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WELCOME TO THE ANNUAL REVIEW FOR 2011

By Jo Appleby

Welcome to this year's Annual Review. 2011 seems to have been a bumper year for Osteoarchaeology. Osteologists in the commercial sector seem to be busy as ever (in fact Wessex was too snowed under to have time to produce a contribution – we look forward to hearing from them next year), whilst the Academic sector has seen some expansion, with both new appointments and new courses. The number of graduate research abstracts is also reaching a noticeably high number. It seems a far cry from the gloomy prognosis of the 2010 Review!

One of the most uplifting aspects of editing this year's Review has been seeing the number of really innovative projects improving public access to our research. Nick Marquez-Grant's recent workshop for the blind shows what an impact such projects have made. Other important contributions are the University of Bradford's 'From Cemetery to Clinic' project and the 'Digitised Diseases' project run jointly by the University of Bradford, Museum of London Archaeology and the Royal College of Surgeons. These both provide an important resource for professionals at the same time as giving access to the public. And of course, I can't leave off without a mention of the awarding of the inaugural Stephen Fry award for excellence in public engagement with research to CAHID at Dundee. Congratulations all round!

Many of you will have seen (and perhaps taken part in) the recent debate over the fate of the skeleton of Charles Byrne. I would like to thank Martin Smith, Christopher Knüsel, Andrew Chamberlain and Piers Mitchell for giving their permission to republish here in full their response to the original article in the BMJ.

This year's conference will be hosted by Bournemouth University in September (details in the 'forthcoming conferences' section). As usual, I look forward to seeing you there!

ASSOCIATION NEWS

President's Comment

By Chris Knüsel

The last year has witnessed some changes to the BABAO Committee membership. With Mary Lewis, Piers Mitchell, and Jacqui McKinley stepping down, Linda Fibiger (Edinburgh) and Nicholas Marquez-Grant (Cellmark Forensic Services and School of Anthropology and Museum of Ethnography, University of Oxford) have joined the BABAO Committee as Secretary and Representative from the Commercial Sector, while Piers Mitchell moves from his role as Secretary to continue on the Committee in one of the two Non-Executive Member posts. The membership will join no doubt wish to join me in thanking Piers, Jacqui, and Mary for their service to BABAO and welcoming Linda, Nicholas, and Piers in his new role. As endorsed at the AGM, the headship of the BABAO is now termed 'President', rather than 'Chair', to bring the BABAO into line with terminology employed by cognate organisations.

In last year's commentary, I lamented the loss of several important posts in the academic topography of the United Kingdom. This year has seen a rebound from those losses that attest to the continued vitality of biological anthropology in the UK. As noted in the news from Exeter contribution to this Annual Review, Dr. Sébastien Villotte's three-year appointment at Bradford has offset the losses sustained by Archaeological Sciences in recent years.

Dr. Linda Fibiger has also taken a similar REF-bolstering post at the University of Edinburgh. From a BABAO perspective Durham University has off-set the loss of Alex Bentley to a Professorship in Archaeology at the University of Bristol with the appointment of Dr. Janet Montgomery from Bradford to a Senior Lectureship and Dr. Bethan Upex, formerly a post-doctoral researcher at the University of Aberdeen, to take up the post of Archaeological Science Technician 2 (Bioarchaeology) in the Department of Archaeology. The University of Leicester, without a permanent member of staff contributing to osteoarchaeology since the retirement of Dr. Jenny Wakely, has appointed Dr. Jo Appleby, Editor of the BABAO Annual Review and formerly post-doctoral researcher in Cambridge's Department of Archaeology, to a lectureship in the Department of Archaeology. I will take this opportunity to congratulate this excellent group of scholars on their appointments on behalf of the BABAO. Liverpool John Moores University's advertised desire to appoint three professors in various sub-disciplines of biological anthropology in the coming year provides great anticipation for further good tidings in the coming year.

After long deliberation and sustained effort by many within as well as outside of our organisation, the Ministry of Justice, in conjunction with English Heritage, is in the process of re-drafting the applications for the retention of human remains encountered in the course of excavation, planned or unplanned. Although not completely reversing the previous interpretation, this change in burial legislation practice goes some way to righting what was clearly an unwieldy, confusing, and damaging period, with even longer-term destructive effects for people of the past and the present.

The past year saw the launch of the *International Journal of Paleopathology*

under the editorship of Jane Buikstra, with UK-based members Mary Lewis, Piers Mitchell, Charlotte Roberts and the writer joining the board of Associate Editors and the latter three also serving as Members of the Advisory Board for the Elsevier published journal. The first two volumes have appeared and the highly polished quality of the contributions and high standard of production augurs well for this flagship journal of the Paleopathology Association, for which BABAO members receive reduced subscription rates as part of their membership subscription. I encourage members to consider submitting manuscripts and experience the thorough reviews and rapid turnaround times of the new journal. In a similar vein, the BABAO will launch its annual publication *Trends in Biological Anthropology*, published by Oxbow Books, with Tina Jacob serving as general editor. This publication venue will be BABAO's primary organ for disseminating published (and peer-reviewed) conference proceedings, as well as other submitted material.

Piers Mitchell and the writer represented the BABAO Committee at a special meeting of the Royal Anthropological Institute (RAI) called by the newly appointed Director, Dr. David Shankland. President Roy Ellen opened the meeting that included the broadest range of biological anthropologists in the country ever brought together in one place. BABAO is very pleased to continue to interact with the RAI in its efforts to unify anthropology and anthropologists in the UK. With recent mergers of anthropology sub-disciplines at Cambridge and closer working of anthropology and archaeology departments at a variety of other institutions, such joint working- if not full mergers- will influence the shape of biological anthropology in the future.

As a result of the RAI meeting, the BABAO Committee will provide a table at the London Anthropology Day on 5 July at

the British Museum, an occasion to showcase anthropology in its various guises for those studying the subject. It is a big venue for what promises to be a big event.

BABAO members experienced the pleasant climes of Edinburgh for the past year's annual September (2-4) gathering, under the overall organisation of Dr. Kath McSweeney and her colleagues. With three themed sessions encompassing Palaeopathology, Scientific Advances in Osteology, and Forensic Anthropology, along with an Open session, attendees were treated to over 40 podium presentations and nearly 30 poster presentations. This past year's meeting featured keynote lectures from Prof. Donald Ortner (Smithsonian Institution) on his long engagement with the clear description and rigorous differential diagnoses that have become standard in palaeopathology through his efforts. Prof. Sue Black (Dundee) provided a scintillating review of forensic anthropology in the UK that provides much food for thought as well as incisive look at the operation and constituents of forensic work in this country. Based on his equally long engagement in the discipline, Prof. Don Brothwell (York) provided a wide ranging panoply of the discipline in his plenary presentation that set the stage well for the Advances in Osteology session, while Prof. Katarina Harvati (Tübingen) provided an up-to-date review of human evolution from fossil remains that provided a stimulating opening for the Open session. The Edinburgh meeting continued the sustained trend for these meetings to be topical, well attended, an engaging. Next year's meeting, organised by Martin Smith, Holger Schutkowski, Amanda Korstjens, and their colleagues at Bournemouth University, the first to be held in an hotel rather than a university lecture theatre (*ed.'s note: at the time of going to press the conference has moved back to the University*), is already shaping

up to be a grand occasion with plenty of disciplinary food for thought on show. I look forward to seeing you in Bournemouth next September!

Report from the Membership Secretary

By Stefanie Vincent

Membership numbers stood at 411 at the end of 2011, slightly increased from 401 in 2010 and showing the same steady rise as in previous years. Renewal rates remain at around 70%, due in main part to the use of standing orders and online payments.

The number of student members has increased slightly; students now comprise just under 45% of the membership, an increase of around 5% from 2010. A detailed breakdown of our membership can be obtained from the table below (please note, members can be in more than one category).

MEMBERSHIP CATEGORIES IN %	
Students	184 (44.7)
Academics	68 (16.5)
Work in commercial sector	40 (9.7)
Anthropologist/archaeologist	27 (6.6)
Osteologist	34 (8.3)
Unemployed	19 (4.6)
Forensic specialists	24 (5.8)
Work in Museums	10 (2.4)
Medical	8 (1.9)
Retired	4 (0.9)
No information supplied	4 (0.9)
Other occupations	10 (2.4)

The category of 'other occupations', includes such diverse professions as administrators, IT consultants, funerary directors, artists and engineers. Our association thrives on this broad range of occupations and affiliations and this provides us with a dynamic and interesting membership. I would like to take this opportunity to encourage members to use the 'change of details' form available on

the membership section of www.babao.org.uk to track changes in job titles, positions and affiliations in addition to personal details.

We recruited 96 new members during 2011. The majority of these were UK residents (79%), with the remaining 21% representing overseas members. This brings the total number of non-UK members to 79, representing 19.1% of the membership. The majority of our overseas members come from other European countries (n=52), including the Republic of Ireland, France, Portugal, Germany, Denmark, Belgium, the Netherlands, Greece, Iceland, Italy, Sweden, Finland, Norway and Switzerland. We also have 21 members from North America, as well as four from Australia and one from New Zealand, and one member from Japan.

Just under 70% of the membership paid fees online in 2011, either via standing order (n=117) or Pay Pal (n=163). I can only encourage you to choose this paper and hassle free method of paying your subscription.

Please do not hesitate to contact me if there are any questions regarding BABAO membership; either at the address inside the front cover of the Annual Review or through our website at www.babao.org.uk.

Report from the Student Representative

By Evilena Anastasiou

The Student Members of BABAO are a dynamic and vital part of the organisation, with a strong and positive presence in the Annual Conference, where many student members present papers in a variety of issues concerning the discipline.

The number of student members engaging with the organisation's social media is steadily increasing. The BABAO Student Members' Facebook group is now listing

140 members and it is progressively becoming an important platform for exchanging information about upcoming conferences and workshops, funding opportunities, new discoveries in the field and museum exhibitions.

In the coming months the BABAO website will be hosting a new Student Hub, where we will be able to find information on relevant courses, workshops and conferences, as well as advice from established members of the field. It is our hope that the Student Hub will become a new platform where student members will be able to actively engage in the activities of the organisation.

If you would like to become a part of the Student Facebook Group visit our page at <http://www.facebook.com/groups/20007038661/?ref=ts> If on the other hand you are a student member and you want to be kept informed about rising matters but do not wish to join the Facebook group, email me at ea333@cam.ac.uk to be added to our email group.

Do not hesitate to contact me if you have any questions or suggestions regarding any issue relevant to the Student members, our activities, or our Facebook group.

PEOPLE

Jo Appleby joined the School of Archaeology and Ancient History, University of Leicester in January 2012 as Lecturer in Human Bioarchaeology.

Jonny Geber has joined Cotswold Archaeology as their in-house human and animal bone specialist

In July 2011 Amy Gray Jones was awarded her PhD from the University of Manchester and in September she took up a fixed-term lectureship in Archaeology at the University of Chester, providing cover

for the research leave of Prof. Howard Williams.

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Dr Gary King (Quebec) joined the Department of Archaeology, Durham University as an Institute of Advanced Studies (Durham) Junior Research Fellow working on discerning insect vectors for the transmission of infectious disease epidemics in the past.

Dr Janet Montgomery joined the Department of Archaeology, Durham University in January 2011 from Bradford.

Tim Thompson has been made Reader in Biological and Forensic Anthropology at Teesside University.

NEWS AND PROJECT UPDATES

**A Response to Doyal and Muinzer
“Should the skeleton of “the Irish giant”
be buried at sea?” *British Medical
Journal* 2011; 343 doi:
10.1136/bmj.d7597.**

*By Martin Smith, Christopher Knüsel,
Andrew Chamberlain and Piers Mitchell*

We write this response as biological anthropologists (sometimes referred to as “oste archaeologists”). Essentially, we are experts in the analysis of the skeletal remains of past people, which are the most direct link we have to past human culture and experience. We take issue with Doyal and Muinzer’s article calling for the burial at sea of Charles Byrne’s skeleton on a number of grounds.

First, a philosophical question engaged with by archaeologists and anthropologists much more often than by clinical medical practitioners is how much of a body needs to be present for remains to qualify as a “body”? For example, only a skull, a metacarpal or a single tooth might represent the material remains of a given individual excavated archaeologically. If the remains of Charles Byrne were similarly sparse, we wonder if he would now be receiving the level of attention his case is currently experiencing. The reality is that what remains of Charles Byrne is the mineral component of one body system. The organic component of his skeleton (largely composed of collagen fibrils) will have begun to slowly denature since his bones were first exposed and will continue to decompose gradually into the future. The component of bone that survives is largely the 70% or so composed of hydroxyapatite –the crystallized form of calcium that gives bone its strength. In this respect the bones on display are not Charles Byrne’s “body”, but rather a part of it that retains the form of the whole in a way with which people can more readily engage, not least perhaps because a skull has a face.

In this respect it may be salient to note that there have been no calls to bury the Evelyn boards also on display at the Hunterian Museum. These 17th-century anatomical preparations (possibly the oldest in Europe) consist of other body systems, arterial, venous and nervous fixed to flat boards for teaching purposes. It is likely that these preparations were extracted from the bodies of executed criminals whose wishes were not considered in dissecting them. However, the present authors are aware of no campaign to rebury these faceless two-dimensional arrangements of nerves and blood vessels. It would seem that bones enjoy a special position in ethical debates that is generally denied to other components of the body.

A further point is that Charles Byrne is not unique. Human bones form part of museum displays throughout the world, some of which are those of individuals whose identities are known. For example, the skeleton of William Burke the infamous 'resurrectionist' has been displayed in the Edinburgh University Anatomy Museum since shortly after his execution in 1829. It is reasonable to suggest that in relation to his manner of death and subsequent treatment that Burke's wishes were "known", or at least can be reasonably assumed. It is unlikely that Burke would have wished that 25,000 people would attend his hanging to watch him die in public. Nor is he likely to have been pleased to have his naked body exhibited to the many thousands who paid to file past him shortly after his death (1). Burke was then publicly dissected, whilst, famously, pieces of his skin were removed by medical students and used to bind a book that remains on display with his bones. A similar argument could be put forward for the burial of Burke's bones on the basis that what was done to him would be regarded as "barbaric" by modern standards. However, this would do nothing to change the fact that these things happened.

In fact, the current display helps to demonstrate the opposite – that these things did happen in the past, but no longer occur due to changes in human perceptions instilled in legal and professional standards that are part of the historical process. These activities were accepted – and justified – in the past, more often than not by the opprobrium attaching to the criminally convicted, whether we would find them guilty today or mete punishment in the same way or not. No matter how earnestly we might apologize for these acts perpetrated by others now long dead, Burke cannot be "un-hanged" or "un-anatomized". Rather, these remains aptly demonstrate that actions are part and parcel of the social and cultural contexts in

which they occur. This is an important object lesson for those wishing to protest against violations of and protection for civil liberties.

Doyal and Muinzer (2) argue that Hunter used grave robbers to provide him with "unauthorised exhumed bodies". This is anachronistic as there was no legal authority required for exhumation before the passing of the Anatomy Act in 1832.

Hunter may have been immoral by today's standards, but it is not appropriate to imply that his methods were at that time illegal.

Then, as now, there was no property in a corpse, and it was only in the 19th century that disturbance of buried remains became a statutory offence. Virtually all specimens added to pathology museums in the 1700s and 1800s were against the wishes of the person from whom they were dissected. The bodies were either acquired by grave robbers, carried off from the gallows for dissection as added – and publicly condoned – punishment, or the poor who died in workhouses and were unclaimed by relatives (3). If Charles Byrne's bones are to be buried, the same standards should be applied to all pathology museum collections in the UK acquired before the era of consent. Such a move would impact considerably on the teaching of pathology in the UK. The dissection of bodies, an activity that was deemed illegal and sacrilegious in preceding centuries, served to instruct many thousands and formed the basis of modern medicine. There is no adequate substitute, replica or computer-generated, for studying actual bodily remains, especially those that are unusual.

Doyal and Muinzer (2) correctly assert that Byrne did not wish his body to fall into Hunter's hands, but they go no further in considering why he felt so strongly about this. Byrne lived at a time when people felt strongly that one's body must remain 'intact' in order to be resurrected at the Day of Judgement. Dissection was therefore feared, particularly on the

grounds that it would deny an individual the chance of entering Heaven. As the post-mortem fate of criminals, dissection also carried great social stigma. On these grounds a strong argument can be made that what Byrne wished so desperately to avoid was dissection. Of course Hunter's actions in regard to Byrne's body were wrong and today would be illegal. But, regardless of modern opinion we cannot change what happened. Like Burke, Charles Byrne cannot now be "undismembered". In this context the proposition of being buried at sea to avoid dissection is a very different one from actually being cut up by Hunter, only to finally have one's remains dropped into the sea as disarticulated bones centuries later. Such an alternative proposition would be closing the stable door 200 years after the horse had bolted and, although modern commentators might claim to be able to gauge Byrne's opinion, he remains intractably silent on the matter. We are unable to ask Charles Byrne about how he might feel were his bones to survive two centuries to a time when attitudes towards disability and difference would be vastly different and when those who engaged with his remains did so in a spirit of empathy and respect, rather than entertainment. A further point that is conspicuous by its absence from Doyal and Muinzer's article is that the relatives of Byrne who have been identified by Chahal et al.'s (4) study have expressed a wish for Byrne's skeleton to remain on display at the Hunterian Museum. Any future decision regarding Byrne's remains should take this point into consideration.

The position that once research has been "finished" there is no reason to retain human remains any longer has been used repeatedly (and erroneously) to argue for the reburial of archaeological skeletons. However, this notion misrepresents the nature of research. Research is a cyclical process where old conclusions are revisited periodically and new techniques

and questions emerge over time. If the same argument had been made after Cushing's 1909 (5) study of Byrne's skeleton, then Chahal et al.'s (4) study based on Byrne's DNA, which Doyal and Muinzer (2) describe as "important" could never have happened. Moreover, we have much more to learn about the effects of endocrine disorders on bone structure and even more about their interaction with genetic predispositions that are as numerous as the individuals affected. Therefore, every skeleton is a storehouse of evolutionary life history. Making claims that "we already know everything worth knowing" about any area in science is a guaranteed way to be proved wrong at a later date. It is certain that the discovery of DNA is not the last scientific development that will ever be made in relation to the human body.

Doyal and Muinzer also imply that respect can only be achieved by reburial. This is a common fallacy aired in such discussions. The insidious implication of such statements is that continued display of the skeleton is intrinsically disrespectful and undignified. In fact, the current presentation of collections at the Hunterian Museum was recognised with a Gulbenkian Prize in 2007 (see: <http://www.thegulbenkianprize.org.uk/2006/shortlist1.htm>). This acknowledges the displays to have been formulated in a very tasteful and care-inspired environment that permits viewing and study by the general public. This allows better appreciation of the body and informs modern and individual notions of health and well-being that are ever more important under the stresses of modern life. One way of showing respect for people is to try to learn about their lives and experiences. Having visited the Hunterian Museum and the Royal College of Surgeons we cannot think of a more dignified repository for this important skeleton, or greater respect than can come from serving humankind by

continuing to contribute to advances in medical science.

Modern medical ethics have been conceived to protect the interests of living people as we move forward as a society. Attempting to apply such values retrospectively to the remains of individuals who died centuries ago (for example citing the 2004 Human Tissue Act and modern debates on organ donation) is frequently inappropriate and will ultimately achieve nothing. As L. P. Hartley (6) said, “The past is like a foreign country –they do things differently there.” Apologizing for the deeds of others long dead will serve only to salve the consciences of the living whilst having no effect on the deceased. In short, we cannot change the past, but it is fundamental to learn from it. We can only change the future and dropping Charles Byrne’s bones into the sea will help no one – not even Charles Byrne and certainly not future generations.

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Book Review: St Pancras Burial Ground. Excavations for St Pancras International, the London terminus of High Speed 1, 2002-3. By Phillip A. Emery and Kevin Wooldridge (principal authors). Gifford, London. 2011. 231 pages, including figures. CD-ROM included. ISBN 978-0-9569406-0-5. £27.95 (hardback).

By Nicholas Márquez-Grant

Under the present-day High Speed 1 terminus at St Pancras International, used to rest the remains of hundreds of deceased within the famous St Pancras Old Church Cemetery. Over 150 years after the last burials, the excavation and analysis of funerary material culture and the skeletal remains of individuals representing a variety of social groups, provide a significant contribution not only to furthering our understanding of both the organisation of the cemetery and funerary customs, but also to providing an insight into the living conditions of 18th- and 19th-century London.

In Philip A. Emery and Kevin Wooldridge’s remarkable, wonderfully produced and enviable volume, the authors and a number of specialist contributors report on the 2002–2003 archaeological excavations of a sector within the Third Ground of St Pancras Burial Ground. The volume focuses on the 1302 burials recorded archaeologically and on the osteological analysis of 715 skeletons, the bulk of which date between 1793 and 1854 AD.

The volume is very informative, clear and well structured, brilliantly illustrated, and in sufficient detail provides the results of the material which derived from the 2002–2003 excavations. This is done by wonderfully complementing the archaeological evidence with information obtained through historical and archival research on this 18th and 19th century

London population sample. This multidisciplinary monograph introduces (Chapter 1) the objectives and nature of the project, the different specialisms involved in the excavation and post-excavation analysis and the methods employed. Chapter 2 provides the geological, topographical and archaeological background and views the cemetery in its historical context. Chapter 3 displays an impressively detailed analysis of cemetery development and layout, and a three-dimensional perspective of coffins and coffin stack sequence. In Chapter 4, the reader learns about the population and has access to biographical information about some of the deceased. In addition, the chapter includes detailed osteological and palaeopathological contributions. In Chapter 5, aspects of funerary culture are dealt with, including coffin fittings, headstones, calligraphy, and botanical remains; whilst Chapter 6 gives an insight into the decades after the closure of the cemetery in 1854. Concluding remarks follow in Chapter 7 and an Afterword touches upon the repatriation of two Frenchmen. The volume is accompanied by a CD-ROM containing supporting specialist material such as a catalogue of tombstones and further osteological data.

Of particular relevance to BABAO members are the contributions by the late William White (pages 112–117 and 155–156) and by Natasha Powers (pages 127–153) in Chapter 4, which no doubt will serve as a good reference and as comparative data. Although the sample represents less than 1% of the buried population, 8.7% of individuals died as perinates and 19.6% between birth and the age of 12 years. At the other end of the scale, the proportion of the population surviving over the age of 45 years was also relatively high at 17%. Sex representation was even. Metric data on stature gave an average of 157cm for females (n=138) and 171cm for males (n=168). Other metrical

and non-metric data are presented for both adults and non-adults. Of academic interest is the named sample based from inscriptions on 100 coffin breastplates. Although detailed statistical analysis would have been required to make it more scientifically sound, of the 96 adults for whom both documented and osteological age could be established, just 11 were placed in an incorrect osteological age category. Whilst dental wear was inapplicable, the pubic symphysis showed to be the best and most consistent. With regard to sex estimation, the nuchal crest was the least reliable in determining male sex and the mandible the least reliable in females. A number of pathological conditions were present including dental disease, DISH, trauma and specific infections such as four definite cases of venereal syphilis. Also present is a brief account of the osteological evidence for dissection, complemented by documentary evidence on health and disease in the 18th and 19th centuries. In these well undertaken analyses, the skeletal remains are able to provide valuable insights into the health and living conditions of that time.

The book's primary strength lies in the fact that, despite the limitations of commercial archaeology and the logistical problems and other constraints in this particular project, the specialists have maximized in as much and as best as possible the information which could be obtained. The information is well documented, elegantly and reliably presented, and may serve as a model to others undertaking work on contemporary cemeteries. An additional strength in my opinion is the natural flow in the book between the archaeological evidence and the historical (documentary) evidence, which is wonderfully complemented bearing in mind the time and budgetary constraints in a commercial archaeological project. The osteological analysis has been undertaken to a high professional standard and the data is

presented admirably including absolute prevalence for a number of pathological conditions and results according to age groups, age and historical date. Considered as a whole, the authors address topics including cemetery development and organisation, social and demographic change, burial practice, funerary material culture, medicine and health.

Perhaps, slightly lacking is a more in depth discussion of the state of preservation of the remains, which appear to include soft tissue on occasions, or a further discussion of some of the pathological conditions; however, the compilation of a more robust and complete record of the skeletal remains was hindered by some of the exhumation operations running alongside the archaeological excavation, which resulted very often in incomplete skeletal recovery as pointed out by the authors.

In sum, the authors ought to be congratulated for a clear, well presented, excellently illustrated, and thoroughly researched project on one of the most comprehensively compiled sources on St Pancras. As far as the sample is concerned, the book certainly brings to light life and death in post-medieval London. The book should raise the interest and curiosity of palaeopathologists, anthropologists, anatomists and medical historians as well as the general reader (including those commuting through St Pancrass!). Overall a significant contribution to post-medieval urban life and death at the crossroads of funerary archaeology, history, osteology and palaeopathology.

Bournemouth University *Durotriges* Big Dig – Winterbourne Kingston

Bournemouth University's research and training excavations of a late Iron-Age to Romano-British period site located on farmland north west of Winterbourne Kingston near Dorchester, Dorset

completed their third season of excavations this summer. Previous seasons have revealed a range of settlement and landscape features, including a late Iron-Age banjo (a circular banked and ditched enclosure with a long, funnel-like entrance), multiple pits and the remains of Romano-British buildings. Seasons one and two resulted in the excavation of 46 burials, most interred in pits across the site and positioned tightly crouched. Season three, which took place during June 2011, revealed a further 25 inhumations, taking the total burial population to over 70 individuals and indicating that the area was a late Iron-Age/early Romano-British burial site of significant scale. Particularly interesting is the high proportion of perinatal individuals amongst the burial population – over 60% of interments were individuals aged under one month at the time of death – and the evidence for potential curation of human remains above ground between death and burial, indicated by the displacement of skeletal elements in some individuals.

Post-excavation analysis is ongoing. Osteological analysis of the human remains excavated so far has recently been undertaken by Anna Rohnbogner and Martin Smith. A fourth season of excavations will begin this summer in order to shed further light on this intriguing site.

The Big Dig fourth season will run during June 2012 and welcomes students of all levels and amateur enthusiasts. For further information on getting involved please see our website: <http://courses.bournemouth.ac.uk/courses/taining-course/the-durotriges-big-dig-2012-archaeology-field-school/short-course/1294/> and Twitter feed: @Durotrigesdig.

**New Masters Degree (MSc) in
Osteoarchaeology, University of
Sheffield**

The Department of Archaeology at the University of Sheffield (UK) will launch a new Masters (MSc) in Osteoarchaeology in the academic year 2012–13. The Masters will combine training in both human and animal bones, two areas of teaching and research in which the University of Sheffield has a long-standing tradition. This is an intensive one-year long course, but it can also be taken part-time over two years. Should you be interested in this course please contact Umberto Albarella (u.albarella@sheffield.ac.uk) or Andrew Chamberlain (a.chamberlain@sheffield.ac.uk) for further details and/or consult the following webpage:
<http://shef.ac.uk/archaeology/prospectivexp/masters/osteoarchaeology.html>.

**New One Day Short Course in
Osteology, University of Sheffield**

In 2011, members of our current postgraduate research team launched a new one day short course in the Department of Archaeology at the University of Sheffield (UK), “An Introduction to Human Osteology”. This course is aimed at individuals working in outdoor occupations, the rescue services, field archaeology and museums, or for those wanting a basic taster course in human and comparative osteology. The course is taught in our main osteology laboratory using the department’s human skeletal reference collection, and aims to provide participants with a basic overview of human skeletal anatomy in order to convey understanding and recognition of the various skeletal elements, and help gain confidence in dealing with skeletal

material. If you are interested in this course, please contact Lauren McIntyre (L.j.mcintyre@sheffield.ac.uk) or Isabelle Heyerdahl-King (prp09ish@sheffield.ac.uk).

From Cemetery to Clinic
*By Andrew Wilson and Jo Buckberry,
University of Bradford*

From Cemetery to Clinic project, funded by JISC, was set up to create a unique interactive resource on the pathological manifestations of leprosy (Hansen’s disease). It is led by Andrew Wilson, with Jo Buckberry, Chris Gaffney (Archaeological Sciences) and Hassan Ugail (Centre for Visual Computing) and in collaboration with Chichester District Museum and archaeologists at Chichester District Council. Keith Manchester, Rebecca Storm, Alan Ogden, Andy Holland, Tom Sparrow and Chris Watkins worked together to deliver a really exciting, but very short project.

From Cemetery to Clinic produced 3D data and palaeopathological descriptions of leprosy in skeletons excavated from the medieval leprosarium of St. James and St. Mary Magdalene, Chichester in Southern England in 1986-87 and 1992 by Chichester District Archaeological Unit. The leprosarium was founded circa 1118 AD to care for eight leper brethren and was used as a leprosarium until at least 1418. Of the 384 individuals excavated a minimum of 75 individuals show skeletal lesions which are likely to have been due to leprosy. The Chichester collection is the only large scale excavated and published archaeological assemblage of leprosarium patients in the UK, and one of a handful worldwide. None of the child skeletons from Chichester had definitive skeletal evidence for leprosy, and therefore this archive is only concerned with adult skeletal material.

By combining new clinical descriptions alongside the 3D data, this resource offers the opportunity to inspire an emotional response, understand past human experiences, and offer people the chance to come face-to-face with the realities of the disease and how people in the past may have responded to the social stigma of the disease. The 3D digital archive preserves fragile dimensional information that is otherwise under threat from attrition through handling and is aimed as a virtual training and research tool for clinicians, human osteologists, archaeologists and the wider public.

At the moment the website is still under construction with reduced functionality; however, all of the textured 3D models are available to view and download, as are an important collection of clinical radiographs of individuals with leprosy. The website will migrate to the new server in the next few weeks, and with this move we should have a much more user friendly site, and will be able to launch the interactive GIS site plan. If you have chance to play with the web site and have any suggestions, we would appreciate knowing them – please email 3Dbones@bradford.ac.uk, and we will collate comments and use them to develop the web site further (<http://www.barc.brad.ac.uk/FromCemeterytoClinic/index.php>).

Digitised Diseases: informing clinical understanding of chronic conditions affecting the skeleton using archaeological and historical exemplars

*By Andrew Wilson and Jo Buckberry,
University of Bradford. Email:
3Dbones@bradford.ac.uk*

A joint project between the University of Bradford, Museum of London Archaeology and the Royal College of Surgeons, led by Andrew Wilson, was awarded £750K by JISC and kicked off in November. ‘Digitised Diseases’ will

produce a web-searchable 3D record of chronic diseases that affect the skeleton using archaeological and historical exemplars from world-renowned collections curated by the BARC, Museum of London Archaeology and the Royal College of Surgeons. The project will result in the Mass Digitisation of pathological type-specimens using textured 3D laser scans of skeletal elements, with associated clinical descriptions. These will be supported by digitised x-radiographs, and scanned historic medical drawings, accounts and photographs.

The traditional viewpoint is that there is no substitute for handling osteological material in training and research. Paradoxically, the skeletal elements that are most commonly studied are usually the most altered, often the most fragile, and ultimately the most prized. This project will therefore play a crucial role in conserving a resource that is otherwise under threat from handling attrition and will provide a sustainable resource which may serve as the primary record if the eventual reburial of archaeological material is required, an issue likely to increase due to practical limitations on long-term storage of large skeletal assemblages.

We will also trial innovations including the integration of 3D surface data with CT-scans of bone microstructure to produce animated cut-aways and fly-throughs where relevant to understanding the underlying bone change (e.g. osteoporosis). Together these digitised records integrated with clinical descriptions will make it easier and more effective to view, manipulate and safeguard these valuable type-specimens. Integration of this data with current clinical knowledge of the specific diseases will permit detailed understanding of the progression of the disease.

Follow the project on Twitter, Facebook or our blog: @digidiseases
www.facebook.com/digidiseases
<http://digitiseddiseases.wordpress.com>

Poulton Research Project *By Ray Carpenter*

The research and training excavation at Poulton in Cheshire (<http://www.poultonproject.org>) has continued, with 77 skeletons disinterred from the area of the medieval chapel during the 2011 season. This brings the total excavated since 1995 to 550 articulated skeletons. The project has again welcomed students studying a variety of osteology- and archaeology-related courses, who have been able to gain direct experience in both excavation and post-excavation treatment of human remains. This year, those students came from France, Hong Kong, China, Malaysia, Australia, Holland, Switzerland, the USA, Spain and all parts of the UK.

From this year's crop of anomalies, along with the usual pathologies and trauma, we have:

- A skeleton with an arrowhead embedded in the chest cavity. This skeleton and the associated bodkin are being examined as part of an Honours project.
- A skeleton with an extra thoracic vertebra. This is the third skeleton with extra vertebrae.
- Another 'reversed' burial, that is, with its head at the east end. This is our third.

Our assemblage was examined this year as part of three external academic projects. Two MSc students from the University of Edinburgh used them as part of their dissertations and another from the University of Nottingham used them as part of their final year BSc dissertation. We have agreed further external analysis

during 2012 by post-graduate students from London and Winchester universities.

In 2012 we will again try to obtain funding for the radiocarbon dating of a set of carefully selected skeletons. This would enable us to confirm the period during which the graveyard was in use and provide valuable contextual evidence for the rest of the archaeological programme. We will publish our next report summarising the basic analysis (assessment of sex, age at death and stature) of all the skeletons up to the end of the 2011.

Thanks are due to the School of Natural Sciences and Psychology at Liverpool John Moores University, who have provided considerable help to the project in this and other areas. We also gratefully acknowledge our other academic collaborators in the School of Archaeology, Classics and Egyptology at the University of Liverpool.

MUSEUM REPORTS

Centre for Human Bioarchaeology, Museum of London *By Jelena Bekvalac* Curator of Human Osteology

The happiest news for the Centre this year is to be able to share with everyone the birth of a lovely baby girl for my colleague Rebecca. I am sure that in no time at all she will be a budding osteologist.

The Centre has been busy again this year, with many students and researchers coming to study the large collections from the Roman, Medieval and Post Medieval periods. The subjects researched covered a wide range of interesting topics on teeth and bones, utilising on occasions a variety of technology including a robotic arm for taking 3D measurements and most fortunately a CT scanner at Moorfields for

a project investigating cribra orbitalia. It was very interesting whilst at the annual BABAO conference to hear and see some of the results of research from the collections and the particular popularity of some of the Post Medieval sites.

There were a number of study days throughout the year for students both national and international. The Bare Bones evening course was again run successfully with a good assortment of participants from a broad spectrum of interests and backgrounds. We participated in the newly established Finds Processing Course set up by the London Archaeological Archive Research Centre (LAARC) of which we are a part. Our volunteers continue to do sterling work and are greatly appreciated. We also were able in the summer to have some work experience students with us and hopefully have set them on a course for future osteological endeavours.

There was an array of outreach events for families and adults that the Centre was involved with here at the Museum of London and Museum of London Docklands. The events always prove extremely popular, with everyone fascinated by the skeletons and most particularly diseases. One of the main outreach events is the annual Festival of British Archaeology which this year was Roman in theme and we found ourselves sharing space with some splendid gladiators who were fighting at the gladiatorial re-enactments at Guildhall.

A rather novel outreach event we were involved in was a Late Night event at Wellcome, 'Get Mouthy', that had a glorious assortment of events and people associated with not unsurprisingly the mouth, and a delightful advertising lead of "Mixed morsels all about the mouth". The dental examples from our teaching collection showing dental health from the past proved to be very popular with the visitors and certainly made them think

about looking after and cleaning their teeth.

Collaboration is still ongoing with the digital x-ray project at St Bride's with Jerry Conlogue from Quinnipiac University spending several days x-raying in the depths of the crypt. The collection of DICOM standard radiograph images is steadily increasing and will hopefully prove to be another useful resource for research in the future. After hearing the paper presentation by Colin Smith "Palaeodiet at a weekly scale through carbon isotope analysis of amino acids from hair using LC-IRMS: preliminary studies on Chinchorro mummies" at BABAO, Colin kindly agreed to take some samples of hair for analysis from a small sample of the individuals at St Bride's and we eagerly await the results.

Continuing on the theme of St Bride's I gave a talk at the church in March to a lovely audience bringing together archaeological and historical sources as well as my analysis of the crypt individuals and previous osteological research. The plastic skeleton from the Centre, Dr W was a big hit as the meet and greet before the talk, a continuation of his popularity from previous outreach engagements where for one he even had his own blog!

There was a lot of media interest after recent publications appeared in PNAS (Scheunemann et al 2011) and Nature (Bos et al 2011), with the ancient DNA results derived from samples of a number of individuals from the East Smithfield Black Death catastrophe cemetery. As a consequence I found myself on various occasions on the TV talking about the Black Death. One of the other talks I had the pleasure of giving in 2011, was to the West Essex Archaeological Society in relation to the East Smithfield site and I was pleased to be able to share the fascinating and revelatory results from the DNA

research. I enjoyed as well being able to attend the annual meeting of the Hampshire Field Club and Archaeological Society held at Winchester where I was also kindly invited to speak about the Centre and the skeletal collections that we curate.

Although Rebecca has been on maternity leave she is still involved and working on a variety of research projects, most notably a number of projects relating to the Roman collections that will ultimately provide a valuable insight and addition to the proposed new Roman galleries here at the Museum of London.

We look forward to welcoming more students and researchers with their interesting studies to the Centre in 2012 and with the numbers so far booked we will certainly be kept busy (as well as the trolley). My main focus of work for 2012 will be on an exhibition here at the museum opening in October 2012 until April 2013 – Doctors, Dissection and Resurrection Men – based upon the excavations by MoLA at Royal London Hospital and the impressive analysis and research of my colleagues Natasha Powers, Louise Fowler and Don Walker. It is a most interesting site and period of time that will hopefully appeal to a wide audience and BABA members.

Museums of the Royal College of Surgeons of England

By Jane Hughes, Carina Phillips, Martyn Cooke and Milly Farrell

The Hunterian Museum

Public interest in viewing the museum collections shows no sign of diminishing, as visitor numbers continue to rise, with a 160% increase in visits since the reopening of the museum in 2005. 2011 was another record year, with 70,000 people visiting the museum.

Engaging the public with our collections has continued, with family-friendly workshops held in the school holidays throughout 2011. The ‘Long in the Tooth’ workshops were developed and delivered by Milly Farrell together with our honorary curator of the Odontological Collection and a retired dental surgeon volunteer.

Animal skulls and teeth were used alongside replica human material, dental instruments and implants to show the importance of teeth across the different species. Around 450 children and their families joined in the fun. To extend our reach further, one of the workshops was speech-to-text interpreted by STAGETEXT for Deaf and hearing impaired children and their families.

Find out more about our public programmes at www.hunterianmuseum.org

Jane Hughes, Head of Learning and Access; jhughes@rcseng.ac.uk

The Wellcome Museum of Anatomy and Pathology

The WMAP houses over 5,000 specimens demonstrating the important aspects of human anatomy and pathology. The collections include wet fluid preserved specimens, dry skeletal and dental material, histological slides, X-rays and thin body sections. It is an important resource for anyone working with human remains.

In addition to other medical-related professionals and trainees the museum has continued to support the UCL Skeletal and Dental Bioarchaeology and Forensic Archaeology MSc courses which make good use of the large skeletal and dental collections housed in the museum.

Over the last year the museum has continued to add new disarticulated

skeletal material to the handling collections. This has mostly been donations from the Red Cross and St John's Ambulance. This additional material now allows visitors to be 'self-sufficient' when using the skeletal handling collection, rather than having to rely on museum staff to provide material from storage. 2012 will see further change in the completion of the reorganisation of the museum layout. This includes the introduction of a new dental section, more paediatric specimens and a small collection of forensic preparations.

A series of early evening 'Light Box' lectures have been a major success during the latter part of 2011. The lectures have primarily been aimed at medical students and affiliates of the college. The lectures combined the expertise of both anatomists and surgeons and aimed to highlight the importance of understanding anatomy in three dimensions. The tutors put great emphasis on the use of preserved specimens to aid interpretation. In connection to such projects, the museum is currently evaluating a SETRED 3D system, which creates 3D images without the need for tinted glasses. This equipment will aid further education at the College.

The RCS conservation unit has also been very active throughout 2011 and has been involved in projects involving arguably two of the most famous skeletons in the world: Joseph Merrick ('The Elephant Man') and Charles Byrne ('The Irish Giant'). The team were involved in assessing, packing and transporting the articulated skeleton of Joseph Merrick for CT scanning as part of a Channel 4 documentary investigating Merrick's condition, which was broadcast earlier in the year. The team also removed two molar teeth from Byrne's mandible as part of a major investigation into Gigantism and the genetic coding that results in the development of a Pituitary Adenoma. This breakthrough research will enable clinicians to intervene at an early stage of

tumour development and give an improved quality of life to many patients. There will be a more detailed write up of these projects at a later date.

To book a visit or for more information visit:

www.rcseng.ac.uk/museums/wellcome

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Martyn Cooke, Head of Conservation;
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The Odontological Collection

During 2011 the Odontological Collection has formed the focus of a variety of external research projects. The over 11,000 human and animal cranial specimens display a wide variety of dental development and pathology. The human material places a focus on cranial development from foetus to adult and the various malformations that can ensue. As a proportion of these 3,000 human specimens are archaeological in acquisition, dating from the Roman to late medieval eras, osteoarchaeologists are encouraged to refer to the collection.

External research undertaken in 2011 from a bioarchaeological perspective includes further investigation into dental wear and eruption as age markers. The Anglo Saxon assemblage of Breedon-on-the-Hill contains a wide age range from a single context. 50 of these skulls were loaned to Kings College London during mid-2011 for radiographic imaging. Age assessment through dental wear generally proves to be an inaccurate method in bioarchaeology. It is hoped that through such investigations improvements can be made in the ageing techniques applied to the dentition.

The comparative anatomy within the collection consists of over 7,000 animal skulls, teeth and skull portions. From

amongst this, the diverse non-human primate collection has once again proved of use to evolutionary anthropologists throughout 2011. Morphometric research has been carried out on skulls from several species of Old World primate, in studies ranging from conservation to the assessment of evolutionary variations in cranial morphology. Anthropological research undertaken by UCL involved the study of morphological patterns between *Homo sapiens* and a range of non-human primates, focusing on the basi-cranium and mandible. Other studies carried out in 2011, which may prove of interest to zooarchaeologists, include the analysis of mammoth tooth fossils excavated from the English coastline and the species identification of ivories used in early dentures.

Milly Farrell, Curator of the Odontological Collection; mfarrell@rcseng.ac.uk.

EXCAVATION AND ANALYSIS OF HUMAN REMAINS IN 2011

Archaeological Burials Company *By Sharon Clough*

After many years at Oxford Archaeology Sharon is now working freelance as a Human Osteologist, burial archaeologist and coffin fitting specialist. The following reports have been completed for Allen Archaeology:

Lincoln College, Lincoln – 27 Romano-British Skeletons (5 subadults and 22 adults).

Bishops Palace, Lincoln – 1 Anglo-Saxon Neonate.

Sharon has also been involved in the human bone audit at the Oxfordshire Museum Resource Centre, which holds all the human remains excavated in Oxfordshire. The resource centre has some

excellent collections, many excavated in the 1960s and 70s, which would benefit from re-analysis and publication.

Osteology at AOC Archaeology Group

By Rachel Ives and Melissa Melikian

2011 has been a busy year for us at AOC Archaeology Group. We have completed several excavations including a large post-medieval burial ground in London and two Roman burial grounds, one in London and one in Winchester. If anyone would like further information on any of the sites outlined below, please contact us.

*St. John's Church of England School,
Bethnal Green, London*

2011 saw us undertake a large-scale six month long excavation at St. John's Church of England School in Bethnal Green, London (PGV10). Over 1000 post-medieval skeletons were excavated in advance of the construction of a nursery school at the site. The burials were tightly dated to between 1840 and 1855 and were made in a privately-owned and unconsecrated burial ground. A total of 20,000 burials were originally interred in the ground, which measured over seven acres. The excavated sample represents approximately 10% of the original burial ground. Burials were intensively stacked in the grave shafts; some were up to 7.5m deep and layers of multiple burials were found, including layers of up to 20 burials in some grave shafts. Twenty-one wooden grave markers were also discovered, which mimic the style and decoration of gravestones and appear to be a rare find from post-medieval London.

Work is continuing on the post-excavation assessment of the St. John's skeletal assemblage at present. A total of 1033 skeletons were recovered and 71% of these were juvenile burials. This reflects the high rate of juvenile mortality documented for the parish and possible original

cemetery organisation. Pathological conditions include those typical for the post-medieval period, such as high rates of vitamin D deficiency rickets and infectious conditions, such as tuberculosis. Shoulder and elbow trauma are also present as are joint diseases such as rheumatoid arthritis. A partial maxillary denture plate was also found still *in-situ*.

Harper Road, Southwark, London

Eleven Roman burials were excavated from Harper Road, Southwark, London (HPZ10). The burials formed part of the 'Southern' Roman cemetery of Londinium. The Roman burial activity only appears to date to one period which was identified as being the 2nd to 3rd to 4th centuries AD. Adjacent linear ditches across the site indicated Roman landscape management had taken place but without heavy utilisation of the site, likely due to the cemetery encroachment. The majority of the burials were adult males (n=7), with one female and three individuals of undetermined sex. Truncation and taphonomic variables such as weathering and root etching had affected bone surface preservation and skeletal completeness. Pathological evidence for accidental trauma, physically active lifestyles and poor dental hygiene was present in the adults assessed.

Milnthorpe, Sleeper's Hill, Winchester

Six Roman inhumation burials and a cremation vessel containing burnt and commingled human and animal bone were excavated from Milnthorpe, Winchester (WINCM AY 479). Iron nails demonstrated that at least one of the burials had been interred within a wooden coffin. Pottery recovered from the site indicated that the burials dated to the 2nd-3rd century AD. The burials comprised of five adult males and one adolescent and displayed a range of pathological processes, including dental diseases, minor non-specific infections, indicators of repetitive physical activity and

degenerative joint changes. Two of the adult males were found buried wearing hobnail boots. An iron knife was also found by the feet of one burial.

Canterbury Archaeological Trust

By Amanda Bailey

Halletts Garage, St Dunstan's Street, Canterbury

In early 2011 the Trust completed the excavation of part of an extra-mural Romano-British cemetery in Canterbury. The cemetery at the former Hallet's Garage site the corner of St Dunstan's Street and Station Road West was likely in use from the third to the fourth century. The excavation yielded the largest skeletal assemblage yet to be excavated in Canterbury where 137 graves were identified, of which 125 contained skeletal material. The cemetery would have extended beyond the limits of the current site and had been disturbed by activity in later periods. There was evidence for coffins in the form of soil stains and iron nails and some degree of organisation in terms of common alignment and grouping of graves (e.g. the juveniles (children under 12 years) were found predominantly in one area of the site). 42 skeletons were excavated in the first phase of works and initial assessment of these indicates a high percentage of sub-adults (almost 30%) but no infants under one year. Palaeopathological assessment suggests that trauma may be significant, as is *Cribrum Orbitale* in the sub-adults. Though present, spinal disease and osteoarthritis are not common, possibly reflecting the relatively young age of this group. Detailed analysis of the complete assemblage will be completed in early 2012.

Heritage Burial Services, Oxford Archaeology – Summary of work 2011

By Helen Webb

Staff

Heritage Burial Services, Oxford Archaeology has been a busy place to be over the past year. Louise Loe, head of the department, was welcomed back in February 2011 following maternity leave. Ange Boyle, who headed the department whilst Louise was away, has been working with us on the Weymouth mass grave assemblage, and Ceri Boston, former Assistant Head of the department, continues to work on the Greenwich Royal Naval Infirmary assemblage as part of her PhD. The full-time staff members are Mark Gibson and Helen Webb. Brian Dean, from our Fieldwork department, has also been working with us on the analysis of the Thameslink assemblage.

2011 Projects

Redearth, Darwen, Lancashire

The analysis of 142 skeletons, recovered from the former Redearth Primitive Methodist Chapel burial ground, Darwen, was undertaken from May to August. The assemblage comprised a high number of young children (1–5 years), and a higher than expected number of prime adults. A wide range of pathological conditions were noted, and the rate of non-specific infection looks to have been high. Of particular interest was a young child skeleton who exhibited numerous congenital deformities involving the skull and neck region, and may have been suffering from Crouzon's syndrome. The analysis of the results and reporting is currently under way, with publication planned for later this year.

Park Street, Thameslink

A total of 331 skeletons, from a burial ground associated with St Saviour's Alms

Houses, Southwark, were analysed from October to December. The demographic profile of the assemblage is interesting, with the very young (neonates and infants) under-represented, but young adults the most prevalent age category. The numbers of adolescents and prime adults were also high. Multiple cases of rickets deformity were noted, and probable cases of syphilis were seen in two skeletons – a juvenile with saber-shins and an adult exhibiting numerous gumma lesions. Analysis of the osteological data and report writing is to continue in 2012.

Sutton Courtenay, Oxfordshire

Archaeological works at Sutton Courtenay, one of OA's long-running gravel quarry sites, continued in 2011. The latest excavations revealed a cluster of six inhumations, prone and supine, probably all Roman in date. One of the prone skeletons, estimated to be male, had been wearing hobnailed shoes with tiny (c. 1mm) copper alloy rivets found under the tops of the feet. The rivets are a rare find and are thought to have been a decorative adornment to the tops of the shoes. A search for parallels is under way. Perhaps the highlight of the 2011 works, however, is the discovery of a burial in the centre of a barrow. The skeleton, probably male, was in a crouched position, with a bronze dagger placed close to the head.

Brunel Court, Preston, Lancashire

An assessment of 22 medieval skeletons from a monastic cemetery at Brunel Court was undertaken in June. Despite the incomplete and highly fragmentary nature of many of the skeletons, it could be established that they comprised a mixture of males, females and juveniles. The presence of females and children in the monastic cemetery indicates that the site may have been used as an infirmary or hospice. Assessment of the remains found joint disease to be a common occurrence. One individual, a mature adult, exhibited severe pathological changes to the right

hip joint. Possible diagnoses include Perthes disease or trauma.

Weymouth Relief Road Project. Ridgeway Hill mass burial pit

Full analysis of the 10th/11th century decapitated skeletons that were found in a mass grave in Weymouth started in the autumn. Isotope analysis has indicated that the individuals originated from a variety of places within the Scandinavian countries (as reported in last year's issue). Once osteological analysis is complete, further isotope samples will be analysed. A publication is planned for later this year/early 2013.

Fromelles, France

In April 2011 Louise Loe met with members of the identification commission at Australia House, London, in a continuing effort to identify some of the remaining unknown soldiers recovered and analysed by OA in 2009. The meeting led to the third annual Joint Identification Board which concluded with a further 14 Australian soldiers being identified.

The client report on Oxford Archaeology's work at Fromelles was submitted in April 2011. Plans are now being made to publish the work.

Oxford Archaeology's Digital Library
(<http://library.thehumanjourney.net/>)

Members may already know that our grey literature client reports and supporting archives can now be accessed online via our digital library. To date, the focus has been to upload our most recent material, but the ultimate goal is to upload all of our client reports to this repository.

Grey literature

St Mary's Church, Wendover (watching brief report)

19 post-medieval skeletons and two brick burials vaults revealed during the intramural ground reduction.

All Saints Church, High Wycombe (watching brief report)

Two brick burial vaults, a brick shaft grave and a quantity of disarticulated human bone, revealed during the intramural excavation of service trenches and manholes.

St Mary's Church, Guildford (watching brief report)

Two post-medieval skeletons (an adult and a juvenile) revealed during the excavation of service trenches and soakaways in the churchyard.

Birch Coppice, Tamworth (specialist report on the human remains, for inclusion in watching brief report)

Five un-urned cremation deposits (undated). At least one deposit comprised juvenile remains, and two comprised adult remains, one of which was possibly female. No age could be assigned to the other two deposits.

York Osteoarchaeology Ltd

By Malin Holst, Anwen Caffell and Katie Keefe

York Osteoarchaeology Ltd undertakes skeletal excavation and analysis. Anwen Caffell is also an Honorary Research fellow at Durham University and Malin Holst is a tutor at the University of York and both are teaching at the universities. Anwen Caffell has spent 2011 analysing Roman skeletons, as well as undertaking further analysis of post-medieval skeletons from Fewston (BABA Review 2010), together with post-graduate students from the University of Durham. Malin has been analysing medieval skeletons from a nunnery from York.

Pant-Y-Butler, Llangoedmor, Cardiganshire, Dyfed Archaeological Trust Ltd by Katie Keefe

Two primary unurned cremation burials in different Bronze Age barrows appear to have been disturbed by later burials, one of which was a secondary inhumation with a circular jet bead necklace and the other was a cremation burial. The inhumed individual was badly preserved and was no older than 21 years.

All Saint's Church, Low Catton, East Yorkshire, Geoff Neal Roofing Ltd by Katie Keefe

During excavation prior to drainage works at Low Catton church, five partial skeletons were excavated by York Osteoarchaeology Ltd. Three of these were adults, and two were juveniles. Analysis of the surviving dentitions revealed that oral hygiene standards were low amongst the population.

Bourton Business Park, Bourton-on-the-Water, Gloucestershire, Gloucestershire County Council Archaeology Service Environment Department by Katie Keefe

Four articulated skeletons and two disarticulated assemblages included a mature adult male (Mid to late Bronze Age), a Romano-British young adult female, a Iron Age double burial of a child between the age of seven and eight years and an adult of unknown sex. Two discrete deposits contained partial skull fragments, from an adult male (Iron Age) and female (mid Bronze Age).

The mid to late Bronze Age mature adult male had an infection of the mandible and a further inflammation was present on the sacrum and a fractured rib. The Bronze Age female adult skull had cribra orbitalia. The Iron Age child had a respiratory infection. The Romano-British young adult female was considerably shorter than her contemporaries and exhibited mild developmental defects in her spine and a

deformed supernumerary tooth erupting from between her upper incisors.

Gloucester Quays, Gloucester, Gloucestershire County Council Archaeology Service Environment Department by Katie Keefe

Two skeletons interred in the same grave dating to the 11th to 12th century were a male and female mature adult. Three further adults and two non-adults were identified in disarticulated human remains. Both articulated adults had mild degenerative joint disease. The male also had lamellar bone on the legs and the female had woven bone on her ankles and the inner table of her skull. The male had fractured a rib and collar bone. A disarticulated skull revealed signs of repeated sharp force trauma, as did a distal femoral shaft fragment.

Old Dower House, Brockhampton, Gloucestershire County Council Archaeology Service Environment Department by Katie Keefe

A grave orientated north to south contained the flexed remains of an early Roman juvenile aged between two and three years. A neonate skeleton in a similar flexed position truncated the western limit of the child's grave. Pathological lesions on the remains of the child suggest that it may have experienced dietary deficiencies and underlying chronic infections.

Middlemore Farm, Daventry, Northamptonshire, Northamptonshire Archaeology by Katie Keefe

A Roman skeleton was buried prone, with the skull between the knees. Unfortunately, poor preservation meant that it was impossible to determine the techniques of skull removal. The skeleton was a mature adult female with degenerative joint disease in the spine and several button osteomata. The dental health of the individual was worse than the Roman norm, with many cavities.

Central Woolgrowers Ltd, Old Greens Norton Road, Towcester, Northamptonshire, Northamptonshire Archaeology by Malin Holst

Two urned cremation burials dating to the early Roman period and two unburnt disarticulated human bone assemblages were found at Towcester. The urns contained adults, one of whom was male.

Easington to Ganstead Pipeline, East Yorkshire, Network Archaeology Ltd by Katie Keefe

Seven Romano-British inhumation burials and three Roman unurned cremation bone burials included three adults, one of whom was female and two were male. A juvenile aged between three and four years and two perinates were also recovered. All cremation burials contained the remains of adults. Cribra orbitalia was common. A gastrointestinal bacterial infection (actinomycosis), tuberculosis and possible brucellosis were noted in the remains. More common pathological conditions observed included minor congenital defects, inflammatory lesions on the shins, chronic sinusitis and mild degenerative joint disease.

Hardwick to Marsh Gibbon Pipeline, Buckinghamshire and Oxfordshire, Network Archaeology Ltd by Katie Keefe

Two inhumations were found in different parts of the pipeline. A mid Iron Age skeleton lay in a crouched position and an early Roman individual was buried in a supine extended position. The skeletons were both adults; both suffered poor oral health.

Tadcaster Castle, Tadcaster, North Yorkshire, Towton Archaeological Survey Project by Katie Keefe

A single skeleton was excavated from Tadcaster to determine whether it was related to the Battle of Towton, 1461. This was a mature adult female, of unusually tall height (173.5cm) with osteoarthritis in her spine and mild

degenerative joint disease in her left shoulder. She also had an additional sacral vertebra and numerous large dental cavities and moderate calculus deposits on her teeth.

Edge Hill, Warwickshire, Warwickshire Museum Field Archaeology Projects Group by Katie Keefe

Four skeletons, radiocarbon dated to 650 to 820 AD, included a juvenile aged between ten and twelve years, two mature adult probable females, and a young middle adult male. One of the females suffered from infection of the left forearm and chronic sinusitis. The juvenile suffered from numerous infections of the upper jaw, ribs and arms, possibly as a result of hypertrophic (pulmonary) osteoarthropathy or tuberculosis. Cribra orbitalia and DEH were present in all individuals. One female had osteoarthritis of the right shoulder and the spine. The skeletons had a high prevalence of calculus and ante-mortem tooth loss, but a low prevalence of caries.

Rotherham Minster, Rotherham, South Yorkshire, West Yorkshire Archaeological Services by Katie Keefe

Sixty skeletons dating from around 1780 to 1850 from Rotherham Minster were analysed. Males and females were almost equally represented. The mortality rate of the adults rose with age. Twenty-four non-adults were found, including mostly infants, young juveniles and adolescents. The population exhibited much palaeopathological evidence for childhood stress in the form of infectious disease and malnutrition. Evidence for scurvy and rickets was widespread in the infants and young juveniles. Evidence from those surviving the episodes of stress suggested that female children were more likely to survive than male children, as seen in the form of dental enamel hypoplasia in the teeth and cribra orbitalia.

Evidence for a lung infection, possibly tuberculosis, was noted in six adults and

three of the children. Two further individuals had widespread inflammatory lesions, perhaps also indicative of tuberculosis. Sinusitis was more prevalent than the post-medieval average. Evidence for trauma was largely observed in the form of rib fractures, although two long bone fractures and three finger/toe fractures were also observed. Ossified haematomas were noted in two individuals. Three cranial injuries, only one of which showed evidence for healing, may have been the result of inter-personal violence or could have been caused by a work-related accident.

Clear patterns could be observed regarding degenerative joint disease, as to which parts of the skeleton were affected in males and females. Equally, osteoarthritis showed distinct patterns for the sexes, with males suffering from osteoarthritis of the neck, hip, wrist and elbow, while females had osteoarthritis in the shoulder and knee. There was one individual with possible Paget's disease and an old middle adult female with *hyperostosis frontalis interna*. Congenital anomalies were noted in several individuals; the most severely affected was a young adult female with a malformed skull and face.

Dental health was poor, particularly in the females. Almost the whole adult population had dental plaque concretions on the teeth, affecting two thirds of teeth. Cavities were noted in all adults and a third of the teeth. Dental abscesses affected half of the adult population and almost double the tooth positions than the post-medieval average. Ante-mortem tooth loss was very common and four individuals had lost all their teeth during life, with a quarter of all adult teeth lost.

Newbridge Quarry, North Yorkshire, Archaeological Services WYAS by Katie Keefe

Three inhumation burials were found in cists and 23 unurned cremated burials

dated from the mid or late Iron Age to the late Roman period. Interestingly, cremation burial continued until the late Roman period and was practiced alongside the more commonly seen later Roman burial method of inhumation. The inhumations consisted of adults, including a possible female, a possible male and an individual of undetermined sex. The cremated assemblages weighed from a few grams to over 800g. All but one of the cremation burials contained the remains of adults. In this case the burial contained the remains of a child aged between five and six years and an individual older than thirteen years of age.

Maiden's Grave Farm, Burton Fleming, Driffield, East Yorkshire, Archaeological Services WYAS by Malin Holst

A single human skeleton was found in a rectangular pit that lay off centre within a square barrow in a crouched position on its left side, in a south to north orientation. The skeleton was a poorly preserved juvenile, aged eight to nine years old.

Ripon House, Ripon, North Yorkshire, Archaeological Services WYAS by Malin Holst

Three assemblages of late medieval disarticulated human bone consisted of a minimum number of seven individuals, including two adults, an adolescent, two juveniles, an infant and one neonate. One adult was a probable female. Degenerative joint disease, Schmorl's nodes, spondylolysis, two rib fractures and chronic sinusitis were observed. The frontal bone of a neonate showed evidence for a healed blunt force injury, which had caused subsequent infection, with several infectious lesions, one of which entered the eye orbit. The inner and outer surface of the skull exhibited infectious lesions that were active at the time of death.

Ripon Cathedral, Ripon, North Yorkshire, York Archaeological Trust by Malin Holst

A medieval disarticulated human bone assemblage from Ripon Cathedral revealed an MNI of four individuals; an old middle adult female, a mature adult male, a juvenile and an infant. The majority of the remains recovered were thought to comprise of the two adults. The female had suffered from a severe inflammation of the lower limbs and distal left radius, and bilateral healed blunt force trauma to her forehead. Both individuals had mild degenerative joint disease in the elbows, hips and ankles.

DEPARTMENTAL REPORTS

Bournemouth University

By Lizzy Craig-Atkins

2011 has been another successful year for staff and students at Bournemouth with highlights including the introduction of a new curriculum at postgraduate level, the extremely successful introduction of a new World War 1 theme for our mass grave short course and continued involvement of staff and students in international research and initiatives in biological and forensic anthropology, palaeoanthropology, evolutionary biology, osteoarchaeology and forensic archaeology.

Staff

Karina Gerdau-Radonic continues her research into pre-Columbian Andean mortuary treatment in Peru. She is currently working with Proyecto Arqueológico – Taller de Campo ‘Lomas de Lurín’, directed by Dr. Krzysztof Makowski of the Pontificia Universidad Católica del Perú on two projects: analysing the material from Pachacámac (c. 1000–1532 AD); and conducting further analysis of the remains of Tablada de Lurín (BC 200–200 AD) with Dr. Gwenaëlle Goude of the University of Provence (France), and Dr. Bastien Llamas

of the University of Adelaide (Australia). Karina also continues her work with Dr. Alexander Herrera of the Universidad de los Andes (Bogotá, Colombia) at the site of Keushu (c. 1000BC–16th century AD).

Ian Hanson has continued to work for ICMP in Iraq 2009–2011 with Bournemouth Forensic Archaeology graduate James Fenn developing forensic anthropology and archaeology training programmes and setting up forensic teams to investigate mass graves. From January 2012 Ian will be working as Deputy Director of Forensic Science for Archaeology and Anthropology with ICMP. In addition to his international roles, Ian has contributed to Forensic Regulator expert bodies. Along with Paul Cheetham (Senior Lecturer in Forensic Archaeology), Ian has sat on the Forensic Archaeology Expert Panel of the IfA.

Amanda Korstjens works on several projects related to primate behaviour and ecology. She recently was invited to present her work on primate distribution patterns and climate change at the PSGB/BIC meeting in Bristol and presented at the German Freilandtagen in Göttingen, where she was interviewed for North German National radio (<http://www.ndr.de/info/audio98195.html>). Apart from her research on primate mating strategies, Amanda is also looking into the comparative analysis of infant abuse with our UG forensic students and BU MSc graduate Anna Rohnbogner.

In addition to his duties as Deputy Dean, Holger Schutkowski has recently received a British Academy grant to undertake isotope analyses of the interrelationship between diet and status in early medieval populations of the Alamannia. Holger was also elected Chair of Advisory Panel on the Archaeology of Burials in England (APABE).

Martin Smith continues work on several projects including publication of the re-analysis and redating of the Wor Barrow archive originally excavated by Pitt-Rivers in the 1890s and analysis of late Iron Age and Romano British remains from the School's ongoing *Durotriges* excavation project in central Dorset. Martin is also in the latter stages of producing a co-edited volume with Chris Knüsel on the contribution made by human remains to the understanding of human conflict.

John Stewart is continuing his involvement with Liege University excavating Trou Al'Wesse and is now concentrating on the Pleistocene levels including the Aurignacian and Mousterian. In addition, he is involved in a number of the AHOB excavation projects such as Ebbsfleet and Happisburgh.

Elizabeth Craig-Atkins took over supervision of the excavation of human remains at our training dig this summer with the support of Anna Rohnbogner, overseeing the excavation and recording of a further 25 Iron Age/Romano-British burials. Additionally, as part of her role in curating the human skeletal collections at Bournemouth, Elizabeth has recently completed a project to create an online catalogue of our collections to facilitate access by outsider researchers. Her current research has included an osteological assessment of a mirror burial from Langton Herring, Dorset, as part of a BU project.

Last year, Stephany Leach left us after the end of her fixed term contract as a replacement for Ian Hanson on sabbatical. We wish Stephany all the best in her future endeavours. This September we welcomed James Cole, from Southampton University, as a part-time lecturer to help us deliver our new units in Human Evolution both at undergraduate and postgraduate level.

Teaching

This year we have introduced a new curriculum of PG courses including Forensic Archaeology, Forensic Osteology, Biological Anthropology, Osteoarchaeology, and a very flexible degree in research in Applied Sciences (which consists of a double weighted research project in any of our specialist fields). The new programmes have introduced more flexibility whilst retaining the core of our existing, well-established courses. We have also extended our focus on evolutionary biology and palaeoanthropology with the addition of a new Masters module in Primates and Human Evolution.

Our short courses had another successful year with developments including a new World War 1 theme for the mass grave course and the relocation of the temporary mortuary to the field to run alongside the mass grave excavation and better simulate a realistic scenario.

We have continued to develop and expand our teaching facilities with the opening of a brand new crime scene house and the continued development of relationships with local businesses and landowners to provide sites across Dorset for mock mass and clandestine grave exercises themed around both modern and historical periods.

Doctoral Research Projects

Marie-Christine Dussault: Blast injury to the human skeleton

Alongside analysis and writing-up Marie-Christine has a forthcoming chapter in an edited volume on conflict archaeology. In February, she travelled to Chicago to present a poster at the American Academy of Forensic Sciences annual conference. She was also been awarded a Santander grant for upcoming research taking place in Lima, Peru.

Sarah Lockyer: Interpersonal violence: fracture patterns in 18th- and 19th-century London

This year Sarah has spent time at the Museum of London, analysing healed fractures on skeletal remains from four post-medieval burial grounds found within London.

Alexandria Young: An investigation of patterns of mammalian scavenging in relation to vertebrate skeletal remains in a Northwest European context

The completion of Alexandria's fieldwork has given rise to interesting models of mammal scavenging in Britain which she presented at the Conference of Jovens em Investigação Arqueológica, in Portugal and BBAO's 13th Annual Conference.

**BARC, Archaeological Sciences,
University of Bradford**

By Jo Buckberry

2011 saw the arrival of Sébastien Villotte in September and in February 2012 we will be extending a warm welcome to Hannah Koon. Anthea Boylston retired in the spring and has moved to Oxford, but of course she is still working on various projects, including the publication of the skeletal population from Hereford Cathedral. We all thank Anthea for all her hard work, dedication and enthusiasm in Bradford, and wish her a very happy retirement.

Bradford produced several prize-winners in 2011. We were delighted that Julia Beaumont won the Jane Moore Prize at the BBAO Annual Meeting in Edinburgh, Pam Cross won 3rd prize at BAHID in Manchester and Emma Brown won the student prize at the International Mummy Congress in San Diego. Pam Cross was awarded an AHRC collaborative doctoral award for her research 'Horses of Men and Gods: Horse Sacrifice and Mortuary Rituals in 1st Millennium AD Britain'.

Back in March, Andrew Wilson, Jo Buckberry, Chris Gaffney (Archaeological Sciences) and Hassan Ugail (Centre for Visual Computing) were awarded £91K by JISC for the digitisation of leprous skeletons from the cemetery of the *leprosaria* of Ss. James and Mary Magdalene, Chichester. The project was done in collaboration with Chichester District Museum and Chichester District Council, and brought together a wide project team including Keith Manchester, Alan Ogden, Rebecca Storm, Andy Holland, Tom Sparrow and Chris Watkins. The exciting five-month project delivered high resolution 3D scans of selected elements which were textured using high-resolution digital photographs and some extremely clever technical jiggery-pokery (usually used in the gaming industry) by our colleagues in Visual Computing. These are currently being integrated with palaeopathological and clinical descriptions, an interactive GIS site plan and digitised radiographs of both skeletal and clinical cases of leprosy. In October we were delighted to hear that our follow-up project 'Digitised Diseases' had secured a further £750K from JISC. Digitised Diseases is a collaboration between the University of Bradford, Museum of London Archaeology and the Royal College of Surgeons and will use 3D laser scanning, CT scans and high resolution photography together with new clinical descriptions and historical illustrations to create an online archive of pathological type-specimens. The Bradford 'From Cemetery to Clinic' team are thus continuing to work together and have been joined by Emma Brown and colleagues in London: Natasha Powers, Don Walker, Tony Waldron, Martyn Cook and Carina Phillips.

Jo and Alan have been busy with the Wellcome Trust-funded 'You Are What You Ate' project, with Iona McCleery and Gary Williamson (University of Leeds),

and Vicky Shearman and Maya Harrison (Wakefield District Council). The project aims to raise public awareness of healthy eating through exploration of the dietary choices of the past. Last year we opened our first exhibition 'Sugar and Spice and All Things Nice' at Wakefield Museum and delivered osteology workshops for both adults and children, amongst a host of other public events. Jo is continuing to work with Mike McCarthy, Janet Montgomery (University of Durham) and Cathy Batt on the British-Academy project 'Who were the Vikings of Carlisle?' and with Janet Montgomery and Julia Lee-Thorp (University of Oxford) on a medieval assemblage from Stirling Castle. Alan's facial reconstruction of a murdered noble woman from Stirling is now on display in their museum and on their website.

New PhD Students:

Genevieve Tellier: A study of the Neolithic and Bronze Age populations of Wales from osteological and contextual data.

Rhea Brettell: Embalming in Late Roman Britain. A molecular-based approach to identification and an evaluation of significance (AHRC).

Ongoing PhD Research:

Julia Beaumont: Irish names in a London Cemetery: is it possible to identify Irish immigration in 19th-Century Lukin Street? (AHRC).

Emma Brown: Investigating the use of coca and other psychoactive plants in Andean mummies (AHRC).

Laura Calderwood: Differential Infant and Childhood Morbidity and Mortality in 19th century London (AHRC).

Pamela Cross: Horses of Men and Gods: Horse Sacrifice and Mortuary Rituals in 1st Millennium AD Britain (AHRC).

Ceilidh Lerwick: Vikings, Picts and Scots: Biocultural Identity in Medieval Scotland

Ben Neil: Osseous remains and cave taphonomy in the Yorkshire Dales.

Marianne Robson: Modelling the long term resilience of a marginal social-ecological system: the historical ecology of Orkney and Shetland (NERC/ESRC).

Nivien Speith: Skeletal evidence of the social persona: Life, death and society in early-medieval Alamannic communities (AHRC).

Jacqueline Towers: The significance of cattle birth seasonality in the detection of dairying in archaeology (AHRC).

PhD theses submitted:

Victoria Mueller: The end of the world? Famine, plague and climate change in 14th century London (AHRC).

Joseph Warham: Mapping Biosphere Strontium Isotope Ratios across Major Lithological Boundaries (NERC).

Dissertations Submitted for the MSc Human Osteology and Palaeopathology, 2010/11:

Seosaimhin A. Bradley: Bioarchaeological analysis of the human skeletal remains from Lobang Jeragan, Sarawak, Malaysia.

Siglinde Burghouts: Asymmetry in the manubrium and sternum body.

Ursula Cobley: A comparison between the dental health of urban medieval and post-medieval collections.

Laura Delgado: An investigation into the consumption of cane sugar in 19th century England using stable carbon isotopes.

Jenna Dittmar-Blado: Human Dissection and Autopsy during the 19th Century: An examination using scanning electron microscopy

Matthew Doyle: Determination of sex using metrical analysis of the acetabulum and auricular surface.

Leanne Ellis: Osteological and palaeopathological analysis and reinterpretation of Belle Vue House, York.

Caroline Finch: An investigation of childhood health in Roman Gloucester and Roman Baldock.

Hannah Haydock: Stable isotopes as an indication of weaning age at the Anglo-Saxon site of Raunds Furnells.

Theresa Nelson: Contamination of keratotic tissues and implications for retrieving authentic stable light isotope data.

Colin Parkman: An evaluation of search techniques, including cadaver dogs, for historic conflict mass graves.

Hallie Smith: Diagnosing scoliosis in archaeological human remains.

Katerina Tsalapatis: Comparison of two methods used in the investigation of enthesal changes as indicators of physical activities in skeletal remains.

Cranfield Forensic Institute, Cranfield University

By Sophie Beckett, Andrew Shortland, Anna Williams, Karl Harrison and Roland Wessling

It was with great sadness that staff and students at Cranfield Forensic Institute mourned the death of Hazel Woodhams, who was a well-liked and well-respected member of our visiting teaching staff. Our thoughts and sympathies go out to Hazel's family and to Roland Wessling, Hazel's partner, who was also badly hurt. We welcome Roland's continued recovery and look forward to his full return to work in the new year of 2012.

Cranfield Forensic Institute (CFI) is involved with research, teaching and commercial work of organic and inorganic materials, with particular expertise in the analysis of bone using a range of physical, chemical, mineralogical and isotopic techniques. CFI collaborates in many projects with other institutions such as Harvard, Melbourne, Leuven, Quinnipiac and Oxford Universities, the Getty Institute of Conservation, the British Museum, the Natural History Museum, the Metropolitan Museum of Art, Bonhams, MOD Estates, the Inforce Foundation and many more.

The Cranfield Forensic Institute Analytical Laboratory is a new facility which accommodates an extensive suite of state-of-the-art equipment. The Laboratory is well-equipped for a range of analytical investigations from the macro-scale to the micro-scale. For example, the surface topography and internal structure of an object can be obtained in addition to the characterisation of the object's bulk and location specific composition. The Laboratory carries out commercial analysis and is open to other researchers from Cranfield University and from other research institutions. For further information, see www.cranfield.ac.uk/cds/cfi/analytical.htm. The Laboratory has recently been used in the analysis of archaeological brain and recent analyses of porcelains will feature in the BBC's Culture Show.

Cranfield Forensic Institute's Forensic Fieldwork Facility, Dr Anna Williams and Dr Karl Harrison were featured on Tony Robinson's Gods and Monsters (Channel 4, 26th November 2011), and will be on BBC3's Ask A Stupid Question in the spring. The Forensic Fieldwork Facility is a secure outdoor laboratory on the Defence Academy of the UK (Shrivenham) site that has been authorised by DEFRA for the Use of Animal By-Products for Research Purposes. The facility is available to Cranfield Forensic Institute staff and students and their collaborators for detailed taphonomic research into any aspect of decomposition, taphonomy, search and location and excavation. It is for the use of animal analogues only, at the moment (mainly pigs, but some wild animals can be used). For further information, contact Dr Anna Williams (a.williams@cranfield.ac.uk). In addition to research, the facility will be used in 2012 for a 'Discovering Decomposition' workshop for teenagers. This event is funded by a prize awarded to Dr Anna Williams, winner of 'I'm A Scientist, Get

Me Out of Here', a prestigious Wellcome Trust-funded science engagement activity.

Dr Anna Williams was recently invited to speak at the Forensic Science Society One Day Student Conference in Aberdeen in December, where she presented on 'Forensic Anthropology: As Rock 'n' Roll As It Sounds'.

Deborah Harrison, Lindsay Cooper and Rita Giannini have joined Cranfield Forensic Institute as PhD students. Charlene Greenwood presented her work on physico-chemical modifications of bone at Bone Research Society and the British Orthopaedic Research Society 2011 conference in Cambridge.

The 2011 course prize for the most outstanding student on the MSc Forensic Programme prize was awarded to Rebecca Gittoes. The modular MSc Forensic programme continues to be a successful and popular course. The programme enables students to construct their own 'bespoke' course from a combination of a wide range of compulsory and elective modules, within a framework of five forensic streams (*Forensic Archaeology and Anthropology, Forensic Engineering and Science, Forensic Ballistics, Forensic Explosive and Explosions Investigations and Forensic Investigation*). The modular programme also enables many of the MSc modules to be taken as individual short courses. An open day for the MSc Forensic programme will be held on 27th March 2012. For further information, see www.cranfield.ac.uk/forensics

In February 2012, Cranfield Forensic Institute research will be presented at the American Academy of Forensic Science Conference in Atlanta, USA:

Further Femmes Fatales: Do Women Dominate Forensic Anthropology Professional Practice in the United States, Canada, and the United Kingdom?

Anna Williams, Joan E. Baker, John A. Williams

Initial Studies Into Effects of Moderate Heat on Soft Tissue and Bone

Karl Harrison, Brooke L. Webster, Victoria Martin

An Evaluation of the Use of Modern Medical Imaging Techniques for the Determination of Biological Sex From Craniometric Measurements

Aisling M. Smyth, Mark D. Viner, Gerald J. Conlogue, Tania Blyth,

An Evaluation of the Use of Modern Medical Imaging Techniques for the Estimation of Human Stature

Rachael Walls, Mark D. Viner, Gerald J. Conlogue, Tania Blyth

Our annual excavation in the Burial Ground at Royal Hospital Haslar has been going on since 2007. Over 50 skeletons were recovered for study. In accordance with agreements with the Hospital these were reburied back in the burial ground in May 2011. A small service was held at the graveside, followed the next day by a memorial service celebrating all those buried on the site. It was attended by about 60 people, including Surgeon Rear Admiral Lionel Jarvis (Medical Director General of the Royal Navy), Surgeon Captain David Brown (Commanding Officer, Institute of Naval Medicine) and Commander Dmitry Bognachev (Naval attaché for the Russian Federation).

Centre for Anatomy and Human Identification, College of Life Sciences, University of Dundee

By Dr Craig Cunningham

The Centre for Anatomy and Human Identification has continued to prosper during 2011 with staff and students undertaking an eclectic mix of exciting research projects which are supported by a

number of external funding sources. The Centre continues to offer undergraduate degrees in anatomy and forensic anthropology, an expanding suite of taught postgraduate courses, details of which can be found at <http://www.lifesci.dundee.ac.uk/cahid>, and several research degree opportunities. Staff from the Centre have also been prolific in a variety of local and national outreach activities which continue to enhance our profile. These events have resulted in CAHID recently being awarded the first Stephen Fry award for excellence in public engagement with research. The Centre also continues to have an active forensic caseload that spans across the UK. Finally, CAHID has entered a period of infrastructural expansion with the addition of new mortuary facilities and plans for further extension of the Centre.

People:

The Centre currently has 13 academic staff, 19 PhD students, 3 MSc students by research and approximately 450 undergraduate students in medicine, dentistry, anatomy and forensic anthropology.

During 2011, Professor Caroline Wilkinson was promoted to a Personal Chair of Craniofacial Identification and Dr Craig Cunningham was appointed to the position of Lecturer in Forensic Anthropology following the departure of Dr Patrick Randolph-Quinney.

CAHID News and Selected Projects:

During 2011 CAHID entered the first phase of planned building expansions which has involved the addition of a state of the art mortuary to accommodate the newly adopted Thiel embalming technique. Dundee is set to become the first University in the UK to exclusively adopt the Thiel method of embalming and this extension combined with the adoption of Thiel will enable CAHID to become a Centre of Excellence in the field of applied

anatomy. The University has already invested £1.5M to build the new Thiel Centre of Excellence in the first phase, but a further £1M is required to make the new mortuary a reality. CAHID has recently launched an ingenious fundraising campaign involving 10 bestselling crime authors to help raise the required million – for more details please visit: <http://www.millionforamorgue.com>

CAHID is a co-investigator for a collaborative European DVI project with Interpol, Plassdata, Bunderskriminalamt, Crabbe Consulting and Fraunhofer Institute (FASTID project). This project is funded by a 2.3M Euro FP7 European grant which runs 2010-13. As part of this project, CAHID researchers in collaboration with FASTID-project partners are compiling a database of body modification images which could be very useful when trying to identify victims of disasters. This research is co-funded by the European Commission under the Seventh Framework Programme (FP7). If you have a body modification and would like to contribute to this database please visit: <http://bodymodresearch.com>

CAHID recently received research funding (230,000 Euros) from the ISEC, European Commission Directorate General Home Affairs and CAST. This funding is to support researchers in addressing the innovative research potential which has been developed following high profile investigations into child sexual abuse. This research will involve anatomical body mapping that is directed by aetiological intelligence. The project addresses three areas of human anatomy – the hand, male external genitalia and children's faces.

The Centre is part of a collaborative project funded by the EPSRC (£1.9M). This grant is led by University of Southampton but jointly with Bath, Leicester, Kent, Warwick and Home Land Security US and aims to explore the

concept of 'Super-Identity'. CAHID was also awarded three grants totalling around £58K from SUII jointly with the School of Law, University of Edinburgh, the Forensic Regulator and University of Strathclyde, to facilitate three series of workshops examining 1) Scots law of evidence, 2) Fire investigation in Scotland and 3) the roadmap for fingerprint investigations. Additionally CAHID received a Royal Society International Travel Award - to enable a visit by Russian Scientists for craniofacial reconstruction research collaboration and networking in July 2011.

Further information on CAHID, the research that we are undertaking, and the courses that we offer, can be found at our website:

<http://www.lifesci.dundee.ac.uk/cahid>

Current Research Students:

CAHID currently has 19 PhD and 3 MRes students undertaking supervised research. These PhD and MRes research projects are varied and range from studies considering the hard and soft tissues for the purposes of identification through to studies investigating the influence of embalming techniques on tissue properties. Specific examples of research projects include those which are investigating the applicability of techniques for age estimation in the living and those which consider the development of different aspects of the juvenile skeleton. Further studies consider the analysis of faces for the purposes of identification with studies considering cross-race effects in facial reconstruction, the influence of facial creases on identification and craniofacial changes associated with transsexual individuals. Additional research projects have a more anatomical perspective with individual studies considering clinical correlations associated with anatomical variation. A great deal of the PhD research undertaken in CAHID is collaborative in nature allowing close links to be

established within the University and between other Universities.

PhD & MRes completion during 2011:

The following students successfully completed their research degree this year:

- *Dr. Amy Tillotson* (PhD). Disaster victim identification using craniofacial analysis. PhD funded by University of Dundee Greenhouse Project.
- *Dr. Helen Meadows* (PhD). Vein pattern analysis for forensic human identification. PhD funded by Anatomical Society.
- *Miss Rachel Berry* (MPhil). Provenancing humans and drugs: the real uncertainty of stable isotope data.
- *Mr Scott Paterson* (MRes). Decomposition scores and accumulated degree days: calculating the post-mortem submersion interval in a Dutch sample.
- *Miss Briony Macdonald-McMillan* (MRes). The quantification of dorsal hand features of interest to assist forensic human identification.
- *Mr Grant Thompson* (MRes). Body Recovery in hostile environments.

Selected Public Engagement

CAHID has focused public engagement with research activity through 4 routes: popular forensic science TV programs, museum exhibitions, school events and public events. Provided below is a selective, but not exhaustive list, of CAHID public engagement events.

CAHID staff contributed to a second series of the popular BBC2 archaeological science series History Cold Case. This series showcased the research applications of the Centre and described the research behind forensic science.

Staff and students have been actively involved in at least 6 new public

exhibitions of craniofacial depiction work in European museums. These exhibitions can be seen at Stirling Castle; Jorvik Viking Centre, York; Hannover Heritage Conservation Centre, Germany; National Museum, Belfast; National Museum of Ireland, Dublin; St. Gregory's Church, Sudbury.

Staff are involved in a number of education committees, such as RSE, Association for Science Education in Scotland, BioDundee and the RSE@schools program. Additionally, staff and students have actively engaged with Scottish Schools to become involved in activities that promote the university's research activity

Staff have headlined numerous UK-wide public events with presentations, workshops and seminars relating to human identification research, including Museums at night at the Royal Surgeons Hall; Camera Lucida at the Royal Society, London; 'Unmasking the Lewis Chessmen' at the National Museums of Scotland; McManus Galleries; Murder Mystery and Microscopes at Kirkaldy Library; the launch of Stirling Castle refurbishment, Historic Scotland and the opening event at Techfest Aberdeen.

CAHID International/national training courses 2011

- Prof Caroline Wilkinson – invited Facial Reconstruction workshop organiser at Brazilian Odontologist Conference - Sao Paulo, Brazil
- Prof Caroline Wilkinson – invited Forensic Anthropology Society of Europe (FASE) workshop on Advanced Facial Reconstruction, Madeira
- Prof Caroline Wilkinson – invited South African Police Training in Facial Image Comparison with University of Pretoria, South Africa
- Prof Caroline Wilkinson - International training course in facial

analysis for Saudi Arabian Police - National Policing Improvement Agency (NPIA)

- Prof Sue Black and Lucina Hackman – UK Senior Investigating Officers' training course for forensic anthropology - Scottish Police College, Tulliallan.
- Dr Craig Cunningham and Prof Sue Black – International training course for juvenile osteology.

CAHID Conference Hosts:

- Co-organiser International conference on nanotechnology jointly with US Department of Defense. Brooklyn, 2011.
- Co-organiser. International conference on Imaging for Crime Detection and Prevention. London, 2011.
- Co-organiser of RSE@Dumfries and Galloway – Prof Sue Black 2010/2011
- Co-organiser of RSE assisted dying debate – Prof Sue Black 2010
- International Craniofacial Reconstruction Symposium – July 2011 – Hosts Dr Chris Rynn and Prof Caroline Wilkinson

New Academic Courses for 2012

- *MSc Forensic Facial Identification* - highly innovative one-year taught Masters course will encompass all fields of craniofacial identification, employing highly specialised tutors from scientific backgrounds alongside experienced forensic practitioners.
- *MSc Anatomy and Advanced Forensic Anthropology* – one-year taught masters which will involve full body cadaveric dissection, training in comparative osteology, juvenile osteology, and disaster victim identification, with the opportunity to undertake a research

project under the supervision of a forensically active academic.

Details of all undergraduate and postgraduate courses can be found at <http://www.lifesci.dundee.ac.uk/cahid>

Department of Archaeology, Durham University
By Tina Jakob

We are very pleased to welcome a new colleague to the Department with Dr Janet Montgomery joining us from Bradford in January 2011. Janet has been busy setting up a new postgraduate course and the MSc in Archaeological Science is now running for the first year. Prof Charlotte Roberts is on research leave until October 2012, finishing off the following projects:

Current Projects

Biomolecular archaeology of tuberculosis in Britain and Europe – NERC funded project (2007-2011) – Charlotte Roberts and Professor Terry Brown of the University of Manchester as investigators and Abi Bouwman (Manchester) and Darlene Weston as PDRAs – see BBAO review 2008 and webpage (<http://www.dur.ac.uk/archaeology/research/projects/?mode=project&id=353>). The project is now finished and the results are being written up alongside with radiocarbon dates from Oxford.

Bioarchaeology of leprosy

Charlotte Roberts' Leverhulme Trust Fellowship funded writing a book entitled: *A bioarchaeology of leprosy: a global perspective on a declining disease* (University Press of Florida); the book will be completed in 2012 (see webpage: <http://www.dur.ac.uk/archaeology/research/projects/?mode=project&id=279>)

Research Excellence Framework 2014 (old Research Assessment Exercise)

Professor Charlotte Roberts was elected to serve as one of nine archaeologists on the C17 subpanel for Geography, Environmental Studies and Archaeology (at last, archaeological human remains will be represented on the panel for the first time!).

Dr Becky Gowland returned from maternity leave in December 2010 and has spent much of 2011 catching up! Her research project '*Morbidity in the Marshes*' with Gaynor Western, was completed in March 2011 and the resulting paper will be published shortly in the *American Journal of Physical Anthropology*. Becky is in the process of completing a co-authored book with Dr Tim Thompson (Teesside University) entitled *Human Identity and Identification* and they hope to see this published in 2012 with Cambridge University Press. Becky is continuing her collaborative research with Dr Rebecca Redfern (new Mum of Isobel – congratulations Becky R!) on childhood health in Roman Britain. She is currently Course Director for the MSc in Palaeopathology, covering Charlotte Robert's research leave.

The short course '*Body Location and Recovery in Forensic Contexts*' which is taught jointly with Dr Tim Thompson and staff at Teesside University ran successfully again in September 2011. We were pleased this year to welcome a number of students from the University of Padua, Italy, as well as a large number of UK attendees.

Staff and students were involved in producing and running a Bioarchaeology stand at a three-day Durham University science outreach programme entitled *Celebrate Science*. The event attracted over 3500 visitors during the three days and Bioarchaeology proved to be an extremely popular exhibit amongst the school children and their parents alike.

Dr Janet Montgomery started a Leverhulme Grant with Dr Mary Lewis (University of Reading) and information on this exciting project entitled “*Adolescence, Migration and Health in Medieval England: the osteological evidence*” can be found at:
<http://www.dur.ac.uk/archaeology/research/projects/?mode=project&id=493>

Dr Anwen Caffell is currently an Honorary Research Fellow/Teaching Fellow at Durham University, assisting with laboratory demonstrating on the MSc in Palaeopathology course. In addition, Anwen has carried out contract work for York Osteoarchaeology (see York Osteoarchaeology), and Archaeological Services Durham University.

Four Crosses, Powys, for Archaeological Services Durham University

Excavations carried out at Four Crosses, Powys discovered the remains of an Early Bronze Age ring ditch. Small deposits of cremated bone were recovered from a pit at the centre of the ring ditch, and a large pit to the north of the ring ditch. Unfortunately, the surviving bone was too fragmented to confirm whether or not it was human.

Anwen organised a one-day event, ‘Eating Through Time’, with the assistance of Charlotte Henderson and Tina Jakob as part of the CBA Festival of British Archaeology. Aimed at interested members of the public, the event comprised a series of short talks and practical sessions exploring the archaeological evidence for diet. For details see:
<http://www.dur.ac.uk/cba.festival2011/>

Dr Tina Jakob continues as an Honorary Research Fellow/ Teaching Fellow in the Department and teaches bioarchaeology at undergraduate and postgraduate level. She is involved in the analysis of prehistoric and historic skeletal remains from El Salha

in central Sudan and is currently writing up the results from the 2011 field season.

Research students who submitted in 2011
Kirsty McCarrison: Osteological and biomolecular study of prehistoric tuberculosis in Britain; NERC funded

Current Research Students

Zahra Afshar: Migration, mobility and economic transition in the 3rd millennium BC in Iran

Michaela Binder: Health and diet in ancient Nubia through political and social change; Leverhulme Trust funded

Davina Craps: Contextualising Osteoarthritis and Rheumatoid Arthritis in the Post-Medieval Period in Britain

Marta Diaz-Zorita Bonilla: Reconstructing social structure through bioarchaeological analysis; funded by the Government of Andalucía

Joy Eddy: Burned Human Skeletal Remains and Cremation Practice in Roman Britain

Marieke Gernay: Urban health in Medieval Belgium, France and England

Devon Kase: Congenital conditions in British populations: a contextual approach

Ellen Kendall: The Impact of Breastfeeding on Frailty in Early Medieval English Communities

Ross Kendall: Past endemic malaria and adaptive responses in the fens and marshlands of eastern England; Anthropology teaching bursary

Jo Matias: Beyond the Warrior and the Maiden: Gendered Identities in Western Iron Age Europe

Julie Peacock: Disability and traumatic brain injury (TBI) in Britain: AD 1066-AD 1800; AHRC funded

Kimberley Plomp: Quantifying palaeopathology: developing objective geometric morphometric methods for recording pathological conditions in human skeletal remains; Durham Interdisciplinary Award (with Anthropology)

Lindsay Powell: Childhood health and care in Roman London: the isotopic and palaeopathological evidence; NERC funded

Will Southwell-Wright: Disability and difference? Assessing social perceptions of physical impairment in Roman Britain; AHRC funded

Jennifer Sharman: Testing age and sex estimation methods on known documented skeletal collections from Portugal, England and Canada

Melanie Sherratt: Perceptions vs. reality: Roman gender in urban London

Ashley Tallyn: A study of monks' and nuns' health using multiple lines of evidence)

Veronica Tamorri: Funerary practices in Predynastic and Early dynastic Egypt

The following MSc in Palaeopathology students successfully completed their dissertations in 2010-11

Barrows K: Comparing prevalence rates and possible causes of dental caries at Fewston and Coach Lane

Brown P: The palaeopathology of deviant burials in Anglo-Saxon southeast Kent

Colquhoun L: History and analysis of etiological research on cribra orbitalia and porotic hyperostosis: questioning progress

Cornish N: Long bone trauma in post-medieval England: a comparison of the human remains from contemporary coastal, rural and urban settlements

Craps D: Identifying joint disease in the post-medieval rural population from the church of St Michael and St Lawrence, Fewston, North Yorkshire

Grybowska M: Investigating health stress in non-adults from an urban post-medieval population

Kendal E: Climate, mobility and status in a 14th century Black Death cemetery population

Kozakaite J: Trauma patterns in the Alytus community, Lithuania (14th-17th centuries AD)

Roderick L: Respiratory health in Post-medieval England: chronic maxillary sinusitis and rib periostitis in the Coach Lane and Fewston skeletal collections

Slotten C: Difference in domestic abuse prevalence in urban and rural populations

Sohler AM: A possible relationship between low body mass index and susceptibility to tuberculosis: evidence from the English archaeological record

Stantis C: Reconstructing a catastrophic climate: exploring climate change in 14th century London using stable oxygen isotopes

Vagene A: Dental and mtDNA relatedness among Post-medieval human remains from Fewston, Yorkshire

Wright G: Evaluating the utility of digital photography as an analytical tool in palaeopathological studies of degenerative joint disease

University of Edinburgh

By Kath McSweeney

Taught MSc Programmes

The University offers three osteologically-related taught MSc programmes: Osteoarchaeology (covers human and animal remains), Human Osteoarchaeology and Forensic Anthropology. Further information relating to the programmes can be found at:

<http://www.shc.ed.ac.uk/postgraduate/GraduateArchaeology.htm>.

The programmes are principally taught by the following people:

Dr Kath McSweeney: human osteoarchaeology and Director of all three MSc programmes

Dr Elena Kranioti: Forensic Anthropology

Dr Laszlo Bartosiewicz: animal remains

Dr Linda Fibiger: human osteoarchaeology

Dr Simon Mays: visiting lecturer

Dr Catriona Pickard: bone chemistry

Professor Clive Bonsall: reconstruction of ancient diets

Dr Gordon Cook: radiocarbon dating

Osteology Masters Students

There are currently 22 students on the three programmes (2 Osteoarchaeology; 8 Human Osteoarchaeology and 12 Forensic Anthropology).

New Lecturer in Human Osteoarchaeology

Dr Linda Fibiger was appointed as lecturer in Human Osteoarchaeology at the University of Edinburgh from January 2012. Dr Fibiger, who is currently the BABAO Committee Secretary, will share the teaching of human osteology with Dr Kath McSweeney.

Workshop

A two-day workshop will take place from 1–2 March 2012 on Cross sectional and surface histology: An application of Anthropological methods.

The deadline for registration is February 10th. Tuition fees are £200. For more information and for registration please contact Miss Anthi Tiliakou (anthoula_til@hotmail.com).

Current PhD Students

Bony, Claire: Infanticide in Britain from the Roman Conquest to the Sixteenth Century AD.

Current. Supervisor: K. McSweeney.

Kyriakou, Xenia-Paula: Interpreting Activity Markers in Medieval Scottish Populations: A lifestyle retrospective. Current. Supervisor: K. McSweeney

Rennie, Claire: Evidence of Violent Trauma in Prehistoric Populations Submitted. Supervisor: K. McSweeney

Bonsall, Laura: A biocultural perspective on the health and socio-economic status of women in Romano-British communities. Current. Supervisor: K. McSweeney

Medina-Pettersson, Cecilia: Cremation technology and ritual in Bronze Age Scotland. Current. Supervisor: K. McSweeney

Reginiano, Deborah: Activity markers in Neolithic populations of Scotland. Current. Supervisor: K. McSweeney

Gooney, Dawn: The osteological examination of the human skeletal remains from Berst Ness, Westray. Current. Supervisor: K. McSweeney

Willows, Marlo: Health Status in Medieval Scotland. Current. Supervisor: K. McSweeney

Kelly McCullough: A biometric and biomechanic study of platymeria, platycnemia and squatting facets. Current (commenced 2010). Supervisor: K. McSweeney

Suzana Hukelova: Beaker skeletal populations from the Czech Republic. Current (commenced 2010). K. McSweeney

Helen Langstaff: The heritability of facial morphology. Current (commenced 2010). Supervisor: E. Kranioti

Annamaria Diana: Osteoarchaeological Study of Medieval Skeletal Populations from Romania. Current (commenced 2011). Supervisor: K. McSweeney

Nicolle Thiemann: Growth and Development of the mandible. Current (commenced 2011). Supervisor: E. Kranioti

Current Research (Kath McSweeney)

Prehistoric Populations of the Danube Basin: health, diet and demography.

Bronze Age populations of the Arabian Peninsula.

Early Bronze Age babies from Bulgarian Thrace: a bioarchaeological, stable isotopic, and radiocarbon study.

Osteological analysis of the human remains from Ancient Messembria, a multi-phase site (Ancient Greek, Classical and Byzantine periods) on the Black Sea coast, Bulgaria.

Current Research (Elena Kranioti)

Virtual study of A.1956.352, an Egyptian mummy dated in the Roman period.

Sexual dimorphism of the human bony labyrinth

Sexual dimorphism of the tibia in contemporary Greeks, Italians and Spanish: forensic implications.

Demographic analysis of past populations (Punic, Roman, Islamic etc) from Ibiza, Spain.

The validity of virtual tools in trauma analysis.

News from the Bioarchaeology Laboratory, University of Exeter

By Christopher Knüsel

The Bioarchaeology Laboratory at Exeter said farewell to post-doctoral researcher Dr. Sébastien Villotte in September as he took up a three-year research lectureship in Archaeological Sciences at the University of Bradford. As attested by the publication list from last year's Annual Review and the list below, Séb's time in Exeter marked an especially productive and enjoyable period of research collaboration and collegiality in the Laboratory and Department. Over the two years of the Fyssen Foundation award, entitled "Activity-related Skeletal Morphologies of Europe's Last Hunter-Gatherers and First Farmers", he amassed an extensive dataset of enthesal alterations that will permit innovative insights into the behavioural

changes implicit in the Mesolithic to Neolithic transition across Europe, from Portugal to Romania. Collaborative work will continue in the future, with papers at the 2012 AAPA meeting in Portland, Oregon, USA, in a poster symposium entitled, "Working Nine to Five: The Future of Activity-related Stress", organised by Drs. Charlotte Henderson and Francisca Alves-Cardoso, for which the author of this news section is discussant, and for the Cardiff University conference "Early Farmers: The View from Archaeology and Science", organised by Dr. Penny Bickle, which will be held next May 14th-16th. Séb will also present a paper in January at the SAP (Société d'anthropologie de Paris) meeting in Paris.

As Séb was leaving, Dr. Stephany Leach joined the Laboratory as a British Academy post-doctoral researcher for an all-too-brief two-month period to assist with Dr. Martin Smith (Bournemouth University) and the writer's edited volume, *Traumatized Bodies: An Osteological History of Conflict*, which will be published by Routledge. Dr. Ruth Dickau continues in the Laboratory as a post-doctoral researcher, working with Dr. José Iriarte on the Pre-Columbian Human Land-Use and Impact in the Bolivian Amazon Project, under the auspices of a Leverhulme Trust Project Grant.

Ph.D. candidate Cynthia Bradley continues her dissertation research on 'Remaking the Mazeway: A Study of Skeletal and Mortuary Evidence from the Ancestral Pueblo Site on the enigmatic Wallace Ruin site, Colorado, U.S.A.' Likewise, Ceri Boston also continues her AHRC-funded project 'Lobsters and Tars: An Osteological Study of the Origins, Lifestyles and Health of 18th-19th-century Sailors and Marines of the Royal Navy as Reflected in their Remains' (Oxford University, external supervision), while Nivien Speith nears completion of her AHRC-funded doctoral research, entitled

‘Skeletal Evidence of the Social Persona: Life, Death and Society in Early Medieval Alamannic Communities’ (University of Bradford, external supervision). Pip (Philippa) Stone continues her AHRC-funded doctoral research on ‘An Evidence-led Approach to Intra-site and Intra-feature Spatial Distribution of Disarticulated and Fragmented Animal Bone on Prehistoric Sites in East Anglia’, while Ashleigh Haruda is nearing completion of the second year of her University of Exeter-funded doctoral research on ‘Animal Health in Pastoral Populations: An Exploration of Central Asian Nomadic Pastoralism’. Alan Outram and the writer supervise both Pip and Ashleigh. Finally, Richard Mikulski joined the Laboratory this year to commence his doctoral work on assemblages from two mass graves uncovered in Sidon in Lebanon, in conjunction with Prof. Holger Schutkowski, Bournemouth University, and Dr. Claude Doumet-Serhal of the British Museum.

The Laboratory has seen its third intake of MSc. students this academic year, with five students completing their degrees from last year’s cohort, two in archaeozoology and three in human osteoarchaeology. This academic year sees six candidates in residence, four from the UK and one each from the USA and Australia. As of this year the MSc. programme will cater only to students with their main area of enquiry in human osteoarchaeology but will maintain optional modules in archaeozoology and archaeobotany.

At the invitation of the Director, Prof. Bruno Maureille, the writer has joined the steering committee of the University of Bordeaux’s Labex (Archaeological Excellence Laboratory), which includes the UMR5199-PACEA (De la Préhistoire à l’Actuel: Culture, Environnement, et Anthropologie), and the Bordeaux III Laboratories of History (Ausonius) and

Dating and Archeomaterials. He also commences work at the Neolithic site of Çatalhöyük, where he will co-direct the human remains team with Prof. Clark Spencer Larsen of the Ohio State University, under the overall direction of Prof. Ian Hodder.

As work continues on the curation of the Exeter Cathedral collection the Laboratory also received the human remains from the Princesshay city centre development this past year from Oxford Archaeology, where they had been assessed and curated by Louise Loe, Head of Burial Archaeology. This arrival means that Exeter’s Laboratory now curates the majority of human remains excavated in the city. The combined collection covers the sub-Roman to early modern period and documents over 800 years of Exeter’s historic past.

**School of Anthropology and
Conservation, University of Kent,
Canterbury**

By Justyna Miszkievicz

Our facilities include two well equipped teaching and research laboratories. The teaching laboratory houses numerous hominin and non-human primate casts that are extensively used for teaching human evolution. Our research laboratory is equipped for dental casting, hard tissue histology (preparation, microscopy, and image analysis), and collagen extraction for stable isotope analysis. The latter is also where we curate several Anglo-Saxon, Iron Age and Bronze Age populations from the Powell Cotton Museum, as well as one of the largest and unique samples of medieval human bone in the United Kingdom, from the archaeological site of St. Gregory’s Priory and an associated cemetery in Canterbury. Our human osteology course is taught using these collections, providing undergraduate students with hands-on practice in skeletal identification. Our collections exhibit a

range of skeletal disease specimens that we use to teach our palaeopathology course. Finally, our commercial osteology unit, Kent Osteological Research and Analysis (KORA), offers osteological analyses of human skeletal remains and on-site osteology consultation.

Our current team of biological anthropologists consists of five lecturers, two post-doctoral researchers, and five PhD students (for a full list of staff profiles go to www.kent.ac.uk/sac). We have also had three masters by research projects submitted in 2011. The past year has seen exciting developments for our team. We have launched our brand new MSc in Evolution and Human Behaviour, attracted a great deal of media coverage with our research, and represented our School brilliantly at the 80th AAPA meeting in Minneapolis, Minnesota.

Lecturers in Biological Anthropology

Dr Sarah Johns specializes in human reproductive timing and evolved sexual behaviour. In 2011 she has produced research that predominantly focussed on how evolutionary theory can inform policy, and how environmental risk predicts motherhood in British populations. The past year has brought Dr Johns a new role as the Sub-Dean for Student Experience, Admissions, and Employability for the Faculty of Social Sciences. She has also developed our brand new MSc in Evolution and Human Behaviour, jointly run with the School of Psychology.

Dr Patrick Mahoney is curator of our human skeletal collection, and director of KORA. Dr Mahoney's current research is focussed on dental development. His ongoing project is concerned with reconstructing the rate that enamel grows before and after birth in modern human deciduous dentition from histology. In 2011, this project produced a method for estimating juvenile age-at-death. Dr

Mahoney is also collaborating with a team from Oxford University on a project that combines isotopic signatures of diet with enamel histology to determine variation between modern day ethnic groups including pastoralists. He is also a researcher on the Beaker Isotope Project, which is run from the University of Sheffield. In 2011 he became a trustee and board member for the Powell Cotton Museum.

Dr Noreen von Cramon-Taubadel's interests cover a wide range of topics within evolutionary anthropology. Her current research focuses mainly on microevolutionary analysis of craniometric variation within modern humans. In 2011, Dr von Cramon-Taubadel's publications included articles on the nature of the transition to agriculture in Europe, the utility of functional-developmental cranial modules for reconstructing population history and a global analysis of the effect of subsistence strategies on mandibular variation, which attracted a great deal of international media attention.

Post-Doctoral Researchers

Dr Metin Eren has started his Leverhulme Early Career Fellowship project with Dr Lycett and Dr von Cramon-Taubadel on "Palaeolithic stone axes and the origins of cultural diversity."

Honorary Research Associates

Dr Chris Deter has been busy managing various KORA projects and running isotopic samples for her current research project. Together with her assistant osteologists, she has provided commercial osteological services to regional archaeological units (such as Canterbury Archaeological Trust, the Trust for Thanet Archaeology, and SWALE Archaeology), and run public weekend osteology courses in an association with Kent Archaeological Field School. Dr Deter's current research is focussed on diet reconstruction during the Anglo Saxon period in Kent using

stable isotopes, to investigate social status, juvenile diet, and sex-specific community differences.

PhD Students (ongoing)

Lia Betti is researching modern human variation using a population genetics approach applied to postcranial skeletal morphology. Lia is supervised by Dr von Cramon-Taubadel and Dr Lycett, and her project is funded by our School.

Kerstin Schillinger is researching social learning in the context of material culture. Her PhD forms part of a project entitled “From Psychology Lab to the Artefactual Record: An Experimental Approach to the Effects of Social Learning on Material Culture”, co-run with Queen Mary, University of London. This project is funded by the Leverhulme Trust and Kerstin is supervised by Dr Lycett.

Justyna Miskiewicz is undertaking a project which seeks to examine “Ancient Bone Histology and Behaviour” in archaeological samples of modern humans from Kent. Justyna is researching femoral bone histomorphology and histomorphometry in different groups of medieval adults. She is working towards designing and evaluating a new histological methodology for determining behaviour. Her project is funded by our School and supervised by Dr Mahoney.

Stefano Kaburu is researching “Grooming Reciprocity among Wild Chimpanzees”. This project seeks to investigate wild chimpanzee strategies used to reciprocate between- and within-sex grooming. Stefano also aims to investigate the criteria underlying partner choice, and enforcing and maintaining grooming reciprocity. Stefano is supervised by Dr Newton-Fisher and his project is funded by the Leverhulme Trust.

New PhD Students

Tess Luetchford recently started her PhD project, entitled “Diet and Disease in Medieval Canterbury: An Isotopic Approach”. Tess aims to investigate the relationship between diet and disease in a medieval human population from Canterbury, using stable carbon and nitrogen isotope analysis. She is analyzing archaeological samples of modern humans that display a range of skeletal pathologies, and are documented to have had access to distinct diets. Tess’ project will be examined if the established link between diet and disease is reflected in the isotopic data. Tess is supervised by Dr Mahoney.

Research Masters Projects (submitted)

Claire Barrett: Dental microwear and orofacial morphology in Pan and Papio

Elizabeth Rowing: Diet-isotope reconstruction for the Anglo-Saxon period in Kent

Katherine Scane: Diet-isotope reconstruction for the Neolithic and Bronze Age periods in Kent

80th AAPA Meeting in Minneapolis (MN)

Back in April 2011 we proudly represented our School at the 80th AAPA Meeting in Minneapolis by giving posters and podium talks. Justyna Miskiewicz and Dr Mahoney were invited to participate in the Symposium in Honour of Dr Don Reid. A summary of the symposium, including Justyna and Dr Mahoney’s presentation synopses, can be read in the news piece by Dr Tanya Smith and Dr Debbie Guatelli-Steinberg, recently published in the *Evolutionary Anthropology Journal* (20:161-163). We have presented the following research:

Bae, C.J., Xiao, D., Qiu, L., Shen, G., Delson, E., von Cramon-Taubadel, N., Lycett, S.J., Jin, J.J.H., Tu, H. (2011). Morphometric analysis and geochronology of hominin fossils from Maba (Guangdong, China) *American Journal of Physical Anthropology*, S52: 80.

Barrett, C., and Mahoney, P. (2011). Dental microwear and morphology correlation in Pan, Papio, and Gorilla. *American Journal of Physical Anthropology* S52: 82.

Betti, L., von Cramon-Taubadel, N. & Lycett, S.J. (2011). A test of the Out-of-Africa hypothesis using the pelvis and long bones reveals differential preservation of ancient demographic signature in the postcranium. *American Journal of Physical Anthropology*, S52: 90.

Deter, C., Rowing, L., Scane, K., Moody, G., Mahoney, P. (2011) Isotopic signatures of diet from the Bronze Age, Iron Age, and Anglo Saxon period in Kent, UK: preliminary results, *American Journal of Physical Anthropology* S52: 124.

Lycett, S.J., Betti, L. & von Cramon-Taubadel, N. (2011). Testing the efficacy of sex determination in the human pelvis using geometric morphometrics and semilandmarks. *American Journal of Physical Anthropology* S52: 201.

Mahoney, P., Muldner, G., Ashu, A. M., Zeitlyn, D. (2011). Enamel development and thickness in Fulbe pastoralists and Nso agriculturalists, Cameroon. *American Journal of Physical Anthropology* 144 (S52): 204.

Miskiewicz, J., and Mahoney, P. (2011). Linear enamel hypoplasia (LEH) and age at death (AAD) at medieval St Gregory's Priory and Cemetery, Canterbury, UK. *American Journal of Physical Anthropology* 144 (S52): 218.

Newton-Fisher, N. E., and Lee, P. C. (2011). Grooming reciprocity in wild male chimpanzees. *American Journal of Physical Anthropology*, S52: 225.

Schmidt, C., Chiu, L., Frazer, L., Barrett, C., and Mahoney, P. (2011) Dental

microwear texture analysis of Natufian hunter-gatherers and Neolithic farmers from Northern Israel. *American Journal of Physical Anthropology* 144 (S52): 265.

von Cramon-Taubadel, N. & Smith, H.F. (2011). The relative efficacy of functional-developmental cranial modules for reconstructing hominoid phylogeny: implications for the reconstruction of hominin phylogeny. *Paleoanthropology* 2011: A7.

von Cramon-Taubadel, N. & Pinhasi, R. (2011). Craniometric data supports a mosaic model of demic and cultural Neolithic diffusion to outlying regions of Europe. *American Journal of Physical Anthropology* S52: 302.

Department of Archaeology, University of Sheffield

By Lauren McIntyre

Since the start of term in September, Professor Mike Parker Pearson has been on study leave. Consequently, for the duration of the 2011-2012 academic year, Professor Parker Pearson's teaching responsibilities are being undertaken by Dr Katie Hemer. As part of this role, Katie is coordinating and delivering third year and Masters level modules, including 'Funerary Archaeology' and 'Iron Age Europe', as well as first year undergraduate modules, such as 'World Civilisations'. In addition to teaching, Katie is also supervising three third year dissertations, which look at cannibalism, Bronze Age barrows, and Iron Age hillforts.

Dissertations submitted in 2011 for the MSc in Human Osteology and Funerary Archaeology:

James Cahill 2010/11: A return to arms: An analysis of Medieval and Post Medieval muscle usage patterns in the upper limbs at the York Barbican.

Jennifer Donovan 2010/11: In situ preservation of archaeological bone: examining bending forces on femoral shafts based on macroscopic and microscopic evaluation.

Alexandra Ion 2010/11: Is the body in pieces at peace? An analysis of the practice of osteoarchaeology.

Elisabeth Jeffries 2010/11: The archaeology of children in northern Iceland: an analysis of the infant assemblage from Hofstadir and Keldudalur.

Ian King 2010/11: Topographic Index: Investigation into the possibility of quantitative assessment of the pubic symphysis.

Iraia Lopez 2010/11: Archaeological evidence of change in the burial landscape in the southwest of Alava.

Michelle Padovani 2010/11: Skeletal asymmetries and their implications towards the determination of handedness.

Caroline Pentabona 2010/11: Exhibiting bodies. Confronting human remains in public museums.

Marion Poux 2010/11: Children's burials in Yorkshire and Humberside: Location and distribution of the missing children. From the first to the eleventh century AD.

Sarah Stanley 2010/11: The health of children in Medieval Britain. With a case study of juvenile bones from the Barbican, York skeletal collection.

Lucie Taylor 2010/11: The assessment of peri-mortem trauma recognition after forensic incineration.

New PhD Studies:

Alison Atkin: Profiling the dead: demographic characterisation of mass fatality incidents in the past and the present

Jennifer Crangle: The Post-Burial Activities of the English Medieval Period, c.700–1550 AD; Tracing the Evolution of Charnelling (University of Sheffield Faculty of Arts and Humanities Postgraduate Research Scholarship)

PhD Studies in progress

Tom Booth: An investigation into the relationship between bone diagenesis and funerary ritual. (Funded by the AHRC)

Linzi Harvey: Dental health in medieval and post-medieval York: Investigating the relationship between oral and systemic health in a past population. (Funded by University of Sheffield Studentship/Lee Child Corporation Scholarship)

Lauren McIntyre: Demography, diet and health in Roman York. (Funded by the AHRC)

Ioanna Moutafi: Bioarchaeological analysis of the Mycenaean cemetery of Vounteni, Achaea, Greece: towards a holistic understanding of Mycenaean burial practices and their relationship to social structure. (Funded by the University of Sheffield Fee Scholarship, the Ione Mylonas Shear Fellowship (ASCSA), the J. Lawrence Angel Fellowship in Human Skeletal Studies at the American School of Classical Studies at Athens, and the Greek Archaeological Committee UK Scholarships including Scholarship in Memory of Irini N. Hadjipateras & A.G. Leventis Foundation Scholarship in memory of Dino Leventis)

Tom O'Mahoney: Modelling and imaging Neanderthal postcranial growth.

PhD Theses submitted 2011

Katie Hemer, Michelle Machicek, Diana Mahoney-Swales, Nicole Roth, Kirsty Squires (abstracts below)

Published Excavation

In July 2010 an excavation was undertaken in the car park of the Masonic Hall at Bawtry, South Yorkshire, as part of a field school run by the Department of Archaeology, University of Sheffield, with support from Wessex Archaeology (Sheffield). The Masonic Hall was the chapel of the medieval hospital of Bawtry, and the principal aim of the field school was to throw new light on the hospital and on the cemetery that was associated with it, which had been identified during excavations in 2006 and 2007. During the 2010 excavation, eighteen graves were identified, and subsequent analysis of both the articulated and disarticulated skeletal remains identified a minimum number of fifty three individuals. It was demonstrated that the cemetery served a broad cross section of the population, which was relatively healthy. All evidence indicates that the burials were all of later medieval date. A small number of medieval artefacts were recovered, including a 13th century coin, a copper alloy plate (of a type used in medieval medicinal cures for damaged or infected joints), and the copper ferrule from the end of a walking stick. The remains of a late medieval wall was encountered running eastwards from the east wall of the Masonic Hall; this wall was either the remains of a boundary wall or of a building, and it appears to be perpetuated into the 19th century, when a wall in a similar location is depicted on images of the chapel.

McIntyre, L., and Hadley, D. 2011. Archaeological Excavations at Bawtry Masonic Hall, South Yorkshire, July 2010: the cemetery of the medieval hospital of St. Mary Magdalene. Sheffield, The University of Sheffield.

Department of Archaeology, University of Southampton

By Sonia Zakrzewski

People

2011 proved to be a busy year in Southampton. This was especially the case for Jo Sofaer, Jaco Weinstock, Simon Mays, Sarah Inskip and Ellie Williams. We welcomed back Yannis Hamilakis from grant-funded research in the Aegean and Sonia Zakrzewski from maternity leave.

Projects

Jo Sofaer is continuing her HERA funded project "Creativity and Craft Production in Middle and Late Bronze Age Europe". Sonia Zakrzewski is nearing completion of her AHRC funded project "Ancient Egyptian Identity".

Current Research Students

Richard Chuang and Brit Hill started doctoral research in October 2011, while Sarah Inskip and Ellie Williams continue theirs. Sarah will complete early in 2012.

Richard Chuang: Genetic and isotopic analysis of Roman equids.

Brittany Hill: Regional differences in cremations and burials with animals in Roman Britain

Sarah Inskip (also undertaking contract osteological analysis for Northamptonshire Archaeology): The osteoarchaeology of religion: differences in MSM expression and activity patterning in medieval Christian and Islamic groups in Spain.

Ellie Williams: Archaeoethanatology, funerary archaeology and Cluniac monastic orders in Britain and France (AHRC funded).

Dissertations Approved for the MA in Osteoarchaeology 2010-1

Richard Chuang: This Little Piggy Went to Market: Growth Rate and Size Change of pigs at suitable slaughtering age in Iron Age, Early Roman, and Late Roman Hampshire

Laurel Engbring: An osteological analysis of cremated remains from the flat-cairn cemetery of Madi, Estonia

Brittany Hill: A Comparative Study of Congenital and Developmental Spinal Defects in Two Populations

Akiho Kofuna: Examining pathological conditions among the Anglo-Saxons at Porchester Castle in Hampshire

Emine Lacey: The survival of skeletal elements in the Great Chesterford collection

Amanda Ronning-Sammet: An examination of Juvenile Paleopathology and Growth in the Anglo-Saxon Population of Great Chesterford

Kathryn Temple: A comparative study of a random sample population from a variety of backgrounds as a part of analysis of measures of ethnicity in osteoarchaeology

Catherine Trevithick: A Study of Femoral Harris Lines From the Juveniles of the Anglo-Saxon Population of Great Chesterford

Julie Walker: A Comparative Study of Congenital and Developmental Spinal Defects in Two Populations

**School of Science & Engineering,
Teesside University**
By Tim Thompson

The past year has been a busy one for the small contingent of anthropologists at

Teesside. As well as our usual contributions to Teesside's degree courses, we've also been welcoming over Erasmus students from the University of Lille, supervised the only MRes(Sci) students in the School, brought in a number of new PhD students (and said goodbye to our first anthropology doctoral graduate – Dr Alex Starkie) and have taken over new lab space. We may have wrapped up one significant project now, but we're enjoying some fruitful new collaborations and projects with departments in Coimbra, Sassari and Warsaw. We've also been working with award-winning photographer Eric Fong, whose resulting images have been exhibited in London.

Our short course (with Dr Becky Gowland at Durham University) has run for another successful year, and we have been increasing the amount of consultancy work that we have been doing with our local police forces.

Related MSc dissertations submitted for the Forensic & Crime Scene Investigation Pathways

Brookes, G. (2011): The 3D analysis and imaging of tattoos in human identification.

Hughes, L. (2011): The comparison of methods used for the elemental analysis of tool marks in bones.

Hussain, S. (2011): Visual pair matching of human adult metacarpals to determine the MLNI in commingled human remains.

Lipscomb, V. (2011): The microscopic imaging of diagenetically altered bone recovered from the soil.

Parker, J. (2011): The ageing process of the tattoo: Implications within the field of forensic science.

Robinson, V. (2011): The use of geometric morphometrics to establish osteological landmarks for sex determination of human carpal bones.

Wright, J. (2011): Body modification: The potential of piercing artefacts in human identification.

Current PhD Research students

Garrido-Varas C. An investigation into bilateral asymmetry of the skeleton and its use in physical and forensic anthropology (funded by Becas Chile).

Errickson, D. The application of laser scanning in trauma analysis in forensic anthropology.

Ellingham, S. The advanced analysis of burned bone from forensic and archaeological contexts.

Abdulhadi, R. The advanced analysis of burned bone: Investigation of accelerants on the bone matrix.

POSTGRADUATE RESEARCH
ABSTRACTS

PhD Abstract

Kathleen Blake, University of Pittsburgh

An investigation of sex determination from the subadult pelvis: a morphometric analysis

The pelvis, the most sexually dimorphic area of the adult human skeleton, is essential to determine biological sex. Although sex differences have been noted in subadult pelvic bones since the late 1800s, no reliable method has been developed to determine biological sex, and therefore, subadult sex demographics must be omitted from forensic and archaeological investigations. This study examined three North American skeletal samples of documented age and sex, the Forensic Fetal Osteological Collection (n=113), the subadult component of the Hamann-Todd Collection (n=37), and the Trotter Fetal Bone Collection (n=37), to test the hypothesis that subadult pelvic traits, both metric and non-metric, are sufficiently sexually dimorphic in one or more sample or age category. Method

accuracy and reliability were also evaluated. Traits included those previously studied: the breadth and angle of the sciatic notch, iliac crest curvature, arch criterion, auricular surface elevation, subpubic angle, pubic length, and ischial length. Two additional feature analyses and three indices were developed for this study: the anterior and posterior sciatic notch lengths, pubic body width, pubic index, anterior/posterior sciatic notch, and sciatic notch width/iliac length index. Both left and right sides were considered using photographic and direct measurement techniques. For t-tests and correlations, at least one trait per sample reached statistically significant levels for sexual dimorphism. Reliable testing methods were not developed because these features were inconsistently sexually dimorphic for each sample; furthermore, male and female measurement ranges overlapped considerably, trait morphology proved variable, and individuals were incorrectly assigned to sex when using methods outlined in previous studies. Both logistic regression and discriminant function analysis provided low predictive scores, the highest at 0.68, which were insufficient to predict sex consistently or meet the Daubert threshold. Two non-metric traits, sciatic notch shape and auricular surface elevation, also proved to be inconsistent across the three samples. Consequently, these traits were unreliable for sex determination. Several features, including the sciatic notch width, sciatic notch shape, and pubic body width, demonstrated differences among older subadults and should be investigated using larger, broadly-aged samples that include adults.

PhD Abstract

Rhea Brettell, University of Bradford (continuing)

Funding: AHRC

'Embalming' in late Roman Britain: a molecular-based approach to

identification and an evaluation of significance.

There is increasing evidence for the complexity of late Roman mortuary practices across Europe. One suggested class of burials demonstrates an association between inhumation in substantial stone sarcophagi and/or lead-lined coffins, the application of plaster coatings to the bodies and/or the used of textile shrouds incorporating natural resins. It has been suggested that this rite represents a deliberate attempt at body preservation. The apparent dispersal of this 'package' from North Africa into Italy, the Rhineland and thence to Roman Britain has been linked with the spread of Christianity, although this is disputed. The investigation of organic substances used to prepare mummification balms had enabled better understanding of Ancient Egyptian funerary rituals. Thus, it is proposed that the application of Raman spectroscopy and gas chromatography-mass spectrometry in conjunction with examination of the micro-stratigraphy of the textile wrappings, where possible, will help to elucidate the following questions. Which resins were selected for inclusion in these mortuary contexts in late Roman Britain? What are their geographical places of origin? How were the resins treated and applied? What was their purpose and significance? How does this apparent 'package' relate to similar burials from Roman Europe and North Africa? Can chemical identification of resins use in Roman mortuary practices in Britain permit us to decipher the 'meaning' encapsulated in these 'special' burials? Thus, in summary, the aim of this project is to apply a molecular-based approach to identification of the sources(s), method of application and purpose of resins found in mortuary contexts in late Roman Britain and to illuminate the nature of this 'deviant' funerary practice through comparison with similar burials in Roman Europe and beyond.

PhD Abstract

Davina Craps (Department of Archaeology, Durham University; d.d.craps@durham.ac.uk)

Supervised by: Drs Rebecca Gowland and Pam Graves

Contextualising Osteoarthritis and Rheumatoid Arthritis in the Post-Medieval Period in Britain.

Health inequalities are widely reported in Britain according to geography, social status and gender. Clinical evidence indicates that joint disease in Britain is strongly influenced by socio-geographical factors; affected joints differ between men and women and living more northerly aggravates the condition. This research aims to explore these inequalities in Post-Medieval society in England, specifically in relation to osteoarthritis and rheumatoid arthritis. This project will establish, in an archaeological context, the epidemiology of osteoarthritis and rheumatoid arthritis in relation to different social groups. It will seek to develop more rigorous recording techniques that will then be applied to archaeological populations in a holistic manner, by incorporating factors such as diet, sex, historical sources and environment. Unlike previous research on the subject this project will not be focusing on deriving activity-related information from joint disease, since previous efforts have proved fruitless. The contribution of this PhD will be to enable us to understand more about the antiquity of these joint diseases and contextualize them in a post-medieval framework.

PhD Abstract

Shirley Curtis, University of Liverpool

Funding: AHRC

Webpage:

<http://liverpool.academia.edu/ShirleyAnnCurtis/About>

Medieval Monastic Lifeways: A skeletal and stable isotope study on inhabitants from Tarbat, Scotland and Norton Priory, England.

One of my main research questions is how did the monastic way of life affect human diet and health? I hypothesise that health differed among different status individuals; a hierarchical order created divisions in the distribution of resources and that variations in diet and health changed as monastic orders evolved.

Skeletal and stable carbon and nitrogen isotope analyses will be undertaken to reconstruct medieval lifeways on over 300 human skeletons from two key monastic sites in the UK: Tarbat, NE Scotland (a Celtic Order) and Norton Priory, Cheshire (an Augustinian Order). Will differences in medieval lifeways be observed between sites of different monastic orders? Influences on medieval food consumption and health consequences will be compared with already-studied secular populations.

PhD Abstract

Kathleen Faccia. Department of Archaeology, Biological Anthropology, University of Calgary.

Exploring Age and Activity Related Changes in Prehistoric Cis-Baikal Hunter-Gatherer-Fishers: A Micro-CT Analysis of Cortical Canal Microstructure.

This dissertation examines cortical canal architecture in two prehistoric hunter-gatherer-fisher groups, the Kito (8000-7000/6800 calBP) and the Isakovo-Serovo-Glazkovo (ISG) (6000-4000 calBP), of the Cis-Baikal, Siberia. Changes with age are explored in the rib and the femur using micro-CT and traditional histological techniques. Age-at-death category prediction formulae are

generated using micro-CT variables, with results tested for accuracy and bias. For the femur, micro-CT formulae perform better than the method of Thompson (1978, 1979), even when the latter is tailored to the Baikal sample. For the rib, the method of Cho and colleagues (2002), tailored to the Baikal sample, performs with more accuracy and less bias. In both studies, micro-CT proves superior in circumventing diagenetic alternations. Bone quality is assessed within the context of the life histories of males and females, with few significant differences identified between the sexes and among age-at-death categories, indicating that bone quality remained relatively consistent throughout the lifespan. Potential effects of the growth spurt and reproductive events on canal structure are noted in the female sample. Ribs and femora are analysed for signatures of differences in relative activity levels due to purported differences in mobility patterns between the Kitoi and the ISG. No signatures of activity are identified in the ribs, supporting its use as control for baseline metabolic remodeling activity independent of biomechanical loading. Significant differences in femoral variables were identified, but none were consistent across comparisons. Porosity and coefficients of variation prove the most promising avenues for future exploration. As with age-at-death analyses, biomechanical analyses underscore the relative similarity in bone dynamics present in the Kitoi and the ISG. Ultimately, cortical canal microstructure proves a nuanced method for examining bone quality in prehistoric populations.

PhD Abstract

Julia Gamble, University of Manitoba, Canada (continuing)
Supervisor: Dr Rob Hoppa
Email: julia.gamble@gmail.com

The impact of childhood health on later life through the assessment of dental

enamel defects and skeletal pathology in Medieval Denmark

Increasingly, the impact of early childhood physiological perturbations (here referred to as stress episodes) on adult health and longevity in the modern population is becoming a focal point of clinical studies. In such research, retrospective investigations of childhood health, along with the consultation of clinical records and longitudinal studies, may be able to elucidate this relationship. The consideration of health in past populations can be greatly enlightening to such areas of investigation, as these samples present data on the health of individuals at various stages of their lives. The primary goal of this research is to consider the impact of childhood health and well-being on adult health and survival in two Medieval Danish populations. This will be done through the joint consideration of dental enamel microstructure (both internal and external) and osteological evidence for health and longevity in adult skeletal remains. This investigation will further assess possible changes in this relationship over a period of socioeconomic change in Medieval Denmark which is documented in the historical record. The period in question (from the mid-12th to the mid-16th centuries A.D.) saw episodes of population pressure and economic stress, famine, and disease (such as leprosy and the Black Death). As such, the relationship between childhood stress episodes and adult health will be considered here over a period of particular socioeconomic stress.

PhD Abstract

Michelle Gamble, Newcastle University

Health and Disease in Chalcolithic Cyprus: A problem-oriented palaeopathological study of the human remains

Poor preservation of the human skeletal remains on Cyprus has, in the past, limited

palaeopathological analyses conducted. This research has two main aims: (1) to explore the possibility of deriving useful information from the poorly preserved human remains and the methodological adjustments required to do so, and (2) to discuss the health status of the human Chalcolithic populations in Southwest Cyprus, determining patterns in the expression of pathologies related to age, sex or burial location which, if present, may further elucidate aspects of lifeways within and amongst the living populations. These aims are achieved through a macroscopic and microscopic analysis of the pathological lesions on the human skeletal remains from the Souskiou-*Laona* cemetery, the *Lemba-Lakkous* and *Kissonerga-Mosphilia* settlement sites which all date to the Middle Chalcolithic period (c.3400-2900 cal BC). This research presents one of the first comprehensive palaeopathological studies for the Chalcolithic period in Cyprus with multi-site data. Lesions arising from osteoarthritic processes, non-specific diseases and disorders as well as trauma, dental pathologies and congenital defects are recorded, analysed and discussed within the archaeological context. The analyses indicate that there are moderate to low prevalence of pathological lesions observed. There is differential expression between males and females in the joints affected by osteoarthritic changes and the types of dental pathologies suffered by each sex. This research contributes to the overall historiography of health and disease in Cyprus by filling a lacuna for the Chalcolithic period. Additionally, it provides an illustration of some methodological modifications, such as qualitative discussion, needed when dealing with poorly preserved and commingled material in a palaeopathological study.

PhD Abstract

Claudia Garrido-Varas, Teesside University (continuing)

An investigation into bilateral asymmetry of the skeleton and its use in physical and forensic anthropology.

In the Human Rights context, researchers and practitioners are regularly faced with mass graves, disturbed sites, incomplete and commingled remains. For complex cases of this nature, different approaches to physical and forensic anthropology are essential, and bilateral asymmetry can contribute to the determination of the minimum number of individuals represented as well aiding in the reassembly of the skeletons. Some published formulae useful for determining the most likely number of individuals represented in a sample rely on the initial pair matching of anatomical elements, yet this is itself a subjective process since it is based on general morphology and influenced by external taphonomic and environmental factors. Osteometric sorting of commingled human remains has been attempted in previous studies, but the effects of secular trends, handedness, ethnic origin and sex have not been formally explored.

This research will contemplate two collections, one of them Anglo-Saxon and historic and the other Chilean and modern; neither of them have been studied in depth. The study will look into size and shape variation of the limbs with the goal of constructing population specific data bases that will help resolving commingle and reassembling issues with a mathematical base.

PhD Abstract

Davd Gonçalves, University of Coimbra, Portugal (submitted)

Supervisors: Dr. Eugénia Cunha (University of Coimbra); Dr. Tim J. U. Thompson (University of Teesside)

Cremaains: the value of quantitative analysis for the bioanthropological research of burned human skeletal remains

The analysis of burned bone stumbles on the problems raised by the heat-induced changes that seriously interfere with the methods adopted by biological anthropologists. These changes especially affect the structure of bone leading to fragmentation, dimensional modification, warping and fracturing. As a result, quantitative analysis based on measurements and weighting are usually overlooked due to uncertainties regarding their ability to correctly process burned skeletal remains.

The present research tackled these problems by analysing present-day cremations from a modern crematorium in order to investigate three distinct issues. The first regarded the relevance of heat-induced warping and thumbnail fracturing for the determination of the pre-cremation condition of the human remains. Secondly, the implication of heat-related dimensional change on sexual dimorphism and consequent sex determination from calcined bones was addressed. Finally, the value of post-cremation skeletal weights for bioarchaeological interpretation of funerary contexts was also investigated. This was done by examining human skeletons both prior to and after cremation on two different cremation samples: one composed of recently dead cadavers submitted to cremation; and another one composed of dry skeletons recently exhumed.

Although heat-induced bone changes can be very extensive, their analytical potential is not completely wiped out. This investigation documented some of the

effects of heat on the skeleton and proposes new techniques based on bone size and weight for the analysis of cremains. Among other things, the new data and methods allow for sex determination, for the assessment of the completeness of the skeleton on a given assemblage of burned human remains and for the interpretation of archaeological cremation and burial practices.

PhD abstract

Amy Gray Jones, University of Manchester
Awarded July 2011
Funding: AHRC

Dealing with the dead: Manipulation of the body in the mortuary practices of Mesolithic north-west Europe.

This thesis focuses on practices of disarticulation and bodily manipulation in the Mesolithic of north-west Europe. While the presence of “loose human bone” has been noted on Mesolithic sites for several decades, this has often been dismissed as the result of taphonomic factors, such as disturbed graves. Instead, studies of mortuary practices have primarily focused on the cemeteries and issues of social complexity, ranking and status. Disarticulated human bone, which cannot throw new light on such issues, has consequently been ignored. Only with more recent discoveries of larger collections of disarticulated human remains, from secure contexts, has this phenomenon begun to be taken more seriously, with Cauwe (2001) arguing, for example, that disarticulation represents the primary Mesolithic mortuary practice.

Despite this claim, little work has focused on practices of manipulation and disarticulation beyond a few studies of individual sites, thus little is understood about the nature and variability of these mortuary practices. The aim of this thesis

is therefore to provide a broad study of disarticulated Mesolithic remains across north-west Europe (excluding Scandinavia). In order to tackle the methodological issues involved in the analysis of these assemblages, as well as to provide a considered study of the context of these remains, three detailed osteological case studies – Hardinxveld in the Netherlands and Les Varennes and Petit Marais in France – are presented. These are then compared with a series of well-published sites in order to draw out the full parameters of Mesolithic mortuary variability. It is argued here that Mesolithic mortuary practices were complex and were often temporally and spatially extended. These practices of disarticulation and manipulation also appear to indicate a concern with bodily decay and the circulation of body parts. The implications of these practices for the understanding of Mesolithic identities, bodies, and attitudes to death are also drawn out.

PhD Abstract

Katie Hemer, University of Sheffield

In the Realm of Saints: A Reconstruction of Life and Death in Early Medieval Wales and the Isle of Man

Traditionally, cemetery populations from early medieval (5th–11th century) Wales and the Isle of Man have received less attention than contemporaneous populations from Anglo-Saxon England. Such neglect is partly due to the absence of elaborately furnished burials, poor skeletal preservation, and a dearth of reliably dated cemeteries. For those cemeteries where well-preserved human remains were recovered, very few skeletal collections have been analysed, or they were analysed many years ago, before the advent of modern-day osteological standards and biomolecular techniques. In response to

this, I undertook a biocultural investigation of eight well-preserved cemetery populations including Brownslade, West Angle Bay, Porthclew, Llandough and Llanbedrgoch from Wales and Peel Castle, Balladoole and Cronk keillane from the Isle of Man.

Stable isotope data for diet and migration were used in combination with osteological data in order to reconstruct individual life histories. Considerable evidence was found for internal and external mobility, with some individuals having travelled to Wales and the Isle of Man from the Mediterranean and Scandinavia. The study highlights many significant phenomena, including differential access to dietary resources and the use of funerary provisions in the display of status and identity, and considers how different factors (e.g. place of origin) influenced the way people were perceived and treated in life, and subsequently upon death.

PhD Abstract

David Klinge, University of Cambridge

The Use of Skeletal Evidence to Understand the Transition from Roman to Early Anglo-Saxon Cambridgeshire and Bedfordshire

The transformation from Roman to Anglo-Saxon Britain (AD 400–600) is one of the most debated processes in early British history. This thesis examined it through an analysis of human skeletal evidence to determine to what extent daily life changed between the Roman and Anglo-Saxon periods, and whether there is any evidence of the migration of the Anglo-Saxons. It looked at age-at-death and sex distributions; evidence of generalised stress (stature, LEH, CO); dental pathologies (caries, ante-mortem tooth loss, abscesses, and calculus); trauma and infection; and arthritic, degenerative joint

conditions. The sample consisted of 1,092 individuals from seventeen sites (eight Roman and nine Anglo-Saxon) all dating from between 60 and 700 AD from Cambridgeshire and Bedfordshire; all the individuals were analysed using the same osteological standards. The sample was then compared with similar sites from throughout England to determine if the thesis sample represented a countrywide phenomenon and if the data indicated changes throughout England tied to lifestyle and/or migration.

Overall, while the Anglo-Saxon migrations certainly occurred, this thesis found that socio-economic reasons are the most likely explanations for most of the skeletal changes seen between the Roman and Anglo-Saxon periods. Lifestyle did not change as dramatically as much of the historical and other archaeological evidence of the Roman and Anglo-Saxon periods suggest. In comparison to the Roman period, the Anglo-Saxon populations were taller; received slightly better nutrition, had fewer dental problems, but lived marginally shorter lives and had more infection. The two populations also had similar rates of trauma and gender divisions were similar in both periods.

PhD Abstract

Michelle Machicek, University of Sheffield

Reconstructing diet, health and activity patterns in early nomadic pastoralist communities of Inner Asia

The broad aim of this dissertation entails the reconstruction of diet, health and activity in discrete populations which inhabited Inner Asia from c. 1500 BCE to CE 600. These objectives have been addressed using osteological and chemical analyses of human skeletal remains, derived from archaeological sites located

throughout modern-day southern Siberia, Mongolia, Inner Mongolia, Xinjiang and Kyrgyzstan. This dissertation aimed to challenge assumptions, which often presuppose a predominantly mobile pastoralist lifestyle for many of these populations, by providing evidence for dietary habits and for workload and activity patterns.

The key results of this dissertation indicate dietary variation and similarities in distinct communities, which are related to food procurement strategies carried out at local group levels. The results of the isotopic and dental pathology analyses indicate dietary variation in discrete groups which may have been labelled under the same terms historically and archaeologically, but based on these findings did not necessarily engage in identical subsistence regimes. The analysis of degenerative joint disease, coupled with musculo-skeletal stress marker recording has provided an indication of variation in workload and health between discrete groups. Based on these results workload variation and activity patterns have been found to be relatable to local food production activities and social circumstances of particular groups. Finally, the combined analyses presented in this dissertation have provided a firm basis for reconstructing past life-ways of these populations by presenting a more thorough understanding of diet, health and group activities.

PhD Abstract

Diana Mahoney-Swales, University of Sheffield

Life and stress: a bio-cultural investigation into the Later Anglo-Saxon population of the Black Gate cemetery, Newcastle-upon-Tyne

The Black Gate cemetery was established within the abandoned remains of a Roman fort (Pons Aelius) in the 8th century and

was an active burial ground until the 12th century AD. The cemetery has yielded 663 articulated skeletons, making it one of the largest Christian skeletal assemblages recovered from later Anglo-Saxon England. Aside from the cemetery there is no physical evidence for settlement in the area from the abandonment of Pons Aelius in 410 AD until the first phase of construction of a Norman castle in 1080 AD. Documentary evidence indicates the presence of a monastery within the immediate locality of the cemetery. However, archaeological evidence for monastic settlement at the site has yet to be established.

Investigation into the relationship between mortality, morbidity and burial practice was undertaken to explore the impact of socio-economic status upon physiological stress within this assemblage. The mortality and morbidity profile was compared with thirteen sites of known context to identify any shared characteristics with urban, rural or monastic assemblages which would enable identification of the settlement type from which the Black Gate contributory population originated.

A detailed picture of the health and mortuary behaviour of the Black Gate cemetery was attained, especially regarding the relationship between biological and social status. However, the origin of this population remains inconclusive. This research emphasises the multi-factorial nature of physiological stress and that age, diet, cultural beliefs and status had a greater impact upon the skeleton than settlement type in the later Anglo-Saxon period.

PhD Abstract

Johanna Morgan

Dr. rer. nat. thesis at the Institute of Anthropology, Johannes Gutenberg University Mainz, Germany

Successfully defended 19 August, 2011

Observable Stages and Scheduling for Alveolar Remodeling following Antemortem Tooth Loss

Antemortem tooth loss (AMTL) is the end stage of archaeologically visible dental disease, a side effect of progressed stages of scurvy and leprosy, due to trauma and ablation, or the result of extreme continuous eruption. Bone eventually fills the socket but the time required for this to occur, along with macroscopic appearance during this process, is unclear. Because of the frequency of AMTL a schedule to assess time since tooth loss (TSL) from macroscopic observation of dry bone would be of use to osteoarchaeology and forensic science and some merit to general dentistry and implantology.

After tooth loss soft tissue occupies the socket only to be quickly converted to immature bone and remodeled to be identical to the surrounding alveolus. Appearance and fullness of the socket, as identified from radiographs in living individuals and applied to archaeological remains through gross observation, undergo distinguishable stages. Socket healing occurs in three distinct stages: pre-ossseous (within one week of tooth loss), bony remodeling (approximately 14 weeks since loss), and ossified/healed (at least 29 weeks since loss). Several variables, among them interdental ridge resorption, socket appearance, and sex, have statistically significant effects on this rate and causing divergence of up to 19 weeks. With these results it is possible to estimate TSL in archaeological dry bone from socket fullness.

Future investigation should focus particularly on causation and correlation of certain variables with the acceleration or inhibition of socket healing rate.

PhD Abstract

Samantha Neil, Department of Archaeology, Durham University

Email: s.a.neil@durham.ac.uk

Supervised by: Professor Chris Scarre (University of Durham), Dr Janet Montgomery (University of Durham) and Professor Jane Evans (NERC Isotope Geosciences Laboratory).

Patterns of social mobility during the Early Neolithic and the development of the Neolithic in the British Isles

Funded by a Durham Doctoral Studentship this programme of research will investigate patterns of social mobility at the beginning of the Neolithic in Britain using strontium, lead and oxygen isotope analysis. The technique can help to identify longer distance mobility between regions with differing isotope packages. As such, data may enable us to comment directly on the nature of contacts between Britain and the continent during the development of agriculture. Comparison of skeletal evidence for age and sex with the tooth enamel isotope ratios of those buried in the earliest dated monuments in Britain will also provide an insight into cultural traditions of residential mobility and social organization during this period. Analysis of teeth that mineralize at different times during childhood, and the extent to which ratios vary between different individuals and burial groups will for the first time provide direct evidence of the locales used for settlement and the degree of mobility of communities. Comparison of isotope data obtained from long barrows with results from humans and livestock buried in causewayed enclosures, another monument type associated with this period, will help elucidate the uses of and relationships between these different forms of monument. In addition, results of this study will enable us to evaluate the hypothesis that causewayed enclosures were built by communities who organized

themselves around conceptually bounded 'territorial' areas.

PhD Abstract

Lindsay Powell, Department of Archaeology, Durham University

Email: l.a.powell@dur.ac.uk

Supervised by: Drs Rebecca Gowland and Andrew Millard

Childhood Health and Care in Roman London: the Isotopic and Palaeopathological Evidence

Roman London has been extensively excavated, particularly over the last two decades, and much of this work has uncovered substantial cemetery sites within and around the City; however, while much of this evidence (archaeological and skeletal) has been presented summarily it has not been the subject of interpretative analysis until now. Interpretations of living environment, population composition and health within Roman London are scarce.

The aim of this project is to develop an understanding of childhood life and death in Roman London through the direct analysis of the physical remains of the children who lived there. This will be achieved by utilising the Wellcome Osteological Research Database to undertake an osteological analysis of a sample of non-adult individuals, including information on growth, stature and non-specific indicators of physiological poor health (e.g. cribra orbitalia, dental enamel defects, periosteal new bone growth). Skeletal remains will also be examined directly and samples collected and analysed for carbon and nitrogen isotopes in order to elucidate diet and weaning. The results of the isotopic and osteological analyses will be integrated to examine the relationship between diet and skeletal indicators of health stress and mortality.

This project is a NERC funded research studentship in collaboration with the Museum of London.

PhD Abstract

Nicole Roth, University of Sheffield

Regional patterns and the cultural implications of Iron Age burial practices in Britain

The research investigates potential regional patterns of Iron Age burial practices and the cultural implications thereof. It is a literary-based assessment of 100 sites dating between the Late Bronze Age and the Late Iron Age that all contain human remains. The analysis consists of a systematic methodology that allows one to assess objectively relationships between burial characteristics, both on the site level and regional scale. This approach indicated a temporal relationship with the manner of disposal (inhumations, disarticulated bones and cremations), which is also regionally distinct. Furthermore, the study highlights other common and repeated Iron Age burial themes, such as differential treatment to infants, incorporating earlier monuments in their burial traditions, using remains to mark places of liminal qualities and economic significance, and bone deposition adhering to a specific spatial pattern with buildings, particularly roundhouses. In essence, the study demonstrates that the processing of the corpse and the spatial context of the human remains deposit are central for understanding the community's perception of the bones and, thus, the meaning of the deposition. The core concept is that Iron Age communities practised various ritual processes, each with a different purpose, but using the same medium - human remains.

PhD abstract

Kirsty Squires, University of Sheffield

An osteological analysis and social investigation of the cremation rite at the cemeteries of Elsham and Cleatham, North Lincolnshire

This thesis provides a detailed osteological and social analysis of the cremated human remains from the early Anglo-Saxon cemeteries (5th–6th centuries AD) of Elsham and Cleatham, both located in North Lincolnshire. Primarily, the results of this assessment address demography, identity and pyre technology. The cremated remains of 566 burials from Elsham and 979 from Cleatham were subjected to osteological analyses. These results were then statistically interrogated in order to observe patterns between the demographic profile of the burial population, their differential grave assemblages, and their spatial distribution within each cemetery. This comprehensive contextual assessment highlights the fact that the Anglo-Saxon cremation rite was deeply symbolic, multi-layered, and communicated a multitude of messages concerning the deceased's identity. A number of significant correlations were found between grave provisions and the demographic profile of the deceased and these are suggested to have related to the construction of various identities through the mortuary ritual. Similarly, social significance was also observed in the cremation process itself. An analysis of pyre technology, which assessed the effects of burning on bone (using histomorphometry and FTIR analysis alongside an examination of the macroscopic appearance of cremated skeletal remains), examined the duration, temperature and oxidising conditions to which the body was exposed, and found duration to be an especially variable factor, and one that may have had social significance. These new results from Elsham and Cleatham significantly increase the number of Anglo-Saxon cremation cemeteries from which

osteological data is currently available. Therefore this study makes an important contribution to our sum of knowledge as well as offering some original social interpretation and analysis.

PhD Abstract

Genevieve Tellier, University of Bradford
(continuing)

A study of the Neolithic and Bronze Age populations of Wales from osteological and contextual data

Analyses of Neolithic and Bronze Age populations in Wales (c. 4000–1000BC) have predominantly focused on the study of burial monuments and associated material culture, while the human remains found within these mortuary structures have rarely been subjected to detailed osteological analyses. This research aims to redress this imbalance through detailed osteological analyses of all Neolithic and Bronze Age human remains from Wales.

The dataset on which this analysis will proceed is drawn from the Historic Environment Records of the four Welsh Archaeological Trusts (Gwynedd, Dyfed, Gwent-Glamorgan and Clwyd-Powys). This dataset contains 3885 records for funerary sites, of which 313 have been excavated. The skeletal material recovered from these sites is held within the National Museum of Wales and within other regional collections. Skeletal material from recent excavations is held by the four Welsh Archaeological Trusts. These collections of burnt and unburnt bone will form the basis of analysis. Whilst this dataset is variable in terms of preservation and character, when looked at as a whole it is extensive and holds great potential to discuss a range of as yet unexplored themes.

The first aspect of this research is focused on the analysis of demographic evidence

(population size, population structure and mortality rates) and palaeopathological data as indicators of the health and lifestyle of these prehistoric communities. The second aspect is concerned with a detailed analysis of funerary practices through the examination of the distribution and character of burial monuments and nature of associated burial deposits. The creation of a complete corpus of archaeological and osteological data from excavated Neolithic and Bronze Age mortuary deposits in Wales will help to clearly define the character and variability of Neolithic and Bronze Age mortuary practices adopted within this region.

PhD Abstract

Joseph Wareham, University of Bradford
(submitted)
Funding: NERC

Mapping Biosphere Strontium Isotope Ratios Across Major Lithological Boundaries. A systematic investigation of the major influences on geographic variation in the $^{87}\text{Sr}/^{86}\text{Sr}$ composition of bioavailable strontium above the Cretaceous and Jurassic rocks of England

Strontium isotope analysis has provided archaeologists with an unprecedented opportunity to study the mobility of humans and animals in the past; however, a lack of systematic environmental baseline data has seriously restricted the full potential of the analytical technique; there is little biosphere data available against which to compare measured skeletal data.

This thesis examines the extent to which geographic variation in biosphere $^{87}\text{Sr}/^{86}\text{Sr}$ composition can be spatially resolved within the lowland terrain of England, in a geographically and geologically coherent study area. Systematically collected samples of vegetation, stream water and

surface soils, including new and archived material, have been used. The potential of these sample media to provide reliable estimates of the $^{87}\text{Sr}/^{86}\text{Sr}$ composition of bioavailable strontium are evaluated under both high-density and low-density sampling regimes, and against new Sr-isotope analyses of local archaeological material.

Areas lying south of the Anglian glacial limit, display a pattern of geographic $^{87}\text{Sr}/^{86}\text{Sr}$ biosphere variation (0.7080–0.7105) controlled by solid geology, as demonstrated by high-density biosphere mapping. Data collected at a wider geographic scale, including above superficial deposits, indicate the dominant influence of re-worked local rocks on the biosphere. These methods have enabled a reclassification of the archaeologically important Cretaceous Chalk domain. Analysis of rainwater and other indicators of atmospheric deposition show that, in this setting, local biosphere variation is not significantly perturbed by atmospheric inputs.

Time-related data from archaeological cattle and sheep/goat tooth enamel suggest that the modern biosphere data can be used to understand livestock management regimes, and that these are more powerful than using an average value from the enamel. A more complete understanding of possible patterns of mobility in a group of humans has been achieved through analysis of material from Winchester and comparison with the Chalk biosphere domain.

PhD Abstract

Liz White, Newcastle University

Giving up the Dead: The Impact and Effectiveness of the Human Tissue Act and the Guidance for the Care of Human Remains in English Museums

This thesis explores the impact and effectiveness of Human Tissue Act 2004 (HTAct) and the Guidance for the Care of Human Remains in Museums (Guidance) upon museums in England and the human remains housed within those museums. Whilst the HTAct is a piece of legislation targeted primarily at the medical profession, two sections are pertinent to museums. Firstly, Section 16 legislates for the establishment of mandatory licensing for various activities involving human remains; including the storage and display of human remains under 100 years old. Secondly, Section 47 gives nine national museums previously bound by the British Museum Act 1963, the power to de-accession human remains under 1000 years old from their collections. Conversely, the Guidance is a document developed by the Department of Culture, Media and Sport in order to guide Section 47 affected museums and other institutions holding human remains through the growing number of requests to repatriate human remains and to offer a set of best practice recommendations relating more generally to the treatment of human remains. In order to understand the impact and effectiveness of the HTAct and the Guidance, an England-wide museum survey was undertaken, the results of which form the basis of this research. Museum responses to this survey would seem to indicate that, other than financially, the HTAct has had little impact upon museums and that, two years after the publication of the Guidance, many museums had still not implemented its best practice recommendations. Indeed, despite the HTAct and the Guidance, results indicate that there are still a number of unresolved issues relating to the treatment of human remains in English museums.

CONFERENCE REPORTS

Brief Report on Primate Pathology Workshops held in East Africa, November 2011

By John and Margaret Cooper

Two workshops were organised by the Gorilla Pathology Study Group (GPSG) in November 2011. Both of these covered pathology and were planned with a view to providing training in diagnostic and investigative techniques in non-human primates for East African veterinarians, primatologists, wildlife biologists and laboratory personnel.

The first Primate Pathology Workshop was held in Karen, on the outskirts of Nairobi, on Wednesday 9th November and was hosted by the Institute of Primate Research (IPR), part of the National Museums of Kenya. The emphasis in this Workshop was on the pathology of captive non-human primates, especially monkeys.

There were 34 registrants from various parts of Kenya and the programme included lectures (anatomy and taxonomy, pathology, zoonoses and laboratory techniques), practical demonstrations, *post-mortem* work and examination of bones and skeletons from the National Museum of Kenya's excellent collection of primate material. Refreshments and lunch were served out of doors under the trees in the setting of the Ololua Forest. Each registrant received a signed certificate and the veterinarians present gained three credits, granted by the Kenya Veterinary Board, towards their CPD (Continuing Professional Development) record for 2011.

The second Primate Pathology Workshop took place in Entebbe, Uganda, on Tuesday 15th November. It formed part of the programme for the Veterinary Meeting of PASA (Pan-African Sanctuary Alliance), and had a strong emphasis on the pathology of free-living and confiscated/orphaned gorillas and chimps.

The audience numbered 55 and three formal lectures (on the history and objectives of the Gorilla Pathology Study Group (GPSG), principles of pathology and sample-taking) were followed by practical sessions, including handling and examination of bones and soft tissues and field *post-mortem* work. Each registrant received a signed certificate.

At both Workshops there were displays of literature relating not only to the pathology of non-human primates but also to the health, welfare and conservation of these and other East African species.

The organisers are grateful to IPR and PASA for hosting the Workshops, to Kenyan, Tanzanian and Ugandan lecturers and demonstrators for their participation and to various organisations overseas for providing literature, equipment and modest funding. Full reports are in preparation and will be available in due course.

Osteology workshop for the blind and partially sighted

By Nicholas Márquez-Grant

On Saturday 21st January 2012, a voluntary workshop was organised at the Oxford University Museum of Natural History to introduce human skeletal anatomy and some of the methods used by forensic anthropologists and osteoarchaeologists to a group of blind and partially sighted.

The workshop was advertised through an audio newsletter arranged by the Oxford Blind Association and through existing contacts with the Ashmolean Museum, Oxford. A total of 12 adult participants signed up (this was the maximum allowed due to the availability of teaching resources and space) alongside their helpers, whether partners, relatives or friends, and four instructors (a total of 24 people were present). Amongst the

participants, some were blind, others had very little vision (2%) and others were partially sighted. They were adults from a variety of age groups.

The workshop was run for approximately two hours, from 10.30am to 12.30pm, with the arrival of students at 10am (and the offer of drink and biscuits) and a 20 minute break at 11.30am. The classroom was organised with four tables arranged to form a square. On each table a plastic skeleton had been laid out which they could handle (chairs were arranged around the table to give maximum access to all participants).

The first task was for the four volunteer instructors to introduce ourselves and to let participants become familiar with our voices and where we were in the room. Administrative information was provided as well as Health and Safety procedures. I introduced the aims and structure of the session which were: 1) to learn about the human skeleton by going through the bones of a plastic skeleton; 2) to further familiarise oneself with human skeletal anatomy by identifying some archaeological (and incomplete) bones; and after a break to 3) provide a very brief introduction into human versus non-human bone assessment, age-at-death and sex estimation methods and palaeopathology.

Each volunteer was assigned to a group of people at one particular table and, under my guidance, we passed round the different bones of the body as the participants explored (by touch) the human skeleton, starting from the skull and ending with the feet. Each bone or group of bones (skull, ribs, vertebrae) was introduced and a few facts given about the skeleton (e.g. the skull is composed of more than 20 bones, there are three types of vertebra, the femur is the longest bone in the body, etc.). This exercise seemed to work extremely well and the interest and participation was overwhelming. Feedback

received at the end of the session indicated that this was an excellent exercise since the students had never realised what the human skeleton was like, since they hadn't seen any images of one. Just feeling what bones make up the elbow, how the hip joint articulates, or what the vertebrae and inside of the skull were like, impressed a lot of people.

This first exercise on the human skeleton was followed by an activity to identify an incomplete bone. An archaeological/anatomical specimen was given to each table and the participants had to guess by touch what bone it was (either the name of the bone or the part of the body). After attempts at identification (the exercise worked really well!), the bone or bone fragment was passed to the next table. In total, four bones or bone fragments were passed once, then another four were handled and passed again, and finally each table had two bones to identify at the same time (this worked well with tables of more than four people to give extra time for people to feel the bone and think about which one it was). In total they looked at 16 bones which they identified.

After one hour, the students (and volunteers!) had a 20 minute break. Then we had another four activities. Each volunteer was in charge of one of these four activities and would move to a different table every 5-10 minutes. The different activities were: a) is it human or non-human bone? b) age-at-death estimation; c) sex estimation; d) palaeopathology. These exercises were accompanied by a brief talk about each one of them.

In the human versus non-human exercise, the volunteer had three human and three non-human bones and explained briefly the differences between a human and a non-human bone (e.g. bone ends, texture, etc.). Depending on the group and ability level at each table, either all six were given

out, or this was restricted to four or two. The age-at-death estimation exercise included a brief outline of skeletal regions used in subadult and adult age-at-death estimation. Casts of the pubic symphysis from young adult to older adult were given out so the students could feel the different patterns according to age. In addition, juvenile bones were handed over and the students were asked to tell the volunteer how they differed from the adult ones (e.g. were the ends missing?). During the sex estimation exercise, the students were able to feel the sciatic notch as well as some traits of the skull (e.g. glabella, nuchal crest) and had to identify whether the traits on their plastic skeleton displayed male or female characteristics. Finally, a number of pathological specimens were provided to compare with their normal reference plastic skeleton. Differences had to be felt and commented upon: osteoarthritis, Schmorl's Nodes, fractures and a button osteoma.

The workshop succeeded beyond expectations. It is always possible to change content or structure or to expand the session but in its form, it certainly seemed to be an extremely beneficial and very interesting learning experience for the students and one that I would wish to see extended to other regions of the country and elsewhere. The downside is that after seeing bones, one student suggested how wonderful it would be to feel the brain, heart, lungs and other organs!

This workshop would not have been possible without the help of Susan Griffiths, Community Education Officer at Oxford University Museums, who very much welcomed my idea with open arms from the very beginning. Susan organised all the space, bookings and liaised with all the participants. Thanks also go to two museum volunteers, Caroline and Anthea (in fact...Anthea Boylston!). I would finally like to thank my line manager Julie Roberts from Cellmark Forensic Services

for loaning me the teaching resources. This is a project that I have been considering for years since sitting at a café in Madrid Airport and the wait has been absolutely worth it. I do hope to continue giving these workshops and I would like to encourage other colleagues if they have time to do the same throughout Britain or abroad. For any further queries or any help, please do not hesitate to contact me (nmg104@hotmail.com).

FORTHCOMING CONFERENCES

Seventh Annual Workshop in Forensic Archaeology and Anthropology

26-30 March, 2012

Cranfield Forensic Institute, Cranfield University, Shrivenham.

This week-long residential short course provides an overview of forensic archaeology and anthropology. It covers both practical and theoretical aspects of both sciences and of many related fields, such as ballistics and explosives, entomology, radiography, geology and geophysics. It is an intense short course that closely resembles the way the forensic MSc programme is taught. All lectures and practical sessions are taught and supervised by internal and external experts with considerable experience in their respective fields. For further information, see www.cranfield.ac.uk/forensics

2012 TB Evolution Meeting

22nd-25th March 2012

Szeged, Hungary

<http://www.szentgyorgyi75.com>

Recent progress in the knowledge of the evolutionary biology of tuberculosis necessitates a new synthesis on this topic. Several questions should be addressed, among them: what is the oldest evidence

of this infection on human and animal remains? When did specific mutation(s) of the modern strains arise? What was the relative importance of the different pathogenic species of the Mycobacterium genus among past populations? Did the pre-contact American TB differ from the Old World infection? How can we explore the dynamics of the host-pathogen co-evolution in the case of tubercular infection? Can we reconstruct a consensual phylogeny of the Mycobacterium genus? What do we know about the evolution of susceptibility/resistance pattern among human populations? How paleopathology and paleomicrobiology can contribute in the research of the TB evolution? How are the main strategies to brake or to moderate the re-emergence of TB? How can the molecular phylogenetics contribute in these fights?

Fifteen years after the first international “ICEPT” meeting on the evolution of tuberculosis (1997, Szeged, Hungary), a new international conference (“ICEPT-2”) will be held in Szeged and will tackle these issues in order to elaborate a new multidisciplinary synthesis on the evolutionary pattern of this human infection. It will facilitate a better understanding of its past, present as well as its possible future. In choosing the exact date of the 2012 TB Evolution Meeting, we have decided to join the Albert Szent-Györgyi’s Nobel Prize Award anniversary Conference Series (23-25th March 2012, Szeged, Hungary) and the 2012 World TB day (24th March 2012) – the 130th anniversary of Robert Koch’s discovery.

The Society for Applied Anthropology (SfAA) 72nd Annual Meeting

March 27-31 2012

The theme of the Program is “Bays, Boundaries, and Borders.”

This meeting invites advocates, activists, policy makers, scholars and researchers to respond creatively to the 2012 program theme, “Bays, Boundaries, and Borders,” with papers, posters, roundtable discussions, sessions or videos on a broad range of issues, problems or topics including those that arise from the interaction of people with their natural or community environments; those that help us better understand or “push beyond” the current boundaries of our knowledge, methods, practices or theories in helping resolve human problems; and those focused on border control and the crossing or transport of goods, people or ideas across borders. [More information can be found on the website.](#)

Please use the following contact details if you have any questions:

Melissa Cope, Society for Applied Anthropology, PO Box 2436, Oklahoma City, OK 73101.
405-843-5113, 405-843-8553 (fax), melissa@sfaa.net.

Annual meeting of the Paleopathology Association

*April 10th and 11th 2012
Portland, Oregon*

<http://www.paleopathology.org/meetings.html>

The Conference Organizing Committee invites you to participate in the 38th PPA annual meeting. The scientific sessions will begin with workshop(s) held on Tuesday morning and podium presentations that afternoon. Podium and poster sessions will continue throughout Wednesday. On-site registration and check-in will begin on Monday evening 11th April.

Annual meeting of the American Association of Physical Anthropologists

April 12th-14th 2012

Portland, Oregon

<http://physanth.org/annual-meeting/2012>

HEA STEM: Improving Learner Experience in Forensic Science Higher Education and Practitioner Training

15th May 2012

Cranfield Forensic Institute, Cranfield University, Shrivenham.

Forensic science poses unique challenges to educators, as it requires a combination of a strong academic base with highly practical and vocational aspects. In today’s market, there is greater demand than ever for forensic science higher education, which poses challenges to universities and colleges trying to satisfy demand whilst providing high quality education. Innovative teaching methods are required to deal with increased numbers of students, diverse student populations, demand for value for money, as well as increased competition with other education providers.

This workshop will give HE forensic science educators and practitioner trainers the opportunity to critically discuss current and innovative methods of teaching, learning and assessment, in order to address the challenges posed by the discipline, and to enhance the quality of the student learning experience. For more information, please contact Dr Anna Williams (a.williams@cranfield.ac.uk)

**European Society for the study of
Human Evolution**

*September 2012
Bordeaux*

A web site <http://www.eshe.eu/> has been created and will be developed in the coming months to host information regarding the society and the up-coming meeting. Information about the venue and the structure of the meeting can be found on the web site. There will be podium presentation sessions as well as a poster session. We are currently accepting paper and poster abstracts. The deadline for abstract submission is the 1st of June 2011. Please be sure to follow the abstract guidelines as described on the web site. All abstracts will be peer reviewed by a panel in order to ensure a high standard of scientific quality. A preliminary program will be available in early July.

The 14th Annual BABAQ Conference

*September 14–16 2012
Bournemouth University*

The 2012 Annual BABAQ Conference will be hosted by Bournemouth University and will run from Friday 14th to Sunday 16th September.

The conference will run at the University's Lansdowne Campus which is located in the centre of Bournemouth within walking distance of the railway station and many of the town's hotels and restaurants.

Sessions will focus on the following themes: Treatments of the Body –from Prehistory to modern Forensic investigations; Palaeoanthropology/ Primatology; The Osteology of Violence and Conflict; plus the ubiquitous Open Session.

Dates and specifications for abstract submission will follow shortly on the BABAQ website (www.babao.org.uk).

The University is unable to offer accommodation; however, Bournemouth is very well supplied with hotels to suit all tastes and budgets. Details of hotels within a short distance of the conference venue will be provided shortly.

**European Meeting of the
Paleopathology Association,**

*September 27th–29th 2012
Lille, France*

<http://www.paleopathology.org/meetings.html>

**Canadian Association for Physical
Anthropology**

*November 7–10 2012
University of Victoria, British Columbia
<http://capa.fenali.net/annual-meeting/current-meeting/>*

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BABAO RESEARCH PROJECT GRANTS 2012

In October 2004 the BABAO committee approved funding for a series of project grants that are available, by competition, to all members of the association. A copy of the application form is found in the Annual Review and upon the Association website.

Two types of grants are available. One type is reserved for research in the contract sector, up to £1,500 (commercial). The other is reserved for the academic sector, up to £1,000. The higher sum available for the commercial sector is to cover the cost of buying out time from their company, to allow sufficient free time to conduct the research. Applications for more than these sums will not be considered. The number of grants awarded each year will depend upon the quality of applications and the state of the association's finances.

These grants may be used to support research in biological anthropology and osteoarchaeology, both to undertake the research directly, and to commission specialist services required in the course of the research project. They may not be used to fund conference attendance. Specialist equipment required to undertake a project is unlikely to be funded unless it is highly specific to the research project, and, if this is the case, the applicant must also demonstrate that the funds could not reasonably be obtained from other sources (such as the developer). The grant should be for a discrete piece of research, or distinct component of a wider research project, and not just a contribution towards general living expenses during a PhD.

If students apply they should specifically state how this grant application relates to other sources of funding for their course. If their PhD is unfunded, applying for a grant to support discrete, freestanding components of their PhD is reasonable. However, if their PhD is funded, they must specifically state why extra money in the form of this grant is required. If the proposal is not clear on this point it is likely to count against the application.

Applicants must be paid-up members of BABAO by 1st April 2012. It is the applicant's responsibility to ensure that they have paid their subscription, and applications from lapsed members will not be considered.

It is appreciated that an applicant may apply to other funding bodies to fund the same topic as their BABAO grant application. However, it is imperative that they inform the BABAO committee immediately if they receive sufficient funding from another source before the BABAO grant competition is decided. It is unethical and unjust to accept a grant for a research project that has already been fully funded from other sources.

The closing date for receipt of applications for the current year is **11th May 2011**. Applications, complete with a two page summary CV, must be sent electronically to the General Secretary (Linda.Fibiger@ed.ac.uk). Please save the files under your surname (eg JonesApplication.doc and JonesCV.doc) and **not** as BABAOapplication.doc.

Grant proposals will then be reviewed by the committee. Notification will be given to the applicants, the BABAO e-mail list and the BABAO webpage.

Grant winners are expected to present their research at the BABAO conference in the year following the award (so 2012 grant winners are expected to give either a paper or a poster at the 2013 conference).

Guidance Notes

Section 1: To be completed by the applicant. Please give full and complete postal address, and, where applicable, affiliation.

Section 2: Please give brief details of current appointment (e.g. postgraduate student, lecturer, contract osteologist with XXXX company, freelance osteologist). If the applicant is a student, please provide details of the degree being taken, the name of supervisor (who does not need to be an association member), and the name of the institution.

Section 3: The brief name for the project may be placed upon the BBAO website.

Section 4: Please provide brief outline details of the research project. These details should be suitable for a non-expert audience, and the grant winner should be aware that these details will be placed upon the association's website.

Section 5: This section requires more detailed description and information about the research project being proposed / undertaken. Do not exceed the word limit for each box. The timetable for research is particularly important as the committee requires the projects being funded to be completed within one year. Where possible, sample sizes etc. should be included.

Section 6: Some institutions / organisation (e.g. some universities) require ethical permissions for research involving human remains or modern populations. Please complete this section only if this is applicable to the proposed research project.

Section 7: Please provide a breakdown of the budget required from the association. Travel should use the cheapest possible suitable mode. Accommodation may be requested where appropriate. All costs should be included in the application.

Section 8: Students must obtain a signature from their supervisor. Applications without a signature from the students' supervisor cannot be accepted. Scan in the signed form and submit it via e-mail.



BABAO c/o Dr Linda Fibiger,
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Grant Award Application 2012

Compliance with the Data Protection Act 1998
In accordance with the Data Protection Act 1998, the personal data provided on this form will be processed by BABAO and may be held in a computerised database or in manual files.

RESEARCH PROPOSAL (Academic)

1. Name of applicant

Title:
First name:
Surname:

Address for correspondence

Postcode:
Tel no:
Email:

2. Present position

Present appointment and employer (If student, please indicate degree in progress, name of supervisor and institution)

--

3. Details of grant requested

Title of project (not more than 15 words)

--

Sum requested
(max £1000)

--

4. Project summary

Information on your research project may be placed upon the BABAO website. Please use this space to provide a description of your research in a way that could be used for a general – i.e. non-expert - readership. (Maximum 100 words)

--

5. Project information

Please provide concise details of your planned research project in the following boxes in order that the research validity and potential of your project can be assessed. (Maximum 500 words in **each** box)

Research question(s) or problem	
Aims & objectives	
Research methods	
Timetable (Research is expected to be presented at the BABAO conference [either paper or poster] in the year following the award.)	
Other Planned Outputs from this Research	

6. Ethical aspects of the proposal

a) Are there any ethical implications arising from the proposed research?

Yes No

If yes, please give details below of what they are and how you intend to address them.

--

7. Budget summary

a) Give a summary of the total costs that will be incurred; then complete the detailed breakdown below.

Summary	Cost (£)
Travel and subsistence	
Equipment	
Analysis	

b) Please *itemise* and *justify* expenditure requested for travel and subsistence, and equipment and materials.

Description	Justification	Cost (£)

c) State whether you already have any funding for your project, and why extra funding is necessary. For example, if you are a PhD student, please explain how this is funded.

--

8. Signature and date

I agree to complete the intended research within the BABAO timeframe, and will provide a break-down of my spending to the BABAO committee.

Signature of applicant

--

Date

--

Signature of supervisor
(for student applicants)

--

Date

--

**All applicants must be members of BABAO by 1st April in year of submission.
Closing date for applications: 11th May.**

**Please attach a 2 page summary CV to this application, and e-mail to Linda Fibiger:
Linda.Fibiger@ed.ac.uk**



BABAO c/o Dr Linda Fibiger,
School of History, Classics and Archaeology,
University of Edinburgh,
William Robertson Wing, Old Medical School,
Teviot Place,
Edinburgh EH8 9AG
e-mail: Linda.Fibiger@ed.ac.uk

Grant Award Application 2012

Compliance with the Data Protection Act 1998
In accordance with the Data Protection Act 1998, the personal data provided on this form will be processed by BABAO and may be held in a computerised database or in manual files.

RESEARCH PROPOSAL (Commercial)

We welcome proposals from individuals working in the commercial sector. Preference will be given to those projects which enable scientific research, such as isotopic analyses, or synthetic site studies beyond the remit of developer funded work. Grants to cover staff time and the subsequent costs to the employer incurred during research or involvement in external projects will also be considered.

1. Name of applicant

Title:
First name:
Surname:

Address for correspondence

Postcode:
Tel no:
Email:

2. Present position

Present appointment and employer (if funding is requested to cover costs incurred to any commercial organisation that is not your present employer, please give details)

--

4. Details of grant requested

Title of project (not more than 15 words)

--

Sum requested
(max £1500)

--

4. Project summary

Information on your project may be placed upon the BABAO website. Please use this space to provide a description of your research in a way that could be used for a general – i.e. non-expert - readership. (Maximum 100 words)

--

5. Project information

Please provide concise details of your planned research project in the following boxes in order that the research validity and potential of your project can be assessed. (Maximum 500 words in **each** box)

Research question(s), non-commercial archaeological / osteological project details or problem	
Aims & objectives	
Materials: please give dates of excavation and stage of any associated commercial project (e.g. assessment)	
Research methods	

<p>Please state why this project cannot be covered by PPG16 funding.</p>	
<p>How will this project assist in your personal and professional development?</p>	
<p>How will this project achieve the objective of bridging the gap between commercial work and that of academia?</p>	
<p>How will your results be disseminated to the public at large?</p>	
<p>Timetable (Research is expected to be presented at the BABA O conference [either paper or poster] in the year following the award.)</p>	

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6. Ethical aspects of the proposal

a) Are there any ethical implications arising from the proposed research? Please include issues of client confidentiality which may prove problematic to the dissemination of your results.

Yes No

If yes, please give details below of what they are and how you intend to address them.

7. Budget summary

Give a summary of the total costs that will be incurred; then complete the detailed breakdown below.

Summary	Cost (£)
Travel and subsistence	
Equipment	
Services of external specialists	

Please *itemise* and *justify* expenditure requested and explain why this cannot be covered by developer funding.

Description	Justification	Cost (£)

8. Signature and date

I agree to complete the intended research within the BABAO timeframe, and will provide a break-down of my spending to the BABAO committee.

Signature of applicant

Date

**All applicants must be members of BABAO by 1st April in year of submission.
Closing date for applications: 11th May.**

**Please attach a 2 page summary CV to this application, and e-mail to Linda Fibiger:
Linda.Fibiger@ed.ac.uk**

