / 20 Credits

Module status: Elective Module

Studies of ancient biomolecules will dominate all forms of bioarchaeological research over the next decade. This module is principally targeted at osteoarchaeologists, with a focus on the analysis of skeletal materials, but will more broadly appeal to anyone who is likely to encounter biomolecular data sets in the course of their research or professional career. The series of lectures will describe how biomolecules are preserved, extracted and analysed from ancient skeletal tissues in order to complement and enhance information gained from macro to microscopic techniques. Applications to archaeology, but also to evolutionary biology and palaeoecology will be explored through accompanying seminars, where students will be kept abreast of the latest techniques. The module is mainly aimed at the 'end user' of biomolecular data and emphasis will be placed on learning how to evaluate and interpret published research and datasets in the seminar sessions. The module will also provide a good theoretical basis for anyone interested in pursuing this field at a practical level.

Learning Outcomes

By the end of this module, you should be able to:

1. Critically evaluate past studies for scientific rigour, cost and knowledge gained.
2. Recognise the methodological strengths and limitations of various techniques.
3. Recommend applications where biomolecular analysis is likely to be useful.
4. Select, conserve and take samples for biomolecular investigations.
5. Interpret published data sets.

Module Aims

The aims of this module are:

a. To provide students with a good understanding of biomolecular preservation in skeletal remains.
b. To provide students with an overview of the very latest methodologies used in biomolecular analysis.
c. To allow students to place biomolecular data in the wider archeological and palaeoecological context.

Assessments

Formative essay – max 2,500 words

Summative essay – 100% - max 3,500 words

For more information about this module, please visit the Department of Archaeology website.