PhD Studentship (Irish Research Council Laureate Project Scholar) with the University of Bristol and University College Dublin

Investigating the social drivers of passage tomb construction via organic residue analysis and compound-specific radiocarbon dating

Organic residue analysis of absorbed lipids in pottery vessels provides a powerful means determining animal exploitation and subsistence regimes, the success of which rests on the capacity of the porous fabric of unglazed pottery to absorb and preserve lipid residues of the animal and plant products processed therein. In the absence of animal bone and herd profile data, biomolecular and isotope analyses can be used to infer various aspects of animal exploitation, notably the extent of meat versus dairy product processing by prehistoric communities. Additionally, insights can be gained into the importance of hunted animals, such as fish, crustacea and molluscs, in the prehistoric human diet.

This studentship offers an exciting opportunity to carry out interdisciplinary archaeological chemistry research at the University of Bristol in collaboration with University College Dublin. The studentship is funded as part of the Irish Research Council Consolidator Laureate Grant to Dr Jessica Smyth (University College Dublin) for the ‘Passage Tomb People’ project. The student will work as part of a team aiming to identify the social drivers of passage tomb construction in the 4th millennium BC, focussing on the archaeology of three key zones – Ireland, North Wales and Orkney. Erected several centuries after the arrival of farming in each region, these tombs may be responses to economic stress or, equally, the result of surplus and increasing social competition. The overarching aim of this PhD studentship is to probe the connections between monument construction and changes in farming practice, diet and environment, testing whether similar factors triggered similar behaviours in each area. This will be undertaken via organic residue analysis of absorbed lipids in archaeological potsherds and radiocarbon dating. Fatty acid components of organic residues will also be used for radiocarbon dating using accelerator mass spectrometry (AMS). These data will be complemented by animal and human bone collagen, apatite stable isotope data, and radiocarbon dates determined as part of the project.

As an Irish Research Council Laureate Project Scholar, the student will become a member of a vibrant, interdisciplinary research group at the Organic Geochemistry Unit, School of Chemistry, University of Bristol, supervised by Professor Richard Evershed FRS and Dr Jessica Smyth, University, College Dublin. As with all postgraduate students enrolled at the University of Bristol the student will be supported by the Bristol Doctoral College. The College supports students in a wide variety of ways at all stages of their professional and personal development during their studies.

The successful student will receive a stipend of £15,009 p.a. for 3.5 years. Tuition fees are also covered by the award.

Candidates should possess a degree in a relevant subject area, such as a 2:1 or higher in chemistry, archaeology or a related discipline aligned to the studentship.

Potential applicants should apply through the University of Bristol's online postgraduate study application portal: [http://www.bristol.ac.uk/study/postgraduate/apply/](http://www.bristol.ac.uk/study/postgraduate/apply/)
Informal enquiries to Professor Richard Evershed (r.p.evershed@bristol.ac.uk) or Dr Jessica Smyth (jessica.smyth@ucd.ie).