



# Annual Review 2019

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Issue 21

# BRITISH ASSOCIATION FOR BIOLOGICAL ANTHROPOLOGY AND OSTEOLOGY ANNUAL REVIEW

*EDITOR*  
DIANA M SWALES  
University of Dundee

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**Membership details can be obtained from:** Dr Anwen Caffell, Durham University, Dawson Building, Department of Archaeology, South Road, Durham, DH1 3LE. Email: [a.c.caffell@durham.ac.uk](mailto:a.c.caffell@durham.ac.uk)

**Contributions for the Review should be sent to the Editor:** Dr Diana Swales, Centre for Anatomy and Human Identification, University of Dundee, Dow Street, Dundee, DD1 5EH. Email: [d.swales@dundee.ac.uk](mailto:d.swales@dundee.ac.uk)  
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WELCOME TO THE ANNUAL REVIEW  
FOR 2019

*Diana M Swales*  
*University of Dundee*

Welcome to the BABAO Annual Review for 2019!

I am sure I speak on behalf of the membership when I extend a heartfelt thankyou to Charlotte Roberts for returning as President this year. I also thank the President and the Board of Trustees for sharing very important news and information demonstrating the increasing membership, successful academic grant applications, development and review of ethics and practice documents and efforts to increase integration of our student members via social media, and development of the Equality, Diversity and Inclusion (ED&I) sub-group.

This edition of the review celebrates the news and accomplishments of our members including scholarly, personal and professional achievements, grant funding, fabulous outreach activities and numerous developments in the many fields associated with biological anthropology and osteoarchaeology. Some authors have apologised for consistently starting their contributions by stating their department or organisation has experienced a busy year but, let's be honest, it's the truth!

The BABAO review demonstrates how truly passionate and dedicated the membership are and it is a pleasure to collate and share all the contributions with you. I send my sincere gratitude to all who contributed to this volume. It is your efforts and willingness to share your news that inspire and enhance the collegiate nature of the BABAO membership.

I hope you all enjoy the Review and that BABAO has another excellent year.

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ASSOCIATION NEWS

**President's Column**  
*Charlotte Roberts*  
*Durham University*

First, please note that my report for this Annual Review does not cover a full year because I officially stepped in to become President again from August 2019. This followed a request from your President at the time, Jo Buckberry. Those of you who were at the BABAO conference at the Natural History Museum or who have read the Annual General Meeting minutes will know why. I am more than happy to be President for another year and be part of BABAO's ever active, growing, developing and thriving community.

I know from talking to colleagues around the world that BABAO is very much 'on their radar' and they are aware of how well it represents members' interests, is very much concerned with developing infrastructural support for our work, particularly in the UK, and is active in supporting students and other early career researchers. Through its publications, funding mechanisms, awards/prizes, ethics, practice and digital imaging guidance, and standards for recording human remains, we have an organization that is making a real difference to so many people's work and study lives. Here's a summary of various BABAO related news, events and other activities that I must mention in this report:

**Conferences:** What's happened since I met with a number of the Board of Trustees on the 29<sup>th</sup> August in York where I officially took the BABAO Presidency back?

Between that initial meeting and now, we had our Annual Conference, this time at the Natural History Museum in London and very ably organized by Heather Bonney and her team. Although I only attended the AGM of the conference, I know from talking to some of our members that, as usual, it was a great success and an event that everybody enjoyed. I should note that Dr Pia Nystrom, **Senior University Teacher in Biological Anthropology and Primatology**

**(Department of Archaeology, University of Sheffield), was awarded BABAO's Mentor award for 2019. This is a great accolade for Pia's contributions to teaching and developing the next generation in our field.**

Following the conference, an offer to hold the 2023 BABAO Conference came in from Carolyn Rando of University College, London, which was welcomed and accepted. This will follow our conferences this year at Teesside University, in 2021 at the University of Central Lancashire, and in **2022 at the** University of Exeter. Thank you to all these venues for your offers.

**Our Trustees:** As I said last year in this Review, our Trustees remain very busy on your behalf, and I continue to have fantastic support from all the Trustees old and new to their jobs. We are doing very well financially and our membership numbers are very healthy. I will repeat that *'every one of the committee members past and present contribute their copious (!) free time to working for the good of BABAO. Without members that are willing to step up and help us run this fantastic organization, we would not have a BABAO!'* Please consider standing when the call goes out for new Trustees in the future.

I should, again, not forget to thank our hardworking outgoing Trustees, who were presented with a small token of BABAO's appreciation for their hard work at the BABAO conference in London. They were **Heather Bonney** (Museums rep.), **Gaille McKinnon** (Professional Organisation rep.) and **Emily Carroll** (Student rep.). Three new trustees took up their posts with immediate effect: **Trish Biers** (Museum Rep.), **Katrina Lee** (Professional Organisation rep.), and **Katy Faillace** (Student rep) and attended our first Trustees meeting in November.

**Congratulations:** to the following who won the **student prizes** at the BABAO 2019 conference:

**Yuka Shichiza**, of the University of York (The repatriation of Ainu human remains: the role of archaeologists and anthropologists), winner of the **Jane Moore Podium Prize**, and to runner up, **Daniela Tumler** (& Alice Paladin, Albert Zink) of the Institute of Mummy Studies & Ludwig Maximilian

University of Munich) - Multiple perimortem sharp force trauma in an individual from the early medieval cemetery of Säben-Sabiona in South Tyrol, Italy, and to **Alice Rose** (& Sarah Inskip, Tamsin O'Connell, Mary Price, John Robb), of the University of Cambridge (Investigating lifecourses in medieval Cambridge through multi-tissue dietary isotope analysis), winner of the **Bill White Poster Prize, and to runner up, Maia Casna** (& Sarah Schrader, Carla Burrell, Rachel Schats, Menno Hoogland), of Leiden University (A bioarchaeological study of chronic maxillary sinusitis and respiratory health in two post-medieval populations from the Netherlands).

.....and to the successful **BABAO 2019 grant winners:**

**Creighton Avery** (McMaster University) - Eating as Adults: Investigating Dietary Change in Adolescents from Isola Sacra (Italy, 1-4th centuries AD); **Carla Burrell** (Leiden University; Norton Priory) - Imaging diagnosis of Paget's Disease of Bone in the medieval Norton Priory Collection; **Alexis-Marie Jordan** (University of Wisconsin - Milwaukee) Court Farm, Woodleigh: New Investigations of Devon's Only Surviving Iron Age-Early Roman Burial; **Ross Kendall** (Durham University) - Hunting Haemozoin: Tracing Malaria in the Early Medieval Fens; **Leslie Quade** (Durham University) - Stressed to the Tooth? Cortisol from archaeological tooth dentine; and **Kirsty Squires** (Staffordshire University) - The impact of occupation and environment on health and development in nineteenth century Staffordshire.

**Equality, Diversity and Inclusion (ED&I)**

**Sub-Group:** Please go to the Board of Trustees tab on our website to learn more about a new development in BABAO, that of the Equality, Diversity and Inclusion (ED&I) Sub-Group set up in 2018 and chaired by **Lizzy Craig-Atkins**, our Treasurer. As it says on the webpage, it will provide advocacy for ED&I within our discipline, raise awareness of ED&I issues, ensure BABAO activities, including outreach activities, conferences, website, and email forum are inclusive and welcoming to all, share resources via the webpage to enable members to promote ED&I in their own

workplaces and practices share relevant information with members via the mailing list, celebrate diversity within BABAO, and work to address ED&I issues within our discipline, offering support to members where possible. If you have any issues or topics you wish to bring to the attention of the ED&I sub-group, please don't hesitate to contact Lizzy ([e.craig-atkins@sheffield.ac.uk](mailto:e.craig-atkins@sheffield.ac.uk)).

### **BABAO Sponsored Symposia/Workshop**

**Grants:** Another new initiative for BABAO has more recently been launched: funding for members' symposia, study days and skills workshops. The funding is intended to support events for the benefit of BABAO members, for example (but not limited to) enabling the dissemination of research and/or emerging techniques, promoting good ethical practice and EDI initiatives, or providing career development/training opportunities related to biological anthropology (relating to human and non-human primates, extinct and extant) and osteoarchaeology (human and non-human). This support may be via seminars, small symposia, workshops, one-day conferences, or other similar events. This is being coordinated by **Sophie Newman**, our Grants Secretary. Please take advantage of this wonderful opportunity and look at the information under the Grants and Prizes tab on our website.

**BABAO journal/ academic publication to replace the Trends series:** As you now, there has been much discussion over the last few years about a BABAO publication and whether the Trends in Biological Anthropology series should continue. Following last year's conference discussion, I think we have concluded that Trends will finish once the last volume in the series has been published and, at the current time, led by our Commercial rep., **Lauren McIntyre**, discussions are ongoing with the *International Journal of Osteoarchaeology* about this venue being an outlet in some way for our members' research.

**Sale of human remains:** The BABAO Trustees remain committed to tackling, and continue to deal with, instances where human remains are being traded. However, as this remains a subject of great concern to many, we have set up a sub-group to discuss a strategy for addressing the sale of human remains. We

hope that members will continue to contact the Board of Trustees if they see any sales that they think need attention.

### **The BABAO Ethics, Practice, and Digital Imaging documents:**

I must thank **Rebecca Redfern** for all her hard work on updating the BABAO Codes of Ethics and Practice documents, and producing a new Guidance document on Digital Imaging (with help from various other people). This is all very welcome, and all the documents can be found on our website. As an organization I am pleased to see us continuing to take these issues seriously, and I hope all members take note of these documents as they go about their work - whether it is in the academic, museum or commercial sectors, - and that teachers are instilling the importance of ethics and practice in relation to teaching and research on humans, past and present.

**Annual Review:**.....and thank you again to our Annual Review editor, **Diana**, for gently reminding us to send contributions for this Review, and to all of you who have taken the time to send contributions. It remains a great publication that shows how active and diverse our members are.

**Finally:** I hope you all are happy with the way BABAO is running, and that you are getting value for money from BABAO's services to you. However, please do contact me, or any of the other Trustees, if you have any specific thoughts about the future of BABAO.

Best wishes for a peaceful rest of 2020, which I hope is productive for you all in your various roles; see you in Middlesbrough in September.

I have enjoyed my time as BABAO's President and learning more about our organization and its members' work. We have a very strong organization that looks set to continue well into the future.

Charlotte Roberts  
Durham, January 2020

## **Report from the Membership Secretary**

*Anwen Caffell  
Durham University*

BABAO had 542 members at the end of 2019, an increase on the 519 members we had at the end of 2018. The breakdown of our membership remains similar to the previous year: just over half our members were employed (286, 52.8%), most of the remainder were students (193, 35.6%), and we have smaller proportions of unwaged (47, 8.7%) and retired members (14, 2.6%). We also have one institutional member, and one Honorary Life Member.

We recruited 106 new members during 2019 in comparison to 120 during 2018 (both figures including those re-joining); this is still slightly above average for the last four years (102.3). Overseas members make up a quarter of the membership (139, 25.6%). Most of our overseas members come from Europe (78, 56.5%), followed by North America (38, 27.5%) and the Antipodes (14, 10.1%). We also have a small number of members from elsewhere in the world (8, 5.8%). These proportions remain similar to those in 2018.

Following introduction of the new 'New Membership' and 'Change of Details' forms at the end of 2018, data on areas of interest, occupation and student level of study were gathered for the first time or in a more systematic way.

Over a third of members (191, 35.2%) have provided information on their areas of interest. Human bioarchaeology (178, 93.2%) and forensic anthropology (129, 67.5%) were the two most popular areas of interest. These were followed by medical anthropology (64, 33.5%), human evolution (40, 20.9%) and primatology (5, 2.6%). Fifteen members (7.9%) declared another area of interest, including archaeological science, burned human remains, dental anthropology, funerary archaeology/mortuary studies, gender, hunter-gatherers, social anthropology and archaeology, taphonomy, and Roman archaeology.

A hundred members so far have provided information on their occupation; individuals can select up to two categories. Most of these members were employed within academia

(45.0%), followed by commercial archaeology (33.0%); smaller proportions worked in museums/ curatorial roles (7.0%) or as forensic practitioners (6.0%). Twenty-four declared another form of occupation, including medical/healthcare (6), but also administration, IT-related fields, education, publishing and retail.

One-hundred-and-fourteen students (59.1%) have provided information on their level of study. Most are engaged in PhD research (64, 56.1%), with 44 (38.6%) pursuing masters-level courses and six (5.3%) studying for undergraduate degrees.

I would like to encourage all members who have not completed a 'change of details' form recently to do so – the new forms are available from the membership section of [www.babao.org.uk](http://www.babao.org.uk). Please do send me updates on changes in job titles, positions, affiliations, and personal details, and ensure you keep your postal address up to date. Please do not hesitate to contact me if you have any questions regarding BABAO membership: you can email me at [membership@babao.org.uk](mailto:membership@babao.org.uk).

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## **Report from the Grants Secretary**

*Sophie Newman  
University of Sheffield*

In 2019, the BABAO Board of Trustees awarded six academic research grants. Unfortunately, this year there were no commercial applications.

### **Project Summaries**

#### **Creighton Avery (McMaster University, Canada) - £988.32**

*Eating as Adults: Investigating Dietary Change in Adolescents from Isola Sacra (Italy, 1-4th centuries AD)*

Literary sources and bioarchaeological studies have demonstrated that diet in the Roman Empire was dictated, in part, on one's gender and age. Simply put, children ate a more restricted diet than adults, and women ate a more restricted diet than men. However, it is unclear when children began to eat an adult diet, or when boys and girls started eating different diets. Using biochemical and macroscopic analyses, this study explores

dietary difference and change for adolescents at *Portus* (Italy, 1-4<sup>th</sup> centuries AD), in hopes of identifying when boys and girls moved from childhood to adulthood.

**Carla Burrell (University of Leiden, Netherlands) - £1,000**

*Imaging diagnosis of Paget's Disease of Bone in the medieval Norton Priory Collection*

Molecular research exploring Paget's Disease of Bone (PDB) at Norton Priory has identified abnormalities in the p62 protein, suggesting an ancient precursor of contemporary PDB (aPDB). Extensive and frequently atypical skeletal changes of aPDB have been identified in the Norton skeletons. This project proposes to explore the architectural bone structure of aPDB using CT and MicroCT imaging. These data will complement radiographic analysis and permit a more detailed evaluation of the internal structure of bones affected with aPDB against bones considered healthy to characterise the features specific to aPDB. These results will enhance our understanding of this ancient disease.

**Alexis-Marie Jordan (University of Wisconsin-Milwaukee, USA) - £525**

*Court Farm, Woodleigh: New Investigations of Devon's Only Surviving Iron Age-Early Roman Burial*

The excavation of Court Farm (1961) generated Devon's only surviving skeletal remains tentatively dated to the Iron Age-Early Roman period. The burial is the northernmost surviving example of the coastal southwestern cist tradition predominantly centered in Cornwall. No comprehensive analyses or formal report was ever produced for the excavation and the individual has only been studied on a very limited scale. This project aims utilize dietary and mobility isotopic analyses and radiocarbon dating to explore the population demographics and their social implications for the Court Farm individual within this period of cultural contact in the southwest.

**Ross Kendall (Durham University, UK) - £1,000**

*Hunting Haemozoin: Tracing Malaria in the Early Medieval Fens*

Malaria is known to have been endemic in parts of Britain for many centuries. Temperate malaria has great impacts on human health at all ages, having the worst effects on the health of pregnant women and young children. A strong case has been made for the presence of malaria in early medieval England, though the evidence from skeletal analysis has only been indirect, based on an increased presence of the non-specific pathology *cribra orbitalia*. This project aims to confirm directly—for the first time—the presence of malaria a British archaeological population.

**Leslie Quade (Durham University, UK) - £896.60**

*Stressed to the Tooth? Cortisol from archaeological tooth dentine*

The impact of 'stress' on the body is of paramount concern to contemporary societies. Studies addressing stress in the past and how experiences and responses to stressful events have changed or evolved over time have been limited by methodological constraints. To better understand 'stress' in the past, this research seeks to adapt and develop a new method for accessing cortisol hormone concentrations (indicative of stress) from archaeological dental tissues. Teeth represent some of the best-preserved elements of archaeological human remains; therefore, the ability to obtain cortisol concentrations from teeth will have significant implications for studies of stress in the past.

**Kirsty Squires (Staffordshire University, UK) - £1,000**

*The impact of occupation and environment on health and development in nineteenth century Staffordshire*

Throughout the nineteenth century, pottery production and coal mining were the primary industries in Staffordshire. However, little research has explored the effects of these industries on health and development. The proposed research will use major and trace elements, particularly lead and arsenic, to gain an insight into the employment, health and development, and environment of individuals inhabiting nineteenth century Newchapel (Staffordshire). This form of analysis has never been conducted on skeletal remains from



Staffordshire and will reveal new evidence pertaining to the lives of those living during the heyday of the Industrial Revolution.

### **2020 BABAQ Grants Update**

The BABAQ Grants application round for 2020 will open on the 7<sup>th</sup> February 2020, and will close on the 8<sup>th</sup> May 2020 (23:59 UK time).

The application forms as well as further guidance and information on eligibility, how to apply, and what can be funded can be found at the following Web address: <http://www.babao.org.uk/about/researchgrants>

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### **Report from the Student Representative**

*Katie Faillace*  
*Cardiff University*

In the past, student members of BABAQ have contributed to all manner of BABAQ events – and this year was no different! In addition to supporting outreach activities (as detailed in Claire Hodson’s report), students formed a significant portion of presentations and posters at our Annual Meeting at the Natural History Museum in London. Many congratulations to this year’s winners of the student prizes! The Jane Moore Podium Prizes were awarded to **Yuka Shichiza** (University of York) and **Daniela Tumler** (with Alice Paladin, Albert Zink, Institute of Mummy Studies & Ludwig Maximilian University of Munich); the Bill White Poster Prizes were awarded to **Alice Rose** (with Sarah Inskip, Tamsin O’Connell, Mary Price, John Robb, University of Cambridge) and **Maia Casna** (with Sarah Schrader, Carla Burrell, Rachel Schats, Menno Hoogland, Leiden University).

Our online student presence has recently shifted from the BABAQ website student forum to a Facebook group (<https://www.facebook.com/groups/20007038661/>), with the idea that discussions can occur a bit quicker and with more interaction than previously! This group is also exclusive to student members as a safe space for “silly” questions and peer support. We also hope to initiate online ‘events’ in the coming year, such as a journal club and ‘Ask Me Anything’s

with professionals – feel free to send ideas to me! If you are no longer a student but still wish to be part of the online community, we have set up a separate, BABAQ-wide group here: <https://www.facebook.com/groups/BABAQinfo/>

Finally, I want to thank all the members of BABAQ for electing me as your student representative. I’m looking forward to supporting students however I can, and I want to take this opportunity to encourage students to get involved in the upcoming year: volunteer at the outreach days, apply for a workshop grant, submit an abstract for the conference in Teeside! I welcome all questions, comments, concerns, and suggestions regarding student issues, so please do get in touch. You can find me in the Facebook groups, on Twitter (@toothkate), or email of course ([FaillaceKE@cardiff.ac.uk](mailto:FaillaceKE@cardiff.ac.uk))!

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### **MUSEUMS AND OTHER INSTITUTIONS REPORTS**

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

The year ended on an exciting note for me and Gaynor Western with the publication through Oxbow of our book *Manufactured Bodies: The Impact of Industrialisation on London Health* enabling us to see the fruition of the work from the funded research project by the City of London Archaeological Trust (CoLAT). Based upon 22 archaeological assemblages and over 2,000 adult skeletons from London and Non Metropolitan locations using osteological analysis, modern medical imaging, and large scale comparative data sets, the question raised was has our health changed over time and relating it to important health issues today. Such issues include air pollution, nutrition, sedentary lifestyles, technology and ageing which are all pertinent today. The consequences of Industrialisation have certainly had an impact with an ongoing legacy of continuing to shape our lives. 3D models from the project can be viewed on the platform Sketchfab and the project has a Facebook page

and further information that will be added to the Impact Project page accessed on the Centre for Human Bioarchaeology (CHB) web pages.

It was another interesting year for the CHB with the opportunity again to participate in a variety of different and exciting events, assisting researchers with access to the database and being able to engage in interesting outreach events and projects.

Becky and I were able to be part of a number of school sessions here at the museum, Charterhouse and Wellcome. We were also able to support over two weeks four Work Experience students in the summer to gain insight to working in a museum and the varied aspects within it, including being with me in the rotunda with over 20,000 skeletons! Becky led again on the sessions called Written in Bone, a learning workshop for Key Stage 2 based around the Romans with the pupils attending learning about the information gained from the analysis of skeletal remains from the Roman period, seeing associated Roman objects and dressing up. The sessions Bodies of Knowledge run at Wellcome as part of their Youth Engagement Programme for secondary school pupils continued and it was enjoyable for me meeting the pupils from the different schools, a number of whom in their enthusiasm and presentations were definitely potential osteologists of the future. At the Museum of London the Learning team organised again the sessions for Public Health Through Time and we were able to welcome secondary school pupils studying the History of Medicine and for them to have the session with us based around the archaeologically derived skeletal remains as a source of information relating to public health. The Young Osteology Club that I had run in previous years was able to run again and I was able to welcome new girls from the City of London School for Girls. The club enables the girls to come to the museum to learn about the skeletal collections, the archaeological and historical context as well as the methods and processes followed in the analysis of the skeletal remains. We were fortunate to be able to again do two 'Take Over' Days with the girls at Guildhall and Charterhouse, in which

they brilliantly shared with the public all that they had learnt. Becky and I also had a lot of fun when the Learning team here at the Museum of London organised a 'Take Over' Day at the museum with pupils from Moreland Primary School and we supported them when they spoke with the visiting public and other school pupils about what they had learnt from one of the Written in Bone sessions with Becky about the fascinating research findings from the Roman adolescent girl excavated from Lant Street. Another popular part of the 'Take Over' Day was them having a go on the tannoy announcing system at the main desk in the museum foyer!

We were able to run again higher education study days and tours of the rotunda store utilising the CHB teaching collection for assisting student groups both osteological and from the arts and overseas students, covering a broad scope of topics. As ever the Black Death was an ever popular topic but we also covered other time periods, pathologies and ethical issues. We had the pleasure of engaging with students from Centenary University in America, Arizona State University, State University of New York at Oneonta, London School of Economics, and Queen Mary University of London. It was a pleasure to be able to meet the students and to engage with them to share information about the curated collections, and for them to be able to have a practical session with the teaching collection and forum for discussions.

We participated in a number of events being able to speak about the Centre and the archaeological skeletal collections, the different areas of research on the collections and the Impact of Industrialisation research project. This ranged from being able to talk to volunteers at the Archive embarking on a number of interesting projects with the myriad of boxes full of archaeological material and for them to learn about the role of the CHB as a part of the archive and an opportunity for me in meeting the Young Career Osteologists who had worked with our colleagues whilst on the HS2 Euston site project. I also had the pleasure of returning to the Richmond Archaeological society to talk about the findings from the Impact of Industrialisation on London Health

Project just prior to the publication and also for talking to the lovely members of the U3A in Leatherhead to share with them the many delights of learning from the skeletal remains we curate. Behind the Scenes tours of the rotunda in the Museum of London and crypt of St Bride's Church, Fleet Street continue to be popular and I was able to do a number of them for different groups including the Society of Londoners; The Lancet, Open House Weekend in September and always enjoyable as part of the London Month of the Dead in October. We were both fortunately able to attend the BABAO meeting which was excellently organised at the NHM and thoroughly enjoyed seeing everyone and hearing all of the many varied talks and seeing the wonderful array of posters. The quiz masters at the evening meal were splendid and memorable!

We were very fortunate in the year to both be able to go further afield and giving talks abroad with Becky participating in a conference in Pompeii "*Human Remains. Ethics, Conservation, Display*" the first of its kind for Italy, talking about these areas in relation to the Centre and her work bringing together the ethics and standards documents for BABAO. I was lucky to be able to speak as part of the conference at the Acropolis Museum, in Athens "*they are not silent after all... .. Human remains in archaeological museums. Ethics and display*"; talking in the session with the focus on display, talking about display of skeletal remains based on my involvement with the Wellcome Skeletons exhibition in 2008 and the touring exhibitions of 2016 - 2018, and Doctors, Dissection and Resurrection Men.

St Bride's church continues to be very generous and supportive in enabling access for researchers to the important biographical collection retained at the church and which the CHB assists church with curation and research access. There was a mix of osteological and forensic researchers to the crypt investigating a number of different aspects based on the skeletal collection including using metric data, pathologies and modelling. I was pleased to be able to welcome a number of UCL students including Rila Charteris who studied the

changes caused by wearing corsets for her dissertation, Bound for glory: an analysis of osteoarthritis in the spine as a consequence of long-term corsetry; Anna Bekesi who selected a number of individuals with complete crania to do metric analysis using CRANID and comparative data; Nina Ockenhout who spent many hours taking photographs for her study and dissertation ,Analysis of sexual dimorphism on the mandible using three-dimensional geometric morphometrics and structure-from-motion.

Under the supervision of Dr Layla Renshaw, from Kingston University a select number of her forensic students were able to gather data for their projects investigating areas including sex estimation. I was very pleased to be able to have another medical student from St George's Hospital, UCL with a further study based upon the femora associated with studies from the previous years by the medial students working again in conjunction with an orthopaedic surgeon specialising in the field of joint replacements.

The CHB volunteers have as ever been wonderful and continue to be stalwarts in all of the hard work they do for the Centre and who kindly engaged with the Work Experience students to share their many years of knowledge and experience with them. The CHB was also delighted when the volunteers, Veronica, Stuart and David were the winners of the Volunteer of the Year Team in the Marsh Christian Trust Museum Volunteer Awards.

There has been a lot of work with many New museum staff working hard with the collection audits, conservation work and discussions with the designers for the content and themes in the New museum. Unfortunately, the skeletal collections at present remain closed whilst all the planning and work for the new museum is ongoing. We do understand the frustration of this but for the time being we have to continue to wait for decisions but are very happy to continue to share data digitally and if anything is not available on the CHB website or you want to ask about a site or time period do please contact us and we can assist. We look forward to helping researchers with their

studies and for 2020 to be another interesting year.

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## EXCAVATION AND ANALYSIS OF HUMAN REMAINS IN 2019

**Allen Archaeology Ltd**  
*Natasha Powers*

### ***Excavation and Contract Work:***

Bishopwearmouth Townscape Heritage Scheme, Sunderland (SUBW 19)

As part of a National Lottery Heritage Funded redevelopment project focussed around Sunderland Minster Church, Allen Archaeology carried out the recording of memorial stones and archaeological monitoring of groundworks including the demolition of the boundary wall of the cemetery for Sunderland City Council. The archaeological monitoring revealed that structural remains survived from 18th–19th century buildings to the south of the churchyard and indicated that the churchyard itself had originally extended beyond the current boundary. Eight, possibly nine, burials were uncovered during the works and were recorded and left in situ. Disarticulated bone representing a minimum of six adults, seven subadults and an infant was also recorded and was reinterred on the site in accordance with the terms of the Bishops Faculty for the works.

Staunton Harold Church, Ashby-de-la-Zouch, Leicestershire (AASH 19)

At the request of the National Trust, an assessment was made of the condition and number of burials present in the church crypt to enable a management plan to be compiled. The crypt was believed to have been impacted upon by regular flooding and by break-ins during the 1990s. The crypt contains the remains of at least 30 people, including at least two children. All of the burials are in lead caskets a number of which were originally contained within decorated wooden coffins, some of which remain. Those coffins which can easily be dated by style of the coffin fittings and/or from inscriptions predominantly

date from the 19th century, with the exception of a child's coffin dating from 1650

St Georges' Church, Brentford, London Borough of Hounslow, (HHS14)

St. George's is a 19th century parish church that was built to replace the late 18th century St. George's Chapel and its associated cemetery. Plans to redevelop the church for residential use, impacted upon the early cemetery and resulted in a scheme of archaeological works carried out by Allen Archaeology Ltd over several years. Analytical work is now complete, and the project is due for publication in 2020. The assemblage has been reburied at Brookwood, Surrey and The Willows Cemetery, Canvey Island.

78 Hartford Road, Huntingdon Road, Cambridgeshire, (HUTS 18)

A small collection of disarticulated human bone was recovered from the fill of a northwest to southeast orientated ditch and a single element from the preceding evaluation trench. The redeposited remains represented a minimum of one adult and one adolescent. It is highly likely that they originate from the nearby medieval priory of St. Mary's, although this cannot be definitively established. The remains add to those found in the preceding evaluation, which also represented at least two individuals.

Lincoln Cathedral Connected (LICC 17)

During excavations as part of the National Lottery-funded Lincoln Cathedral Connected project, which includes landscaping, restoration and renovation works, more than 50 complete and partial burials have been recovered, primarily from the West Front. The area between the West Front and the Exchequergate Arch is known to have been used as a burial ground for not only the Cathedral but the church of St Mary Magdalene, in nearby Bailgate. Many of the burials were in stone-lined graves and it appears that they may be of an earlier medieval date (12th or 13th century), with later burials truncated by the extensive landscape reduction undertaken in the area by the Victorians. One of the many complete skeletons was that of a

priest who had been buried with a pewter chalice and paten. Fieldwork is ongoing.

Former Gasworks, Bury Road, Thetford, Suffolk, (THBR 16)

During excavations in advance of a residential development on Bury Road, Thetford in Norfolk, one context of human bone was recovered from the fill of a circular pit. The fill also contained fragments of 10th and 11th century pottery. The condition of the edges of the bone suggested that it had been redeposited possibly several times. Although no clear date can be established for the remains, it is most likely to have been from a burial associated with St. Edmunds church which was previously identified during excavations which took place in the 1950s. Further finds of human remains were made in the vicinity in the 1960s and 1970s.

St Peter and St Lawrence Church, Wickenby, Lincolnshire, (WISP 19)

A scheme of archaeological works took place within the graveyard of St Peter and St Lawrence church, a Grade II listed building erected originally in the 12th century. The excavation revealed three probable grave cuts.

North Street, Winterton, North Lincolnshire (WINS 18)

Allen Archaeology Limited was commissioned by Keigar Homes to undertake a large open area excavation in advance of a residential development. Whilst geophysical survey and evaluation trenching had been conducted between 2014-2015, showing that burials were likely to be located here, it was only with excavation that the full extent of the cemetery became apparent. The northern part of the site was identified as an area of settlement and intensive domestic and possibly light industrial activity associated with the settlement, with a probable trackway flanked by ditches running east - west. The area was subdivided into a series of subrectangular enclosures and includes the remains of a stone building towards the east side. In total 91 burials and some disarticulated human bone, were recovered making this the largest Roman cemetery uncovered in North Lincolnshire. Two distinct types of burials have been

identified, with some individuals appearing to have been buried in coffins, and others in shrouds. Dating evidence suggested that the site was occupied from the early Roman period possibly through to the 4th century AD and may have had its origins in the late Iron Age. The graves were generally neatly arranged in rows, suggesting planning and maintenance of this burial ground over time. There was also evidence of so-called deviant burial practices with several decapitation burials. And there was one double burial on the site, the two occupants apparently buried slightly facing towards one another. Despite the promise of the evaluation where a richly furnished female burial was recovered, very few grave goods and almost no personal items have been found. One grave contained a leg of lamb and there was one complete ceramic vessel. The site is currently awaiting assessment.

Nunhead Cemetery, Southwark (SONC 19)

Allen Archaeology have been commissioned to undertake archaeological monitoring of works in Nunhead cemetery, involving the recording of monuments in advance of and during ground clearance works to facilitate access for the rebuilding of the boundary wall. Work is currently ongoing.

AAL grey literature is uploaded to the ADS and can be found at [www.archaeologydataservice.ac.uk/archives/view/greylit/browse.cfm?unit=AllenArchaeologyLtd](http://www.archaeologydataservice.ac.uk/archives/view/greylit/browse.cfm?unit=AllenArchaeologyLtd). You can keep up to date with our projects, vacancies and other news by following us on twitter @allenarchaeo and via our website at [www.allenarchaeology.co.uk](http://www.allenarchaeology.co.uk).

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## Cotswold Archaeology

*Sharon Clough*

### ***Highlights-***

2019 has seen another busy year for Cotswold Archaeology with more cemetery sites excavated and post-excavation work continuing on long term projects as well as smaller sites.

Highlight of the year was completing the work on the Anglo-Norman execution cemetery at Weyhill, Andover and then telling the story by

filming with Tern TV for their series 'Bone Detectives'. Publication is out due Feb/March 2020.

Sharon Clough presented her (re-)discovery of the Cannington Cave bones at the BABAO conference which, thanks to the BABAO commercial grant, radiocarbon dating revealed they were early Mesolithic in date.

CA welcomed several researchers to analyse the current collections. Please note that Hinkley Point C post-Roman cemetery is now deposited at Museum of Somerset (as of February 2020).

### **Key Sites of 2019**

Childrey Warren, Oxfordshire – water pipeline revealed Iron Age and Roman period burials.  
Wroughton, Wiltshire – Iron Age and Roman period burials

Perrybrook, Brockworth, Gloucestershire – four prehistoric cremation burials and four Roman burials

Cheddington, Buckinghamshire – Roman/early Post-Roman double burial of two adult females, of which one probably died in pregnancy, pre-term foetus was found in the abdomen area. Further grave of male close by.

Bus station, Hereford, Herefordshire – Quaker burial ground dating to between AD 1676-1820.

Tutshill (near Chepstow), Gloucestershire – Single crouched skeleton radiocarbon dated to Early Bronze Age.

Various other sites also analysed – please contact CA for details. Cotswold Archaeology deposit all their grey literature reports with Archaeology Data Service and in their online library

<http://reports.cotswoldarchaeology.co.uk/>

**Email:**

[sharon.clough@cotswoldarchaeology.co.uk](mailto:sharon.clough@cotswoldarchaeology.co.uk)

with any queries

Follow our updates on twitter @cotswoldarch

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## **Headland Archaeology**

*Suzanne McGalliard*

Headland Archaeology have expanded their Post-Excavation department and appointed Sue McGalliard as Osteoarchaeologist. Sue is also a Senior Osteologist on HS2 South as part of MOLA Headland Infrastructure (MHI).

Headland Archaeology are currently working on a forthcoming BAR monograph relating to the excavation of almost 2,000 skeletons and the associated grave goods from St Peter's Burial Ground, Blackburn. 'Life and Death in a Lancashire cotton town' is due for publication in 2021. An external research project using samples from the assemblage was undertaken which tested the use of ear ossicles as an indicator of maternal and infant health in utero. The results of this project were published in 2019 in the Annals of Human Biology.

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## **Museums of London Archaeology**

*Michael Henderson*

The MOLA Headland Infrastructure (MHI) osteology team in London were joined by Suzanne McGalliard from Headland Archaeology as part of the archaeological excavations at St James's Burial Ground, Euston. The team also welcomed Early Career Osteologists: Louisa Cunningham, Katie Dalmon, Greer Dewdney, Robert Dunne, Elizabeth Eastlake, Agata Kostrzewa, Liesbeth Massage, Jennifer O'Donnell, Abigail Parslow, Linsey Toase and Jessica Watters who also joined the team at St James's. At Park Street Gardens, Birmingham, the osteology team were joined by Harriet Bryant-Buck, Erna Johannesdottir, Peter Tovizi and Amber Williams.

### **MOLA (Museum of London Archaeology) Team**

*MOLA London:* Niamh Carty, Michael Henderson, Elizabeth L. Knox, Don Walker

*MOLA Northampton:* Chris Chinnock

### **Department Reports:**

MOLA osteoarchaeology blogs can be found on the organisation website:

<http://www.mola.org.uk/blog/osteoarchaeology>

<https://www.facebook.com/MOLArchaeology>

<https://twitter.com/MOLArchaeology>

Niamh Carty presented a talk entitled 'Health and disease in the 19th-century Baptist congregation at Mare Street, Hackney' at the SCA Conference (Society of Church Archaeology) in St Albans in September.

Chris Chinnock took up the position of Field Archaeologist in Residence at the University of Cambridge, spending a term conducting further research using stable isotopes to uncover more about Saxon diet, migration and mobility based on a burial ground discovered at Ketton Quarry in Rutland.

As part of a programme of community and engagement projects undertaken during the HS2 enabling works at Park Street Burial Ground, Birmingham, the osteology team has been involved in a series of 'Osteology Live' workshops using a digital classroom to live stream sessions to science classrooms in Birmingham. The sessions are related to the KS3 National Curriculum. The team also contributed to the medieval festival held at Weoley Castle in Birmingham in July.

### **Excavation and Contract Work:**

The MOLA osteology team in London has predominantly spent 2019 involved in the excavation work as part of HS2.

The archaeological excavation of St James's Burial Ground, Euston, was carried out by a team of over 100 archaeologists and osteologists from MOLA Headland Infrastructure (MHI), working on behalf of Costain Skanska Joint venture (CSjv) for HS2. The main archaeological excavation commenced in autumn 2018 and concluded in September 2019. The burial ground was used by the Parish of St. James, Piccadilly between 1789 and 1853. This was divided into four areas by social status with the wealthiest buried in the first ground to the west, nearest a chapel, while the poorest were buried in the fourth ground to the east. The expansion of Euston station in the late 19th century removed a large number of burials from the eastern end of the

ground. Over 11,000 burials were archaeologically excavated, of which a sample of c. 4500 were retained for further osteological analysis. A large proportion of these had surviving name plates.

Excavations at Park Street Burial Ground in Birmingham by MHI on behalf of Laing O'Rourke and J. Murphy & Sons Ltd (LM) for High Speed 2, were carried out from September 2018 to July 2019 with consultants from WSP. Over four thousand burials were archaeologically recovered from this 19th-century overflow ground for the parish of St Martin's. During this period, the town became a powerhouse of the Industrial Revolution leading to a rapidly expanding population and increased crowding of the urban centre. Workshops specialising in metalwork, jewellery and button manufacturing were a feature of Birmingham's success.

Initial study of the skeletal assemblage from Park Street has identified many of the metabolic and infectious conditions associated with 19th-century urban life, as well as evidence of injuries resulting from accidents and interpersonal violence. Patterns of manual osteoarthritis observed in some individuals may reflect intensive, skilled piecemeal labour, typical of the town's specialist labour force. Although Park Street was a ground chiefly for the poor, spatial analysis has identified evidence of socioeconomic variation, with increased use of brick-lined tombs and family vaults in the south area. The unexpected discovery of burials containing anatomical dissections in the north area of the burial ground promises to expand our knowledge of medical teaching and the anatomy trade following the 1832 Anatomy Act.

Niamh Carty and Elizabeth Knox completed the assessment of ca. 300 cremations and 150 inhumations that were excavated in collaboration with Headland Archaeology in advance of the A14 Cambridge to Huntingdon road improvement scheme. These human remains date from the Neolithic to the Anglo-Saxon period and full analysis and reporting will begin in 2020.

The MOLA London team is also working on the on-going analysis of an assemblage of ca. 800 skeletons associated with a 17th-century

cemetery at St Thomas's Hospital at London Bridge.

Chris Chinnock reported on the late 5th to early 7th century Anglo-Saxon cemetery at Stanton, Suffolk. This includes an osteological analysis on the remains of 67 individual interred in a cemetery centred on a prehistoric round barrow.

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**Oxford Archaeology  
Heritage Burial Services**  
*Compiled by Lauren McIntyre*

**Team**

**Oxford Archaeology South:** Louise Loe (*Head of Heritage Burial Services*), Lauren McIntyre (*Osteoarchaeologist*), Mark Gibson (*Osteoarchaeologist*), Helen Webb (*Osteoarchaeologist*), Camille Guezennec (*Trainee Placement*)

**Oxford Archaeology East:** Natasha Dodwell (*Osteoarchaeologist and Head of Finds and Environmental*), Zoe Ui Choileain (*Osteoarchaeologist and Finds Assistant*)

**Oxford Archaeology North:** Stephen Rowland (*Archaeology Project Manager*)

**Fieldwork**

Cambridgeshire

Land off Farriers Way, Warboys, Cambridgeshire

This four ha. excavation uncovered evidence for dense settlement activity, 'family' group burials, tucked into the corners of field systems and isolated burials. The settlement activity is unusual in that it dates from the LIA through to the 5th century AD. Assessment of the burials has been completed. They include a total of 22 inhumations and five cremation burials. They are presumed to be Roman-British in date, although those without direct dating evidence will be radiocarbon dated. Burial rites are varied and include supine and crouched inhumations, two decapitation burials, evidence for coffins, and urned and unurned cremations. Most of the burials were accompanied by grave goods including pottery, brooches and pins. Of interest is the presence of a possible Mithraic pin in the grave of a four-year old child.

Land off Lucks Lane, Buckden, Cambridgeshire

A Middle Bronze Age cremation cemetery, comprising 51 urned and unurned burials, was identified at the very edge of a large, high-status Anglo-Saxon settlement. The settlement comprised of several post buildings, including an aisled hall and gruben hausen. Although there was some intercutting of cremation pits, there was evidence of possible grave markers in the form of small posts. In addition, the edge of the burial group was in a linear arrangement, as though burials were respecting an extant boundary such as a hedge. Excavations are still ongoing, but the vessels have been lifted and excavated in the Unit. Analysis of the cremated bone for a PXA has commenced.

In addition to the prehistoric cremation burials, the articulated bones of a leg and foot were recovered from one of the Saxon wells. No evidence of truncation was observed, so it appears as though a disarticulated leg may have been thrown into the well!

New Trumpington Park 7 Ride Site, Junction 11 of the M11, Cambridgeshire

Two skeletons were identified during an evaluation, adjacent to the M11 on the site of a new P&R development in SW Cambridge. Unusually - for an evaluation - we were asked to excavate both skeletons; minimal recording has been done but the remains are those of an adult and a juvenile, possibly Anglo-Saxon in date.

Old School Lane, Upware, Cambridgeshire

This excavation generated great excitement locally as one of the few stone-built Romano-British structures in the County (possibly an aisled barn) was unearthed. In addition to the stone building, the funerary activity on the site, although small in scale, was also of interest. Two adult males, one with its head to the east the other with its head to the west, were found in the upper fills of a Romano-British enclosure ditch, lying directly on top of each other, on their sides in a flexed position. In addition, four discrete perinatal/neonatal burials were recovered from shallow scoops, directly associated with the Romano-British



structure. A seemingly isolated cremation burial, believed to be contemporary but awaiting a carbon date, was also identified.

### Dorset

#### Dorset Visual Impact Survey

Three inhumations have been excavated from Bronze Age barrows, including one from a barrow ditch and two from an earth cut pit, one on top of the other. Three inhumations were also recovered from the upper fill of a ditch, suspected to be the remains of an earthen long barrow. Pottery from the ditch suggests it is Neolithic in date: the inhumation burials appear to be later insertions as they were cut into the upper ditch fill. In addition, a disarticulated a foot was found in a prehistoric pit.

Four urned cremations and one unurned cremation burial have also been recovered from the site. All five are associated with barrows and are likely Bronze Age in date. Another urned cremation was recovered during the evaluation in 2018. Fieldwork is ongoing.

### Gwynedd

#### Bethel Road, Caernarfon to Bontnewydd bypass

A cremation cemetery, comprising approximately 40-50 burials in a cluster of small, circular pits, was found at a confluence on the River Cadnant. All of the cremations were unurned, with the exception of one which was found in an inverted, middle Bronze Age bucket urn. The cemetery may have respected a ford over the river, as a stone causeway was constructed at this point; whilst it is presently uncertain whether this occurred in the Bronze Age, the stone causeway was certainly there by the Roman period.

### Norfolk

#### Gunvill Farm, Wymondham

A small quantity of cremated bone was recovered from the ditch fills of an Early Bronze Age monument. This was in addition to eight deposits of highly fragmented Late Bronze Age cremated bone from small, truncated pits.

### Oxfordshire

#### Sutton Courtenay Lane, Didcot

Excavations at this site found a total of 14 articulated inhumation burials, including three from graves, one from the top of a posthole and 10 from the upper fills and bases of Roman ditches. This was in addition to six deposits of disarticulated bone from Roman ditches and one early Roman urned cremation. One of the articulated skeletons, from one of the graves, has been dated to the Saxon period, by association with a 5th-6th century knife. The date of the other inhumations and disarticulated bone will be confirmed by a programme of radiocarbon dating.

Assessment of the human bone has identified possible peri-mortem blunt force trauma on the left temporal arch and left mandibular ramus of one of the skeletons from one of the ditches. In addition, multiple incidences of peri-mortem sharp force trauma were observed on the ribs (both left and right), spine, left arm and hand of another skeleton from one of the graves.

As well as the above sites, individual or small numbers of burials were found at the following sites:

- M4 Smart Motorway, Berkshire (2x unurned cremation burials, Bronze Age)
- The Heights Primary School, Reading, Berkshire (2x cremation burials, Iron Age)
- Land south-east of the A38 Twigworth, Gloucestershire (1x inhumation, date unknown pending radiocarbon dating)
- Land west of Frogfurlong Lane, Innsworth, Gloucestershire (unburnt disarticulated bone from eight features and cremated bone from three earth cut pits, middle Iron Age to early Roman)
- Ruddle Court Farm, Forest of Dean, Gloucestershire (four urned and two unurned cremation burials, including one burial in a glass cremation urn from a sealed, undisturbed context, Roman)
- Grange Paddocks Leisure Centre, Hertfordshire (1x inhumation burial, Roman)

- 4 and 5 Tower Green, Tower of London (a single disarticulated ulna midshaft, unknown date)
- Armstrong Road, Littlemore, Oxford, Oxfordshire (1x crouched inhumation burial of possible Iron Age date)
- Dunmore Road, Abingdon, Oxfordshire (1x inhumation burial, unburnt disarticulated bone from three contexts, cremated bone from two earth cut pits. Unburnt bone tentatively dated as middle Iron Age, burnt bone is of unknown date, pending radiocarbon dating)
- Gill Mill, Oxfordshire (burnt bone from nine deposits and 1x disarticulated human cranium, Iron Age)
- Great Tew, Beaconsfield Farm, Oxfordshire (unburnt disarticulated bone from one ditch fill, unknown date)
- Apex Park, Daventry, Northamptonshire (1x unurned cremation burial, unknown date)
- Fernwood Northern Extension, Nottinghamshire (1x urned cremation burial, Bronze Age)
- Hinkley Point, Somerset (1x inhumation burial, unknown date)
- Foxbridge, Swindon, Wiltshire (1x partial articulated burial, unknown date)

## **Post-excavation analysis/reports**

### Anglesey

Bryn Celli Bach (for UCLAN)

A total of 19 deposits were submitted for osteological analysis. Features containing burnt bone comprised two layers of 18th/19th century trench backfill, two subsoil layers, four deposits from inside a cairn, three earth cut pit fills, two layers immediately overlaying earth cut pits, one cist fill, one fill from a curvilinear feature, and two urned cremation burials. One of the urned cremations contained a Bronze awl and small biconical ceramic vessel, which also contained cremated bone. The cairn was radiocarbon dated to the middle Bronze Age.

The remains of a minimum number of 16 cremated individuals were present. At least two of these were middle adults, one a younger child and one a neonate. One adult was female and two were of indeterminate sex. Two further individuals were aged over 16 years, and another two over 18 years.

### Buckinghamshire

Glebelands, Milton Keynes

This assemblage comprised one urned and five unurned deposits of cremated human bone. Four deposits were of a low weight (all less than 50g) and consisted of at least one individual each, probably adults. Sex could not be estimated. In addition, two deposits had very high weights (2326.2g and 4979.0g, respectively) and contained a minimum of three individuals each. The first comprised two probable adults (one unsexed and one possible female) and a juvenile of less than two years of age. The second deposit comprised two probable adults (one unsexed and one possible male) and a juvenile of less than 16.5 years of age.

### Cambridgeshire

Cherry Hinton, Hatherdene

Osteological analysis of 128 skeletons, 41 deposits of disarticulated bone (all early Saxon date) and seven Roman period urned cremation burials is now complete. Seventeen skeletons were sampled for aDNA and isotopic analysis, to investigate kinship, diet and migration. Full data analysis and reporting will commence in 2020.

Field End, Witchford, Cambridgeshire

This site, on the Isle of Ely was excavated by OAE in 2016 but an article has only been published in PCAS this year. The site included evidence for the continuation of funerary activity from the Middle through to the Late Bronze Age. Thirty-five unurned MBA cremation burials and five inhumations are described. This is in addition to a smaller LBA group of burials comprising of four unurned cremations and a single female inhumation with an in utero foetus (almost full-term). The latter was interred within a small sub-circular post-built structure, which has been interpreted as a possible shrine. Contemporary settlement

activity was also identified at the site in the form of post-built structures, wells and scattered pits, as well as rare evidence, in the form of fragments of sword moulds for sword production.

### Kent

Peugeot Garage, Canterbury (for Canterbury Archaeology Trust)

Osteological analysis of the 200 skeletons from a late Roman urban cemetery at Peugeot Garage, Canterbury is now complete. The MNI for the full assemblage was 205 (204 unburnt individuals and one cremated individual). Of the adults, 33 were female, 41 were male and 11 were of indeterminate sex. Analysis of the aDNA of 20 adults showed that one of the skeletons of indeterminate sex was male. Seven juvenile skeletons subject to aDNA analysis comprised three females and four males. If osteological sex data and DNA sex data are combined, the total number of females is 36 and the total number of males is 46 (including adults and juveniles and counting the osteologically sexed female as male).

Post-cranial indices and adult female statures were within the expected range for the period, but adult male stature was comparatively low. Rates of dental and skeletal pathology were consistent with those reported for other Romano-British populations and for Roman Britain. A possible case of chronic recurrent multifocal osteomyelitis (CRMO) was identified, affecting both femora of a juvenile skeleton. Isotope analysis (by M Jay, J Montgomery, G Nowell and D Gröcke) showed that 16 of the sampled individuals were local in terms of childhood geographic origin. Three skeletons were incomers to the site but were probably from the general region or elsewhere in Britain. One skeleton was an immigrant into Britain. Dietary isotopes were indicative of an omnivorous diet, with females eating fewer marine resources than their male counterparts. Ancient DNA analysis identified one pair of likely second-degree relatives and a group of three individuals likely to comprise parents and offspring.

### London:

St Paul's Church, Hammersmith

This year, we completed the post-excavation analysis on an assemblage of post-medieval skeletons from St Paul's Church, Hammersmith. A total of 649 skeletons were recovered during extensive archaeological excavations by OAS back in 2009-10. Most skeletons were recovered from grave stacks (331 graves in total) and had been buried in wooden coffins with metal fittings. A small number of burials were found in lead coffins. Data analysis is now complete, and the production of the published monograph is underway.

### Nottinghamshire

Chapel Lane, Bingham

This late Roman cemetery, near *Margidunum*, featured in last year's round up, but had only been assessed. Full analysis has now been completed. The assemblage comprised a total of 54 articulated inhumations, fragments of disarticulated bone from four grave fills, four ditch fills and one pit, one urned cremation burial and a fragment of cremated human bone from one grave fill. The MNI for the full assemblage was 65 (63 unburnt, two cremated). Overall, the assemblage was found to be relatively typical of a Romano-British urban assemblage.

Isotopic analysis of a sample of skeletons showed that all the individuals were local in terms of childhood geographic origin. In addition, one disarticulated femur, from the fill of a pit, presented evidence of carnivore gnawing and deliberate modification using a stone or metal tool. This bone was radiocarbon dated to 80 - 222 cal AD. Although these findings are more consistent with Iron Age practices, this evidence may reflect the continuation of older customs. Lastly, evidence of leprosy was identified on one adolescent skeleton, radiocarbon dated to 425 - 565 cal AD, so early Saxon in date and rare for this part of the country. Isotopic results for this skeleton are consistent with the local environment.

### Northamptonshire

Land at Warth Park Raunds, Meadow Lane, Raunds

Analysis has been completed on the 5 Romano-British inhumations and single cremation burial, that were excavated in 2017. Comprising features from the Bronze age to Anglo Saxon periods, the western part of the site included dense Romano-British settlement activity including ditches, a kiln and six stone lined wells. The burials were isolated and not obviously related to any features. Four inhumations were aligned East to West with a single burial being on a North to South alignment. The presence of large nails around the burials would suggest the use of coffins. All five individuals were adult and both males and females are represented. Disarticulated skull fragments were also recovered from four Iron Age pits on the site.

### Oxfordshire

Carterton East

One unurned cremation deposit was recovered from a shallow sub-circular earth cut pit, located within the centre of a ring ditch. This deposit was radiocarbon dated to the middle Bronze Age.

The deposit contained at least one individual, an adult possible male aged over 18 years.

Crab Hill, Wantage

One articulated inhumation burial, and two contexts containing unburnt disarticulated bone were excavated at Crab Hill. The articulated skeleton was located in the north east corner of an earth cut pit, within the upper fill. Unburnt disarticulated bone was also recovered from a pit fill, as well as from the fill of the flue/rake out pit of a corn dryer. These remains were tentatively dated to the Iron Age/Romano-British period. The total assemblage MNI was four, comprising one neonate, one young child, one juvenile aged <18 years and one unsexed adult aged >18 years. Evidence for pathological lesions were limited to indicators of possible metabolic disease (vitamin C deficiency) affecting the disarticulated neonate.

### Somerset:

Bridgwater Gateway

Full analysis of this assemblage, associated with a Bronze Age ring barrow ditch, identified a minimum number of 20 individuals. At least two of these were adults aged over 18 years, and one of these adults was possibly male.

### International:

Fromelles, Northern France

In March, Oxford Archaeology re-convened with the Data Analysis Team at Australia House, London, to continue efforts to identify 250 soldiers, excavated by OA in 2009 from unmarked WWI mass graves in Fromelles, Northern France. The names of seven soldiers were recommended and accepted by the Identification Board. A total of 166 soldiers have now had their names restored.

Al Ula, Saudi Arabia

Excavation and analysis of Bronze Age human skeletal remains from 11 cairns, cists and associated features.

Manoel Island, Malta

Desk based assessment and walk-over survey.

### **Selection of publications with a funerary/osteology component**

Biddulph, E. Brady, K. Simmonds, A., and Foreman, S. (eds.), *Berryfields. Iron Age settlement and a Roman bridge, field system and settlement along Akeman Street near Fleet Marston, Buckinghamshire.* Oxford Archaeology Monograph No. 30.

Loe, L., Brady, K., Brown, L., Gibson, M., and Smith, K (eds.). 2019. *Living and dying in Southwark 1587-1831. Excavations at Cure's College Burial Ground, Park Street.* Thameslink Monograph Series 3.

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### **Teaching/outreach etc.**

#### *Oxford Brookes University teaching*

For the fourth year running, Heritage Burial Services has delivered the undergraduate modules on *Human Osteology* and *Palaeopathology*, during the Autumn semester.

#### *Oxford University Department of Continuing Education (OUDCE) teaching*

Heritage Burial Services has continued to deliver practical osteology sessions on the Diploma and Advanced Diploma in Archaeology.

#### *Media*

Britain's Most Historic Towns (BBC1) – Civil War Oxford, featuring a burial found at St Cross College and dating to the time of the civil war (L Loe)

Bone Detectives (Channel 4) – Stoke Quay, Ipswich. Selection of three Medieval burials from this site (L Loe)

Mystic Britain (Smithsonian Channel) – Bryn Celli Bach (L McIntyre)

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### **Sedgeford Historical and Archaeological Research Project (SHARP) Human Remains Team**

#### *Sophie Beckett*

The SHARP human remains team were delighted to start the year with news of successful funding applications for their project 'Volunteering with a Disarticulated Community: Towards Re-association of Anglo-Saxon Bones'. A grant of £30.5K was awarded by the National Lottery Heritage Fund as well as donations received from Norfolk and Norwich Archaeological Society and Sedgeford Parish Council and members of the public. The funding has enabled SHARP to run a new, free, training course 'Recording Disarticulated and Commingled Human Remains in Osteoarchaeology' with follow on opportunities for volunteers to work with the SHARP disarticulated bone assemblage. An informative display about the Heritage Fund project was put together by the HR team and volunteers and was enjoyed by many visitors to the site at the SHARP Festival of Archaeology. Our favourite feedback from the day was that it was 'fascinating for a 12-year-old and a 53-year-old – thank you!'. For the first time, SHARP also ran the new course off-site and outside of the SHARP 'season', enabling wider participation and progression of the project when the Sedgeford site is closed. The off-site course was held in Cheltenham and led by Dr Sophie Beckett with assistance from Lucy Koster. It was hosted by Gloucestershire Archaeology (GlosArch) and was open to members of archaeological societies local to Gloucestershire. Both courses were fully booked. SHARP is looking forward to running the course again at Sedgeford in summer 2020 and completing the final year of the National Lottery Heritage Fund project. This year the SHARP human remains team also presented at the conference held by the University of Bradford 'Bones, Bodies and Disease - Conference and launch event for the Calvin Wells archive'. The talk entitled 'Ears through the ages – Inspired by Calvin Wells. A Bronze Age case of otitis media and mastoiditis?' began a search for the human remains from Sedgeford, referred to in an

article published by Wells in 1962. It is hoped that these are held at Norwich Castle Museum and the team hope to explore this further in 2020.

Recent collaboration with researchers at the Max Planck Institute for the Science of Human History has provided SHARP with preliminary DNA results for a small sample of individuals from the SHARP human remains assemblage, with publications forthcoming.

During the summer the human remains team also assisted SHARP excavators on-site, following the discovery of three pots. These are believed to be a late 2nd/ early 3rd-century cremation assemblage. Due to generous donations, a computed tomography (CT) scan of the largest pot has been obtained and has provided a non-destructive preview of what it contains. Preliminary data is consistent with a cremation deposit. During the planned micro-excavation to fully examine its contents, the CT images will be invaluable. Funds are now being raised to obtain CT scans of the other two pots as well as carry out specialist post-excavation analysis such as radio-carbon dating.

The human remains team are looking forward to an exciting year in 2020; not least because SHARP will be celebrating its 25th year since it was established in 1996. Anniversary plans include symposia, exhibitions and publications with contributions from across the whole project. Over the years, SHARP has had many volunteers contribute to all aspects of its activities. If you have participated with SHARP in any way since 1996, we would love to hear from you (contact details on SHARP website).

Check out SHARP's website and blog for further information about the project as well as news and updates throughout the year. <https://www.sharp.org.uk/>

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### **Wessex Archaeology**

*By Emma Robertson with Kirsten Egging  
Dinwiddy and Jacqueline McKinley*

### **Burial Archaeology Team**

Principle Osteoarchaeologist – Jacqueline McKinley (JMCK); Senior Osteoarchaeologist

–Kirsten Egging Dinwiddy (KED);  
Osteoarchaeologist – Emma Robertson (ELR).

Website: <http://www.wessexarch.co.uk>

Twitter, Facebook and Instagram:  
@wessexarch

### **Introduction**

It has been another busy year for the team members, who, between them, have participated in excavations, undertaken assessments and analysis of a wide range of assemblages, and have contributed towards several publications. They continue to collaborate with various institutions and have been actively involved in public engagement including television productions such as *The Bone Investigators*, *Digging for Britain* and *Mystic Britain*. All three members attended the BBAO conference in London, where Kirsten and Emma each presented posters: *A Case of Achondroplasia a Child from Medieval Southern England*, and *Deformity and Fashion: Corset deformation from 19th century Vauxhall, London*, respectively.

The following summary excludes projects subject to client confidentiality.

### **Excavations**

*Bath Abbey Footprint, Bath and North East Somerset (T24199)*

Further excavations to those reported last year beneath the Abbey floor recovered a quantity of disarticulated human remains, which were assessed on-site by KED. Further excavation is anticipated in 2020.

*Somerton Primary School, Northfield, Somerton (205157/8)*

Excavation of the remains of approximately 50 inhumation burials (perinate to adult, males and females) from an Iron Age – Romano-British cemetery with associated settlement site. Various styles of stone lined graves included one 'tent-like' structure constructed of stone slabs. Grave goods were limited but include a 'cooking pot' containing the remains of a chicken wing placed at the feet of one individual.

## Assessments

*A303 Wiltshire* (201747; 201767; 210017) (JMCK)

The assemblage comprises the remains of two Early Bronze Age urned cremation burials, one subadult and one juvenile, and two isolated Beaker period inhumation burials, one neonate/young infant and one adult female.

*Bulford Camp, Wiltshire* (109514) (JMCK)

Groundworks uncovered an isolated Beaker period inhumation grave featuring a wooden chamber which held the remains of a young adult male.

*Derby Road, Doveridge, Derbyshire* (205730) (JMCK)

An assemblage comprising a MNI of eight was recovered from a variety of cremation-related deposits (urned and unurned burial remains and possible *memento mori*), some of which were found in association with two ring ditches. CT scans of a complete, inverted Early Bronze Age vessel provided evidence indicating that it had held two 'bagged' deposits, containing the remains of different individuals.

*Eaton Leys, Milton Keynes, Buckinghamshire* (207760) (JMCK)

An Early Anglo-Saxon cremation cemetery with a minimum of 24 urned and four unurned *in situ* burials; of the MNI 31 very few immature remains are represented. A further nine (majority unurned) cremation burials are considered Romano-British in date.

*Hornsea off-shore, Lincolnshire* (110494:110491 SPE2 & 110498) (JMCK)

The remains of a mid-late Romano-British inhumation burial (older adult female) and disarticulated material from a minimum of six to eight individuals (three subadult/adults and three adults, males and females) were found dispersed throughout various Late Iron Age and Late Romano-British ditches.

*King's Gate, Amesbury Down, Wiltshire* (85689) (JMCK)

An isolated Romano-British coffined inhumation burial of a child around 3 years of age.

*Land Adjacent to Wentworth Drive, Bleadon* (115540) (KED)

The Middle Iron Age to Late Romano-British site featured a series of probable building platforms, quarry pits and the remains of inhumation burial. MNI 55 (49 *in situ*); many from graves associated with the building platforms. Few individuals were over 13 years of age, most probably no older than 6 months (i.e., neonate).

*Larkhill ABP, Area 2016* (109516) (JMCK)

A possible Beaker period inhumation grave containing the remains of a subadult was found adjacent to a pit containing the disturbed/manipulated remains of a juvenile. The latter has a small healed trephination to the frontal bone.

*Parminter Drive, Wimborne, Dorset* (108073) (JMCK)

The remains of a Late Neolithic (C14 dated) unurned cremation burial comprised a young adult female. Seven Middle Late Bronze Age mortuary features (urned and unurned burials, *memento mori*) and some cremation-related-deposits comprised MNI eight; adult males and females with a high percentage of immature individuals.

*Shrivenham, Oxfordshire* (T21082) (JMCK)

The assemblage comprises a later prehistoric unurned cremation burial containing an adult female and unburnt redeposited material (majority suggest Late Iron Age/Romano-British) with a MNI two, one young adult male and an older adult female.

*St Andrew's Church, Market Place, Castle Comb, Wiltshire* (114790; KED, ELR)

Assemblage of 77 late medieval to post-medieval burials (mostly elderly individuals) and a quantity of disarticulated material. One of the most notable observations comprises a case of mandibular osteomyelitis, often associated with phossy jaw.

*St Leonard's Church, Cliddesden, Hampshire* (214160; KED)

Remains of 19 post-medieval burials (18 adults, one juvenile) and a small quantity of

disarticulated bone of late Saxon or later date (MNI of four adults and two immature).

*St Peter's Church, Ropley Hampshire* (111181; ELR, KED)

The remains of 35 post-medieval – late 19th-century inhumation burials and a quantity of redeposited bone. Including one individual with a probable above knee amputation.

*Yatton, Phase 2 and Yatton School Site, North Somerset* (117820; 208940) (JMcK, KED)

This multi-period site included the remains of two prehistoric burials (both adult females, one dated as Late Bronze Age to Early Iron Age), a cluster of five Romano-British burials (adults of both sexes and a juvenile/subadult), and an unusual post-Roman cemetery comprising over 500 graves laid out in distinctive sub-circular format. Bone survived in less than 40% of the post-Roman graves (immature to adult, males and females).

### **Analysis**

*Area D – former RAF Lyneham, Wiltshire* (108110) (Ceridwen Boston: external)

Remains of MNI 20 from 15 inhumation burials and redeposited material (mostly neonate) forming two spatially distinct Late Iron Age – Late Romano-British cemeteries. Including one elderly male with evidence of repeated trauma, some of it weapon related.

*Bulford to Tidworth Cable, Wiltshire* (111422) (JMcK)

Two inhumation graves were excavated on the east side of Salisbury Plain. One Early Bronze Age inhumation burial of an elderly female made in a log coffin; a Collared Urn was inserted into the grave at a later date. Middle Bronze Age crouched burial remains of an older adult male, the grave located within a sub-circular enclosure.

*Chapel Riverside, Southampton SOU1675* (107173) (ELR, KED)

Remains of 117 inhumation burials and disarticulated material from a mid to late medieval cemetery. Pathological lesions include a possible leprosy case, but the most significant discovery was the near complete

skeletal remains of a 3–5 year old child with achondroplasia.

*Galloper Wind Farm* (104811) (JMcK)

Three (possibly four) unurned Romano-British cremation burials, each containing a single adult (one possible female).

*The Vale crematorium, Pershore, Worcestershire* (114416) (JMcK)

A Bronze Age crouched inhumation burial of an elderly female from a grave cutting the primary fill of a ring ditch.

Very small quantities of material were assessed/analysed; cremated bone, *Boscombe Down Cable, Hunter's Moon, Chippenham, Manchester Airport Relief Road* by JMcK; unburnt bone *Long Marston to Stratford Rising Main* by KED, and *M3 Junction 9, Winchester* by JMcK.

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### **York Osteoarchaeology Ltd**

*Malin Holst, Anwen Caffell, Katie Keefe,  
Paola Ponce, Elina Petersone-Gordina and  
Jordi Ruiz Ventura*

Reports on small assemblages are not listed. We have undertaken 11 churchyard watching briefs and assisted clients with cemetery excavations and are currently analysing the large Lincoln Bypass and Waterside, Leicester populations.

*Archaeology Warwickshire, Lunt, Warwickshire, EPG*

A total of 77 burials dating to the first and second century AD were excavated near the Roman settlement in Baginton and to the east of the Roman fort of Lunt. The quantities of bone ranged from less than 0.1g to 1,857.3g with an average weight of 69.9g. The bone was generally well burnt, indicating that it had been exposed to high temperatures for prolonged periods, although the darker coloration of some bone fragments was suggestive of uneven heat distribution in some burials. There were 55 adult and ten non-adult individuals, with one burial containing both, an adult and a child.



Nine burials probably contained adults, solely based on the robusticity of the bones. Biological sex could be determined for seventeen of the adults, with ten males and seven females represented. Some pathological lesions could be observed; eighteen individuals had deposits of lamellar bone on the long bones of arms and/or legs. Three individuals suffered from degenerative joint disease in the spine, and two individuals had *cribra orbitalia*. Notably, the cremation cemetery of Baginton yielded a number of unique grave goods, including brooches, mirrors and beads, most dating to the 1<sup>st</sup> and the 2<sup>nd</sup> centuries AD. Moreover, 64 contexts contained various amounts of animal bone.

*LSArchaeology, Claremont Terrace, York, EPG*

Six high medieval inhumations included three male and three female adults, most of whom had degenerative joint changes in the spinal and/or extra-spinal joints. Two skeletons also had osteoarthritis and a further two skeletons had periosteal reactions in the lower legs.

*MAP Archaeological Practice Ltd, Tadcaster Road, York, KK*

Five Roman inhumations included male and female adults with rib fractures, minor congenital anomalies and periosteal reactions in the tibiae.

*PCAS Archaeology, Rectory Farm, Lincolnshire, KK*

A total of 41 Roman scattered inhumations were analysed, including 34 largely mature adults of both sexes, one adolescent, three juveniles and three perinates. The adults were slightly taller than average for the period. Two thirds of adults had *cribra orbitalia*, while dental enamel hypoplasia prevalence was average for the period. Ante-mortem fractures were common, including ribs, clavicles, the lower limb and particularly forearms. A mature adult male had a healed blade injury on his cranium.

Infections of the upper respiratory tract occurred in nearly two thirds of the population, affecting males and females relatively evenly. Evidence for lung infection was apparent in six

individuals, in two males, three females and an adolescent and may have constituted tuberculosis. The percentage of the population affected at Rectory Farm was considerably higher than the average for Roman Britain but was similar to rates observed at some comparative sites. Two thirds of the population had periosteal reactions in the lower limbs. Joint disease increased with age and may have been made worse by habitual activities. Osteoarthritis predominated in the wrist, hip, hands and knees. Osteoarthritis in the spine occurred most frequently in the neck region and was more likely to affect males than females. Dental health was relatively poor, with higher than average levels of tooth decay and plaque, however, dental abscesses and ante-mortem tooth loss were not as frequently observed as might be expected.

*Wessex Archaeology, Bucklow Hill, Knutsford, Cheshire, AC, EPG, KK*

A total of 56 cremation-related deposits and a small quantity of disarticulated unburnt bone dating from the Early Bronze Age to Middle Bronze Age transition from two areas of funerary activity were analysed. A group of 12 inhumation graves, aligned east-west, were also identified, but no skeletal remains survived.

The quantities of cremated bone recovered ranged from 0.1g to 1,082.2g, with a mean of 156.9g. Children as well as adults of both sexes were found in both clusters. Five burials contained more than one individual, though it is possible that comingling of bone following disturbance had occurred in three of these. Seven burials contained small quantities of animal bone, which was associated with the male burials (one of which may have been buried with a female or non-adult), one young female and a young adult of indeterminate sex. The bone was generally well burnt and fully calcined. Evidence for a small number of relatively common pathological conditions was observed, including inflammation of the skull, lower legs and frontal sinuses, *cribra orbitalia*, degenerative joint changes, and a developmental cyst in a wrist bone. Two individuals had dental conditions, including loss of a tooth during life, and dental crowding.

## DEPARTMENTAL REPORTS

### **Department of Archaeology University of Aberdeen** *Rebecca Crozier*

It's been a really great first year for the new #MORTL lab at the University of Aberdeen. Our first batch of students graduated (projects listed below), finishing their year off by presenting their research at the BBAO London meeting last September. A real highlight! We are already looking forward to seeing the research our new students produce at the end of this year. And it's not just the program that is continuing to grow. We have also been able to increase our collections, as we now have a temporary loan of the major medieval human skeletal assemblage from St Nicholas Kirk, Aberdeen.

We are also welcoming two new staff. Firstly, we are thrilled to have Prof. Marc Oxenham, from the Australian National University, joining us from February for a 4-year secondment to our department via the British Academy Global Professorship Award. Marc will be applying new palaeodemographic and palaeoepidemiological approaches to questions of stress and resilience in ancient Ireland and Scotland. Marc also brings two new post-docs to the department. We are also welcoming Dr Linus Flink to our team. Linus is launching two new Masters Programs, Bioarchaeological Science and Biomolecular Archaeology; already taking applications for a September 2020 start.

Bioarchaeological Science

<https://www.abdn.ac.uk/study/postgraduate-taught/degree-programmes/1220/bioarchaeological-science/>  
Biomolecular Archaeology  
<https://www.abdn.ac.uk/study/postgraduate-taught/degree-programmes/1221/biomolecular-archaeology/>

Looking forward to sharing our activities with BBAO over the next year. Follow us on Facebook, and now on Twitter (<https://twitter.com/UoAMortl>).

## **Student Projects 2019**

*Sarah Caruso:* Investigating the Presence of Respiratory Conditions in Medieval Scotland: A concentration on *Concha Bullosa* from two Carmelite friaries.

*Beverly Elizabeth Minter:* Osteobiographies of eight 'wooden staff' burials from a Late Medieval Carmelite Church, Perth, Scotland. Megan Roberts Gone too soon: non-adult health and status at the Carmelite Friary of Tullilum, Perth.

*Elisabeth Chaumont Sturtevant:* Recognizing interpersonal violence: An analysis of lesions on nine individuals from Medieval Aberdeen.

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### **Department of Archaeology and Anthropology University of Cambridge** *Trish Biers*

It has been an exciting year for the Department of Archaeology at the University of Cambridge as we welcome several new lecturers in Biological Anthropology.

- Dr Emma Pomeroy, Lecturer in the Evolution of Health, Diet and Disease
- Dr Rihlat Said Mohamed, Lecturer in Comparative Human Biology
- Dr Kat Koops, Lecturer in Primatology
- Dr Guy Jacobs, Lecturer in Human Evolutionary Genetics and Bioinformatics
- Dr Joe Jeffery, Teaching Associate for Biological Anthropology

The Duckworth Laboratory has hosted over 100 researchers this past year, and with an upcoming technician hire, we will be able to facilitate research requests more efficiently. You can follow Duckworth news on our Facebook page and our new section on the Department of Archaeology's website. Dr Trish Biers, the Collections Manager of the Duckworth Laboratory, is the newly elected Museum Representative for BBAO for the next three years.

The Ancient Parasites Laboratory, directed by Piers Mitchell, has hosted undergraduate,

masters and PhD research projects ranging in date from prehistory to the 1800s. There was worldwide media interest in our discoveries of parasites at the Bronze Age marshland settlement at Must Farm in the Fens (<https://www.bbc.co.uk/news/uk-england-cambridgeshire-49347124>), and at the early farming community of Catalhoyuk in Turkey (<https://www.nature.com/articles/d41586-019-01672-y>). We have published further projects on Roman period Asia Minor, Islamic period Iberia, Ottoman period Palestine, and Taiwan during the Japanese occupation. Next year we plan to focus on a multisite study of parasite infection in medieval and renaissance Flanders.

The members of the Wellcome Trust funded project entitled, 'After the Plague: Health in Medieval Cambridge' continued to undertake research on the population of medieval Cambridge. Professor John Robb, together with Craig Cessford, Jenna Dittmar, Ruoyun Hui, Sarah Inskip, Toomas Kivisild, Piers Mitchell, Bram Mulder, Tamsin O'Connell, Alice Rose, Christina Schieb and Jay Stock continued to integrate data from aDNA, stable isotopes, bone geometrics and palaeopathology to further understand the inhabitants of Cambridge and the surrounding areas. Alongside her work on the 'After the Plague' project, Jenna Dittmar continued to investigate aspects of health and disease in Bronze age China as a Co-director of the Mogou Bioarchaeology Project. The sixth field season will commence in June 2020. She also became a Fellow of the Higher Education Academy. Dr Sarah Inskip continues her research into Hansen's Disease in the region of England during the Medieval Period. She was joined this year by Alette Blom, who was awarded a prestigious Gates Doctoral Scholarship to study Hansen's Disease and the lifecourse.

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**School of History, Archaeology and Religion**  
**Cardiff University**  
*Anna Davies-Barrett*

In view of the exciting achievements the bioarchaeological team at Cardiff University have produced this year, I was delighted to join in November as lecturer in human osteoarchaeology. I arrived to find the laboratory spaces had been completely renovated, including a new laboratory dedicated to human osteology, the refurbishment of the biomolecular archaeology laboratory, and the enhancement of our isotope preparation facilities. The human osteology lab has been furnished with a new REHA-TECH RMS-16G3 saw microtome, speeding up many of our research projects focusing on bone histotaphonomy. Our human remains storage facilities were also upgraded this year, with new Lista storage cabinets for the osteological teaching collections and a complete renovation of the archaeology stores, including new roller racking and separate lockable storage for our human remains.

Alongside these renovations, the department welcomed Jerrod Seifert, our new dedicated laboratory teaching fellow, who will assist with the osteological laboratories in the coming year. We were also delighted that Dr Julia Best, lecturer in bioarchaeology, received an extension of her contract to continue her teaching on our undergraduate and MSc courses. Additionally, Dr Emily Holt joined us this year, whose Marie Skłodowska-Curie post-doctoral fellowship focuses on zooarchaeological and isotope analysis in Bronze Age Sardinia. We were similarly thrilled to have our own PhD student Katie Faillace elected onto the BABA Board of Trustees as Student Representative. We are confident Katie will do an excellent job of representing the views of student members in the Association.

Our MSc Archaeological Science course, focusing on human osteology, zooarchaeology, and isotope analysis, has continued to be a great success. This year, MSc student dissertations focusing on human

remains included: *An examination of the efficacy of tooth mass in sexing* (Tom Goodwin), *Death by a thousand cuts: trauma and burial practices in Iron Age Somerset* (Selina Trout), and *The Bronze Age human remains from Allsdale, Isle of Barra: a histotaphonomic and isotopic study* (Lois Turnbull). Lois' presentation of her previous undergraduate work (a histotaphonomic analysis of human remains from Ham Hill and South Cadbury) at the annual Iron Age Research Student Symposium won her the prize for best bioarchaeology paper. PhD student Adelle Bricking also won an award this year at the Bristol Speleological Society Centenary Symposium for best poster on her study of human bone from Backwell Cave.

Moreover, Adelle was awarded a grant from the Cambrian Archaeological Association for radiocarbon dating, isotope analysis, and histological research on Iron Age human remains from North Wales. Katie Faillace and Dr Richard Madgwick were also awarded funding by Archaeology Wales to undertake osteological and multi-isotope analysis of skeletons from an early medieval cemetery in Llangefni, Anglesey. Katie presented a poster on the findings of this research at the BBAO conference this year, entitled *Lifeways at Llangefni: recent investigations of an early medieval cemetery on Anglesey*, which suggested that people buried in the cemetery were migrants from other regions of Britain and elsewhere.

Among the many projects our bioarchaeological team has worked on this year, often in collaboration with other universities, commercial units, and museums, some have become big news! Rescue excavations by Prof. Jacqui Mulville and a team of PhD and MSc students, alongside the Glamorgan-Gwent Archaeological Trust, recovered six human skeletons eroding from the cliff edge at Cwm Nash, thought to date to the late medieval/early post-medieval period. As well as news coverage about this exciting find, preliminary results of the analysis of one of the individuals were broadcast on *Digging for Britain* on BBC 4 (<https://www.cardiff.ac.uk/news/view/172423>

[8-skeletons-retrieved-from-welsh-coastline-in-rescue-excavations](https://www.cardiff.ac.uk/news/view/145753)). Osteological and multi-isotope analyses by MSc student Jessica Scorrer, Katie Faillace, and Dr Richard Madgwick have also revealed new insights into the diet, provenance, and ancestry of the crew of the Mary Rose. This research was featured on the show *Skeletons of the Mary Rose: The New Evidence*, aired on Channel 4 (<https://www.cardiff.ac.uk/news/view/145753> [0-cardiff-university-research-leads-to-new-discoveries-about-the-mary-rose](https://www.cardiff.ac.uk/news/view/145753)).

The findings from the Mary Rose also became part of a series of outreach events to bring bioarchaeology to pupils in a range of local underserved primary schools, headed by PhD student Poppy Hodgkinson and Dr Richard Madgwick. This complements a number of outreach events our team has taken part in this year.

In the coming year, we are celebrating the centenary of Archaeology at Cardiff University. If you are an alumni or previous staff member of the University and would like to be involved in our 2020 programme of seminars celebrating the archaeological projects and research undertaken at the university over the last 100 years, please do get in touch!

We like to post regular updates on our research projects, news, events, outreach, and achievements. Find us here:

<https://www.facebook.com/CORGROUP>

(Cardiff University BioArchaeology: CUBA)

<https://www.facebook.com/CardiffArchaeology> (Cardiff University Department of Archaeology and Conservation).

### **Current human osteoarchaeology PhD students:**

*Anton Axelsson:* Health and stature in Medieval England

*Adelle Bricking:* Iron Age mortuary practice in southwest Britain

*Ciara Butler:* Osteobiographies in Early Medieval north Wales

*Katie Faillace:* Biodistance in Britain: a dental morphometrical analysis of migration in Wessex from the Iron Age to the Early Medieval Period

*Eirini Konstantinidi*: Neolithic cave burials in Wales and southwest England

*Iulia Rusu*: The Christianisation of Magyar: an osteological study

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**Cranfield Forensic Institute  
Cranfield Defence and Security  
Cranfield University**

*David Errickson*

2019 has been very busy at Cranfield's Forensic Institute because it is the final year that the courses will be completely run at the Defence Academy of the United Kingdom. Although the partnership with the Ministry of Defence remains strong and many of the academics will still be located at the Defence Academy, the 2020 intake of students will be at the Bedfordshire campus. This is an exciting opportunity echoed by Cranfield University who have invested £3.5 million into the refurbishment of laboratories and the acquisition of the latest technology to ensure the forensic institute maintains its world leading status. Finally, as part of this move, Cranfield University are offering five fully funded scholarships that are available to prospective students demonstrating excellence in their field.

The MSc courses continue to be successful in delivering exciting academic practice to both full-time and part-time students from an exceptional number of backgrounds. These courses are continually accredited by the Chartered Society of Forensic Science, and uniquely Cranfield Forensic Institute offers a number of multi-disciplinary experiences with external partners. The institute will continue to offer courses in Forensic Anthropology and Archaeology, Forensic Investigation, Digital Forensics, Forensic Ballistics, and Forensic Explosive and Explosive Investigation. In addition, we are just preparing our new course, 'Forensic Investigation of Heritage Crime' to come online in 2020.

We are pleased to say that we have had a number of PhD successes over the course of 2019. These include Vijan Vachirawongsakorn whose PhD was titled,

'Environmental Taphonomic Processes and their Effects on Skeletal Trauma'. Charlotte Willis successfully defended her PhD titled Burial Archaeology at the Royal Naval Hospital, Haslar. and Marco Cummaudo submitted and passed their viva titled, Identification of Human vs Non-Human Bone (*sus scrofa*) in Forensic Anthropology: Histological Perspectives.

There have been some exciting research developments in 2019. Dr Sophie Beckett welcomed Dr Rita Hardiman from the University of Melbourne Dental School for a collaborative research visit, funded by a FA Kernot Mid-Career Research Award. Micro-Computed Tomography and X-ray diffraction analysis of dental calculus from the School's anatomy collection was carried out and publication of the results is forthcoming.

The Cranfield Recovery and Identification of Conflict Casualties Team (CRICC) have also had a busy year. In October we successfully partnered with the Defense POW/MIA Accounting Agency on a mission to Sicily, and our thoughts now look forward to further deployments in 2020. The CRICC team also continually provides professional and efficient recovery and identification services. Other examples where the team has been involved include the 2019 rescue of human remains from Rat Island (shown on 'Digging for Britain'), under the direction of Archaeologist of the Year, Richard Osgood.

The CRICC team continually offers anyone with archaeological or anthropological expertise and an interest in recovering conflict casualties to get in touch and join our team. Further information can be found here: <https://www.cranfield.ac.uk/centres/cranfield-forensic-institute/cricc>.

To keep up to date with Cranfield Forensic Institute follow our blog (<https://blogs.cranfield.ac.uk/category/forensics/>) or follow us on Twitter (@CranfieldForSci).

### **Current PhD Students:**

*Arnold, E.:* Bone Disease, Integration of Nano and Macro Scale Studies.

*Brown, D.:* A re-assessment of the use of tanks at the Battle of Bullecourt, 1917.

*Davies, S.:* High Resolution Mapping of Bone: The Pathogenesis of Osteoarthritis.

*Giles, S.:* Post-mortem interval estimations in Forensic Anthropology and Pathology

*Lloyd, R.:* Forensic Toxicology in Embalmed Human Remains.

*Mcgovern, H.:* Investigating the Age-Related Changes to the Mechanical and Structural Properties of the Ribs and Clavicle with Age.

*Rickman, J.:* The Formation and Differential Diagnosis of Conoidal Projectile Wounds in Flat Bones.

*Saunders, E.:* Femoroacetabular impingement and osteitis... contributions to bioarchaeology and forensic anthropology.

*Wessling, R.:* Forensic Anthropology: Virtual Skeletal Analysis.

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### **Department of Archaeology Durham University**

*Tina Jakob*

In 2019, the Department of Archaeology at Durham University saw yet another productive and busy year with a large number of staff and student successes. However, firstly we would like to congratulate our colleague and friend Eva Fernández-Domínguez and her husband Costa Eliopoulos to the birth of their son Héctor. During Eva's maternity leave, Karis Baker took over as a part-time teaching fellow. Congratulations are also due to Professor Rebecca Gowland on her promotion, in addition to becoming the Faculty lead in Diversity, Equality and Inclusion. Of course, Becky remains Director of the newly renamed MSc Human Bioarchaeology and Palaeopathology programme (previously MSc in Palaeopathology), with teaching support from Anwen Caffell and Tina Jakob, and many of our colleagues.

Charlotte Roberts has been awarded an Honorary Professorship from Jilin University, Changchun, China, where she was also a Guest Professor in May 2019. Moreover, Charlotte is

now an International Strategic Advisor for Jilin University and has been invited to serve on the Repatriation Committee of the American Association of Physical Anthropologists. She also took over as President of BABAIO for an extra year. In 2019, Charlotte took part in: The Conversation: 'Teaching archaeology in care homes, I learned how older people are often the best students', the Science Museum (London) film on leprosy for the permanent Medical Galleries ('medical isolation') – with PhD student Kori Filipek, she contributed to Blogs for the British Academy (what is archaeology, and on health) and was one of the co-organiser of the workshop on treponemal disease, held at the Paleopathology Association Annual Meeting, in Cleveland, Ohio, USA.

Charlotte co-produced a Massive Open Online Course (MOOC) based on the Scottish Soldiers project on bioarchaeology and ethics in particular. More than 2000 learners from over 100 countries took part.

Charlotte and Tina organised the 1<sup>st</sup> Palaeopathology Summer School during two weeks in August with 18 participants from 11 countries, with excellent laboratory support provided by one of our PhD students, Leslie Quade. We are also extremely grateful for the support provided by the Institute for Bioarchaeology. Due to its huge success, this short course will run again in July/August 2020 and we are now accepting applications: <https://www.dur.ac.uk/archaeology/study/shortcourses/palaeopathology/>

Becky launched a free online course 'Forensic Archaeology and Anthropology' on the 4<sup>th</sup> November 2019. This was a 6-week course covering aspects of body location, excavation and analysis. The course was developed by Rebecca Gowland and Tim Thompson (Teesside University) and is supported by the International Committee of the Red Cross. Leslie has to be thanked for her help with development and logistics. The first run of the course was a huge success, with over 6000 participants from over 130 countries. The course will run again in April 2020.

Congratulations to Joanne Moore, who not only successfully completed her PhD, but also took up the post of technician in the Department of Archaeology's stable isotope laboratory.

Janet Montgomery went back to her roots in this podcast for the 'whatshername' website about a Neolithic woman she worked on for my PhD!

<https://www.whatshernamepodcast.com/cranborne-woman/>

Tina has been back to Sudan in April 2019, working on the human skeletal remains from the QSAP-funded Mogrart Island Archaeological Mission (MIAMi) directed by Clausia Näser (UCL) and Amel Hassan Gismallah (NCAM). She also participated in the excavation of a Byzantine mass grave in Iunca, Tunisia, on the British Council-funded Training in Action Project, directed by Professor Anna Leone (Durham University).

#### **Other Projects and Grant Successes**

Janet Montgomery is working with Susan Flavin O'Connell at Trinity College Dublin on her ERC Foodcult grant that started in October 2019: <https://foodcult.eu/people/>

In addition, Janet also received a 3-year Leverhulme grant that started in September with Peter Rowley Conwy as co-PI and Kurt Gron as PDRA, and in collaboration with the National Museum in Copenhagen: *'Mobility, sex, and the Neolithic transition in Europe'*.

Charlotte is working on the ongoing HLF-funded project related to Bamburgh Castle and the Bowl-Hole cemetery – she has been invited as a Steering Group Member and is responsible for the digital ossuary and relevant information on the accompanying website (<https://bamburghbones.org/ossuary/digital-ossuary/>).

Andrew Millard is involved in Jonathan Santana's Marie Skłodowska Curie Fellowship project *ISONEO: Isotopic evidence for diet and mobility during the Neolithic transition to farming in the Near East*, came to an end in October. The project focussed on isotopic

analysis of human and animal remains from a series of Epipalaeolithic to Pre-Pottery Neolithic B communities from Israel, Jordan and Syria. This period coincides with the Neolithic transition in the area and the emergence of the first farmers. The results are being prepared for publication. Despite significant intra- and inter-regional connections exhibited in material culture, the isotope analyses demonstrate that the burials within each community show little variation and limited overlap in isotope ratios. This suggests that although they were connected, each community was self-contained with limited migration or exogamy.

#### **PhD Students (old, new and ongoing)**

We are delighted to report that Ellen Kendall, Kayla Crowder and Bennjamin Penny-Mason successfully defended their theses in 2019. Congratulations to all of them!

PhD students in Bioarchaeology beginning in October 2019 include Heidi Shaw Petyo whose research will continue to develop the method of sex determination from enamel peptides. Lauren Kancle also started her PhD in January 2019 undertaking analysis of early medieval populations in the North of England. Both of them are recipients of a highly competitive Durham Doctoral Studentship.

Ongoing PhD students include:

*Susan Aylard:* (Does Parasitic Infection Correlate With Stress During Childhood? Exploring the Impact of Poor Living Environments on the Development of Skeletal Indicators of "Stress" and Parasitic Infection in the Bioarchaeological Record); supervised by Charlotte Roberts, Mike Church and Andrew K. G. Jones (York University)

*Kori Filipek:* (Illness, Isolation, and Isotopes: Assessing leprosy stigma in late Medieval England (12th-16th centuries AD) and its impact on health and contemporary society); supervised by Charlotte Roberts, Becky Gowland and Janet Montgomery

*Simon Hughes:* (Human Remains in a Museum Context: Storage, Study or Reburial?); supervised by Charlotte Roberts and Robin Skeates

*Lauren Kancler:* (Piecing Together the Past: Reinterpreting Traditional Views One Life History at a Time); supervised by Janet Montgomery, Becky Gowland, Darren Gröcke, Sarah Semple

*Mocen Li:* (Diachronic Changes in Health in Agricultural Population from Early Agriculture to Imperial China); supervised by Charlotte Roberts and Peter Rowley-Conwy

*Ziyi (Asan) Li:* (Childhood health in Neolithic Henan, China); supervised by Tina Jakob and Becky Gowland

*Tessi Loeffelman:* (supervisors Janet Montgomery and Sarah Semple) who will be investigating the potential of Sr and Pb isotopes in early Medieval cremated human remains at sites including the Viking cemetery at Ingleby remains in collaboration with Professor Julian Richards at York University, and Dr Philippe Claeys and Dr Christophe Snoeck at the Free University Brussels

*Charlotte S. McElvaney:* (Investigating proposed behavioural and social divergences between distinct Inuit hunter-gatherer groups using paramasticatory dental striae, linear enamel hypoplasia, trauma and wear); supervised by Tina Jakob, Anwen Caffell and Peter Rowley-Conwy

*Sarah Morrison:* (supervisors Rebecca Gowland and Janet Montgomery) who will be undertaking an investigation of carbon and nitrogen isotope integrity in cremated bone.

*Aryel Pacheco:* (Tuberculosis in Andean communities from the Tarapacá area (North of Chile) between 900 BC to 1450 AD); supervised by Charlotte Roberts and Andrew Millard

*Julie Peacock:* (Disability and traumatic brain injury (TBI) in Britain: AD 1066-AD 1800); supervised by Charlotte Roberts and Pam Graves

*Leslie Quade:* (When in Gaul, do as the 'Romans' do? Shifting health in Gaul during late antiquity and the early medieval period); supervised by Becky Gowland and Robert Witcher

*Bryony Rogers:* (Increasing the temporal resolution of animal movements - a comparative study of LA and microdrilling for Sr-isotope profiling of herbivore teeth); supervised by Janet Montgomery, Geoff Nowell, Peter Rowley-Conwy

*Heidi Shaw:* (Sex determination from enamel peptides); supervised by Becky Gowland and Janet Montgomery

*Samantha Tipper:* (A Bioarchaeological approach to the analysis of Vertebral Fractures amongst the Ancient Nubians from 5000 BC to 1500 AD - submitted); supervised by Charlotte Roberts and Penny Wilson

*Joe W. Walser III:* (joint with University of Iceland) (In between breaths: respiratory disease, skeletal pathology, volcanism and environmental health in historical Iceland); Supervisors: Becky Gowland, Steinunn Kristjánsdóttir (University of Iceland and National Museum of Iceland), Agnar Helgason (deCODE Genetics)

### **MSc Students (2018-2019)**

The 2019 cohort of the MSc Palaeopathology course submitted their diverse dissertation research on a wide range of topics:

*Elly Cordiner:* Feeding the Plague: Dietary Isotopes before and during the Black Death in Toulouse, France

*Naomi Kilburn:* X-citing Bones: Testing the use of Portable X-Ray Fluorescence (pXRF) in the identification of pathological conditions

*Christina Koureta:* Funerary and palaeopathological evidence in the Greco-Roman World: The Late Roman cemetery in Klavsi, Evrytania, Greece

*Amelia McLoughlan:* Diagnosing cerebral palsy in the bioarchaeological context

*Hanna Polasky:* Stature and Pelvic Measurements of Victorian Women

*Kirsten Robinson:* Trauma prevalence in leprosy sufferers: The case study of Peterborough, Eastern England

*Janelle Taylor:* La Mort Noire: Using Stable Isotope Analysis to Examine to Black Death Cemeteries in Toulouse, France

*Rae Thomas:* Palaeoparasitological Analysis of Soil Samples from 18th-Century St Elisabeth Hospital Cemetery in Vienna, Austria

*Anthony Tobin:* A synthesis of infant vessel burials in the archaeological record



**School of History, Classics and  
Archaeology  
University of Edinburgh**  
*Linda Fibiger*

Jonny Geber joined the School of History, Classics and Archaeology as Lecturer in Human Osteoarchaeology in February 2019.

Linda Fibiger is continuing her work as a Research Scientist for ‘*The Fall of 1200BC: The role of migration and conflict in social crises at end of the Bronze Age in South-eastern Europe*’, funded by a European Research Council Consolidator Grant and led by Dr. Barry Molloy (<http://www.thefall1200.eu/index.html>). She has travelled widely across the Balkan peninsula and analysed over 250 individuals to date. The first aDNA and stable isotope results from the project will be forthcoming in 2020.

Jonny Geber is the PI of three new bioarchaeological research projects:

[1] “Facing the Frontier in the American ‘Wild West’: Benton Hot Springs Cemetery Bioarchaeology Project”, starting in 2020 in collaboration with Dr Rebecca Kinaston (co-PI) (University of Otago) and funded by the British Academy/Leverhulme. This project seek to investigate the living conditions and social relations in mid-19th-century goldmining community in the California, through a cemetery survey, excavation and bioarchaeological analysis

[2] “Viking-period and early Christian burials at St Olofsholm, Gotland, Sweden”, started in 2019 in collaboration with Professor Sabine Sten (Uppsala University Campus Gotland), Dr Dan Carlsson (Arendus), Eva Sjöstrand (Independent researcher/Swedish National Radio), Dr Catriona Pickard (University of Edinburgh). This project is investigating the potential link between archaeological burials and ancient legend and medieval sagas relating to the arrival of the Norwegian king Olof II Haraldsson (995–1030 AD, later sactified as Olof the Holy and national Saint of Norway) and his men, and the early Christianisation process of Gotland, in AD 1029, through bioarchaeological analysis and interpretation

(osteology, CT-scans, isotope analysis (C, N, Sr, O) and radiocarbon dating).

[3] “The bioarchaeology of social marginalisation: A biocultural investigation of nineteenth-century Scania, Sweden”, started in 2017 in collaboration with Jenny Bergman (Lund University Historical Museum) and Professor Elisabeth Iregren (Lund University). The project is focusing on human remains from the former anatomy school at Lund University, to explore themes of social marginalisation and poverty, social injustice, health and trauma.

Dr Kath McSweeney research output continued with the following projects:

[1] The study of the Late Chalcolithic human remains from the prehistoric salt-production site of Provadia-Solnitsata, Bulgaria continued during the summer season, with several new burials discovered, bringing the total burial contexts to 63. A monograph on the archaeology and osteology relating to the necropolis is currently in preparation.

[2] The analysis of the human remains from the Neolithic/Iron age site of Mursalevo, Bulgaria was completed in the summer. Seven of the ten Neolithic burials had interesting perimortem blunt force cranial trauma. Three of the five Iron Age individuals were children buried in one pit.

[3] A long bone shaft fragment from the Late Neolithic site of Hadzhidimitrovo, Bulgaria, that had rounded polishing of the broken ends was re-examined in the summer. This could not previously be positively identified because of a covering post-depositional concretion. Following the removal of the concretion by conservators, it was confirmed that it was a shaft of human humerus. The polishing at each end of the shaft suggests its use as a tool. Besides other isolated human bone fragments, this site also contained the burial of a child, aged 2 ½ to 3 years.

[4] Human remains from two new sites in Bulgaria were analysed in the summer: A male and female buried in a pit from the Late Chalcolithic site of Stamboliyski, Bulgaria; and an adult female and the partial remains of a child, aged 5-7 years from the Neolithic site of Slatina, Sofia, Bulgaria.

In 2019, the ‘One Health Archaeology Research Group’ was launched by Robin

Bendrey, Linda Fibiger and Catriona Pickard to provide a forum to support interdisciplinary approaches for the study of past human, animal and environmental health and the contribution of these long-term records to current global health challenges.

A very successful and well attended seminar series provided plenty of topics for discussion in Semester 1, with more planned for Semester 2.

<https://www.ed.ac.uk/history-classics-archaeology/research/research-groups/one-health-archaeology>

Linda Fibiger and Manuel Fernández-Götz organised a Conflict Archaeology Research Group Seminar in early December 2019, with a variety of speakers providing a very informative session on “Introducing New Research on the Materialities of Conflict”.

<https://www.ed.ac.uk/history-classics-archaeology/research/research-groups/conflict-archaeology>

The annual series of Thursday evening Archaeology seminars culminated in the prestigious Munro lecture being delivered by Professor Christopher Knüsel, on the subject of “Violent Injuries and Scapegoats at Çatalhöyük”.

The School will also host the 11th Biennial Fields of Conflict Conference, in September 2020. The conference brings together students, professionals, practitioners and academics at different career stages to present papers and posters to discuss and debate their research in conflict, battlefield and military archaeology. For more information see <https://www.ed.ac.uk/history-classics-archaeology/news-events/events/11th-biennial-fields-of-conflict-conference-2020>

### ***New PhD Students***

*Hannah Harrison*: Home is where the heart is: Domestic infant burials in Ancient Egypt’s Middle Kingdom (c 2055 BCE – c.1795 BCE).

### ***Ongoing PhD research***

*Astrom, C.*: Comparative Projectile Trauma: An Examination of Skeletal Trauma Inflicted by Various Projectile Weapons

*Barlow, A.*: Cotton Town Blues. Investigating inequality in the 19th century cemetery population of St Peter’s Parish Church Cemetery, Blackburn, Lancashire, UK, through stable isotope analysis.

*Bonicelli, A.*: Investigating rib biomechanical properties and their potential for Forensic applications

*Boyle, A.*: An osteoarchaeological study of peri-mortem trauma in Medieval Britain

*Espinosa Rosero, S.*: Forensic Anthropology techniques of positive identification through anomalies in the human bone registry

*De Pace, M.*: An investigation of the survivability and mortality of Medieval Mesembrians through physiological stress markers and dietary reconstruction

*Evatt, A.*: A bioarchaeological investigation of European Mesolithic burial practices and taphonomy

*Girdwood, L.-K.*: A Comparative Analysis of the Evolution of Oral Health Pathologies and Stable Isotope Ratio Dietary Indicators through the Historic Period in Two Contrasting Medieval Populations from Scotland, UK, and Ibiza, Spain.

*Ide, L.*: Never Done: A bioarchaeological study of women’s work, task, and occupation in medieval Scotland.

*McMath, P.*: An osteoarchaeological investigation into Byzantine human health on the Black Sea Coast of Bulgaria

*Reeve, I.*: Morbidity and mortality in relation to the environment: a comparison of British urban and rural skeletal populations

*Shaffar-Roggeveen, Chase*: The effects of battle re-enactment on battlefield sites in the United Kingdom

*Waters, E.*: Zoological analysis of the Unicorn

*Zhang, W.*: Violence and conflicts along the ancient Silk Road: A bioarchaeological research on the human remains unearthed from cemeteries in late Bronze Age to Han (1000 BC-200 AD), north-western China

### ***Completed PhD Research***

*Karell, M.*: Identifying the disappeared: Testing a Novel Method for the Sorting of Commingled Human Remains

*Lill, C.*: Decreased bone mineral density related to chronic alcohol abuse and its effect on histological ageing methods

***Dissertations Submitted for MSc Human Osteoarchaeology programme 2018/19***

Mesh-to-Mesh Value Comparison of Three-dimensional Joint Surface Geometries: A Novel Approach to Reassociating Commingled Remains using the Temporomandibular Joint

A Forensic Facial Reconstruction and Analysis of Cranial Trauma for the 19th Century Criminal Stavrou-Arren

An Adapted Mesh-to-Mesh Value Comparison Method for Estimating Age-At-Death Using the Pubic Symphysis: Limitations, Significance, and Re-evaluating the Suchey-Brooks Method.

Analysis of Perimortem and Post-Mortem Cranial Trauma Using 3D CT Software Amira.5.2.2

The Impact of the Industrial Revolution on Diet in Northwest England: A Case Study from St. Peter's Church, Blackburn Parish

3-Dimensional Investigation of Clavicle Vasculature and its Usefulness in Osteological Analysis using Absorption based  $\mu$ CT Scanning.

Palaeodiet Reconstruction using Stable Isotope Analysis at Brandýsek, a Bell Beaker Burial Ground: Traditional and Modern Approaches to Palaeodiet Reconstruction

Investigation of the Correlation Between Enamel Hypoplasia and Nitrogen Stable Isotope Values in Dentine

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**School of Applied Sciences  
University of Huddersfield**

*Anna Williams*

***MSc Courses***

The suite of Forensic Science MSc courses at the University of Huddersfield goes from strength to strength. The MSc courses offered are Forensic Science (Anthropology); Forensic Science (Biology); Forensic Science (Toxicology) and Forensic Analytical Science. Cohort numbers are healthy and continue to rise, with a total of 27 students in 2019-20.

**Research**

The Forensic Anthropology Research Group (FARGo) is also growing. We have welcomed three new full time PhD students since

September 2018. They join existing PhD students, MSc, UG and placement students. Caley Mein completed her MRes in The Effect of Bacteria vs Environment on Bone Diagenesis in June 2019 and started a PhD in September 2019. PhD abstracts:

Catherine Maidment (2018-2021) The Use of Alternative Light Sources to Detect Skeletal Remains Underwater

Aquatic searches for human remains are time consuming and expensive with current methods focusing on finding intact cadavers rather than skeletal remains. Alternative light source-based techniques (ALS) are non-destructive and inexpensive, centring on the natural autofluorescence properties of bone collagen. Previous MSc work formed the basis of this PhD research, by providing insight into the specific ALS wavelength and coloured filter combination required to visualise bone fluorescence in terrestrial and underwater contexts, as well as the formation of bespoke computer software to analyse the resultant photographs. Overall, this ALS technique could represent a potential new approach to underwater searches with additional implications for crime scene analysis, mass disasters and archaeological contexts.

Caley Mein (2019-2022) The Effect of Trauma on Bone Diagenesis

Trauma is often seen in forensic investigations. The effects of trauma on the decomposition of soft tissue have been well researched; however the effects such trauma could have on bone diagenesis has not yet been established. Bone diagenesis refers to the changes skeletal remains undergo over time. This can be seen in bone material in the form of weathering, external flaking, cracking and discolouration; in histological changes via tunnelling caused by microbes; and via reduction in collagen content which can be seen as a reduction in birefringence. These changes are caused by microbial infiltration; either bacterial, and/or fungal. It is hypothesised that trauma to the soft tissue, particularly trauma that penetrates the bone, may allow these microbes easier access to the skeletal tissue, thereby affecting bone diagenesis when compared with uncompromised bones. This research could have implications in both fields of forensic science and archaeology.

Lisa Robertson (2019-2022) The Post-mortem Degradation of Fingerprint Ridge Detail

This research examines how fingerprints degrade over time following death, throughout the decomposition process, using cadavers in various depositional contexts and environmental conditions. It aims to establish at what PMI a usable fingerprint can no longer be recovered for identification purposes, taking into account the various taphonomic factors, both extrinsic and intrinsic, that can influence rate of decay. Data collection will be carried out at several contrasting locations: the Forensic Anthropological Research Facility at Texas State University, the Universite du Quebec a Trois Rivieres, Canada and at the ARISTA 'forensic cemetery' in Amsterdam. The Metropolitan Police have also agreed to collaborate on this research. The impact of embalming on the persistence of post-mortem fingerprint ridge detail will also be explored in collaboration with the University of Sheffield. Conference presentations

FARGo members attended the Taphos-Nomos Conference in November 2018 and the BABAO Annual Conference in September 2019. The following presentations were also given:

Maidment, C. (2019) Shining a light on forensic anthropology: The use of alternative light sources to detect skeletal remains underwater. Oral presentation, Foster and Freeman Forensic Technology seminar, Evesham.

Maidment, C. (2019) The use of alternative light sources to detect skeletal remains underwater. Poster presentation, University of Huddersfield PGR conference 2019, University of Huddersfield

Mein, C. (2019) The Effect of Bacteria vs Environment on Bone Diagenesis. Poster presentation, University of Huddersfield PGR Conference, University of Huddersfield

Maidment, C. (2018) The use of alternative light sources to detect skeletal remains underwater. Oral presentation, BAHID Winter conference 2018, Manchester.

Dr Anna Williams presented at several conferences in the last year, including the British Association of Forensic Odontology (keynote); Institute of Animal Technology Annual Congress (Kevin Dolan Memorial

Lecture); Annual Forensic Science Student Conference at Staffordshire University (keynote), and the Annual Forensic Phonetics and Acoustics Conference (keynote). She will be presenting at the AAFS Annual Conference in February.

### ***Facilities***

The School of Applied Sciences at the University of Huddersfield has recently opened a brand new suite of chemistry, biology and analytical sciences laboratories. The Forensic Anthropology laboratory, which opened in March 2017, is being well-used for a variety of osteological analyses and taphonomy experiments, as well as undertaking human and faunal osteological analyses for police, universities, TV companies or archaeological units. The HuddersFIELD animal taphonomy facility is also in constant use for MSc and PhD projects. In the last year, we have also welcomed a large human skeletal collection to the department, on long term loan from the University of Sheffield. It is the Spofforth Village Farm collection, which contains over 150 Anglo-Saxon individuals, disarticulated charnel and animal remains. It is being used for teaching and research projects.

In March 2019, an article based on Catherine's work was published in the Telegraph: <https://www.telegraph.co.uk/news/2019/03/23/fluorescent-lights-help-police-divers-find-human-remains/>

Dr Anna Williams is a member of the BABAO Equality, Diversity and Inclusion Sub-Group, which aims to celebrate diversity within BABAO, raise awareness of ED&I issues within our disciplines and work to address them.

If you would like to find out more about the work of the Forensic Anthropology Research Group; request to use our skeletal collection or facilities, or raise any ED&I issues, please contact Anna on [a.williams@hud.ac.uk](mailto:a.williams@hud.ac.uk).

## **Human Osteology Laboratory, University of Reading**

*Mary Lewis*

Last year saw some exciting developments in human osteology in the Department. We welcomed a new member of staff, Dr Ceri Falys to support us in teaching a new MSc in Professional Human Osteoarchaeology and opened a new Osteology Research Lab. Reading also ran one of the first CiFA Special Interest Group Events for OsteoSIG with a Workshop on puberty methods. Our research cluster, Diet Health and the Life Course, ran a highly successful seminar series showcasing the pioneering work of world-leading UK-based bioarchaeologists – notably these were all women! Mary Lewis also travelled to the University of Victoria in Canada as a Lansdowne Guest Speaker giving a series of lectures on medieval adolescents and non-adult palaeopathology.

We celebrated the graduation of four of our PhD students (Cecilia Collins, Emily Carroll, Candace McGovern and Sascha Valmé) and welcomed two new research students, Tom Mills and Florencia Botta. Students have been active in contributing to outreach projects including a talk by Sophia Mills for ‘a pint of science’, while Jennifer Austen took up the role of Student Fundraising chair for the Palaeopathology Association, and won the Cockburn Student Prize at the Palaeopathology Conference in Cleveland for her paper: *Exploring a new scoring scheme for the cribrous syndrome in relation to anaemia: a pilot study on an early Bronze Age cemetery in North-western China* (with Mao, R., Wang, H., and Yeh, H.-Y.)

To learn more about our activities you can follow us on [Facebook](#) and [Twitter](#).

### **Current Research Student Projects**

#### **Jennifer Austen**

**Project title: Cribra Orbitalia, Cribra Humeralis and Cribra Femoralis: understanding their aetiology**

Examination of cribrous lesions has been a frequent and ongoing study in paleopathology.

Current debates regarding aetiology suggest that these lesions are the result of marrow hyperplasia. This has given rise to the suggestion that cribrous lesions could be the result of acquired anaemia, but many argue that other conditions could be responsible. The introduction of cribrous lesions in the proximal humerus (cribra humeralis) and femur (cribra femoralis) in particular have reignited aetiological debates in what has been referred to as the cribrous syndrome. Although not as frequently recorded as cribra orbitalia, patterns in postcranial cribrous lesion locations appear to correlate with locations of red bone marrow in childhood; however, this observed trend has yet to be rigorously tested. This PhD project explores the relationship between cribra orbitalia, cribra humeralis, and cribra femoralis in nonadults and young adults, in an effort to better understand the aetiology of cribrous lesions.

#### **Florencia Botta**

**A comparison of childhood health between the early, late pre-Black Death and post-Black Death periods**

The Black Death was an unprecedented catastrophic event that led to the death of at least 40% of the European population. This outbreak hit England in AD 1348-1350. Although traditionally it was considered that the plague started a period of crisis in England, recently it has been suggested it was part of a larger crisis period that started in the 12th century. This crisis was characterised by multiple social and environmental changes, which culminated in the Great Famine (AD 1315-1317) and the Black Death. This project evaluates childhood health in the period leading up to the Black Death and its possible influence on the outbreak. ‘Non-surviving’ children and surviving adults from multiple sites across England dated in the early pre-Black Death, the late pre-Black Death and the post-Black Death will be analysed for indicators of nutritional stress, growth and pubertal delay. Integrated with secondary osteological analysis, stable isotope data and archaeological and contextual evidence, this study aims to provide a comprehensive image of childhood health in the past.

### **Thomas Mills**

#### **Project Title: ‘Be Thou Dead to the World, but Alive unto God’: Defining the Diagnosis and Evolution of Leprosy using the evidence of Child and Adult Skeletal Remains.**

This project explores the nature and severity of the skeletal manifestations of leprosy over time by comparing leprosy observed in modern clinical cases with the remains of individuals who died in leprosaria the Middle Ages, and how these may relate to the historical and present-day social perceptions of the disease. This project aims to increase the academic rigour of the macroscopic assessment of leprosy in skeletal remains, via the development of a rigid and replicable method based on the Modified Istanbul Protocol, while also researching previously unexplored areas for skeletal lesions in palaeopathological material as suggested by manifestations of leprosy in modern clinical cases. This will improve our knowledge of the variable expressions of leprosy in skeletal material, particularly its potential to mimic other diseases, and increase the soundness of the contribution that palaeopathology can make to the wider discussion of leprosy, past and present via consistent and replicable diagnosis.

### **Sophia Mills**

#### **Project Title: Ageing and the Aged: The Social and Physical Implications of Senescence AD 900 – 1550**

This research utilises a combination of standard and specifically developed ageing techniques, as well as palaeopathological analysis, to re-age senescent individuals from a constant and unrealistic estimate of 46+ years, into more precise chronological and social age categories. With the aim of highlighting the need to ‘find’ older individuals in the archaeological record, and to significantly contribute to the further understanding of the life course in the past. This research spans four noteworthy sites from NE England, incorporating a cross-section of society; Fishergate House – Urban, Wharram Percy – Rural, St.Helen-on-the-Walls – Poor, Barton-upon-Humber – Wealthy. As well as exploring the realities of old age in the medieval period, including disease,

disability and interpersonal violence and how this differed between social sectors. Thus far, the preliminary results have revealed a significant divide in the health and social status of senescent individuals from different sectors of society.

### **Charlotte Scull**

#### **Project Title: The Foodways of Religious Women**

The daily life experience of religious women in medieval England and the extent to which it differed from that of their male (monastic) or secular contemporaries is an area of significant research interest, as it relates to questions of gender, power and medieval spirituality. Exploring these issues in depth has been hampered, not only by the relative scarcity of historical documents and excavations relating to nunneries compared to monasteries, but also by an overt focus on male monasticism as the dominant way of religious life. This research combines studies of faunal bones and isotopic analysis of human remains for reconstructing food consumption patterns at medieval English nunneries in order to explore the identity, social organisation and daily lives of religious women and how and why they differed from their contemporaries at (male) monastic and secular sites.

### **Graduated 2019**

#### **Candace McGovern**

#### **A Woman’s World: a bioarchaeological approach to the Romano-British female life course**

Within the female life course three physical events or transitions occur which directly relate to shifts within society: puberty, childbirth and menopause. These transitions were explored using 436 females between the ages of 10.0 and 44.9 from 11 southern Romano-British urban centres. While the puberty subsample (n=136) included females between 10.0 and 24.9 years of age and had a mean age of 14.1 years for menarche, the childbirth subsample (n= 398) comprised of those over 13.0 years of age and showed high rates of contraction among women under 18.0 years. Pathologies and morphological changes associated with obstetrics including

prematurely fused coccyx and osteophyte growth were also examined as potential hazards and suggested that obstetric hazards changed with female development, age and possible parity status. Additionally, the developmental obstetric dilemma (DOD) hypothesis was investigated through pelvis typology and pelvimetry.

**Sascha Valmé**

**Project title: Puberty and Adolescence in Post Medieval England**

Through the use of osteological, historical, and archaeological sources a primary sample of 462 individuals from the ages of 10 to 25 years were examined for age, sex, pubertal stage, stress, and pathology. For the purpose of this project the post medieval period was defined as the years AD1550 to AD1850 and all individuals were divided into a classification system of Urban, Semi-Urban, and Infirmary in order to address the rapid changes in urbanization and industrialization, and the effects that they would have on a child growing into adulthood. Additionally, a database of 424 previously recorded individuals were compiled into a secondary source group to compare, age, sex, and pathology in order to establish a better framework of post-medieval adolescent health. An examination of the 6 pubertal stages indicated that no 10 year olds had yet begun puberty. In addition there appears to be variability to the timing of pubertal development independent of sex that is associated with stress and pathology. By the age of 16.2 the average girl had already passed menarche. Despite the age range of 25 being utilized 6 (15.4%) of males and 7 (20.6%) of females were found to still be at the last stage of pubertal development.

**Emily Carroll**

**Project title: Cremation practices in Late Iron Age and Roman Britain: Funerary responses to the changes and continuities in society, culture and technology**

The late Iron Age and Roman period in Britain witnessed numerous cultural, social and technological transitions, including increased interactions with the continent. While these processes have received significant attention with regards to discussion of material culture, it is only recently that bioarchaeological

research has considered the role of funerary practices and what they can contribute to our understanding of these processes. The primary mortuary rite during this period was cremation. Although previously thought to contain limited information compared to inhumation burials, current research now recognises that they hold the potential to reconstruct entire funerary sequences, from the building of the pyre, to the final deposition within the grave. Recent methodological advances in the field allow us to infer a wealth of information concerning burning intensity, providing insight into ancient cultural, technological and social practices that could not be achieved before.

A new quantitative method to measure the extent of ultra-structural thermal alteration within burned bone thin sections is introduced. Attention is given to both the methodological advantages and drawbacks in employing qualitative and quantitative technologies in the assessment of burned human remains, and discusses the potential for future research in the field of cremation studies.

**Cecilia Collins**

**Project Title: Respiratory Health and Disease in Medieval Iceland**

As a measure of chronic episodes of infection, the maxillary sinuses and temporal bones, particularly the middle ear compartment and auditory ossicles, are known to remodel or erode with pathological change. Studies of maxillary sinusitis have outpaced those of the ear in palaeopathology, but have used only adolescent or adult material with accessible views of the sinuses. These studies have focused on environment and air quality as major factors in respiratory disease. Chronic ear infections are recognised as the most common sequela of sinus infection and thus the ears and sinuses should be studied together. The clinical literature firmly places tuberculous otitis media as a serious outcome of tuberculosis, with far more evidence for tuberculosis affecting the sinuses and ears than other specific infections which are known to affect the cranio-facial region (i.e. leprosy and treponemal infections). This study addresses the gap in the literature by analysing skeletons of all ages and examines the sinuses and ears together. Microscopic, endoscopic and CT scanning of the crania of 305 medieval

Icelandic skeletons from four locations revealed high rates of both sinusitis (TPR 54.1%) and otitis media (TPR 69%). Sinusitis was detected in children as young as 4 years of age. Spicule formation in otitis media was also observed in 56% of neonates. Across all ages, individuals with both otitis media and sinusitis number 109 of 258 (TPR 42.2%) and demonstrated the link between the two conditions. The presence of tuberculosis in a number of cases from a relatively modest sample presents a strong case for the endemic presence of the disease and an etiological factor for the high rates of respiratory infection

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**Centre for Research in Evolutionary,  
Social and Inter-Disciplinary Anthropology  
University of Roehampton**  
*Lia Betti*

We are very excited to announce that we have recently secured the long-term holding and curation of the remains from a large Late Saxon-Early Norman cemetery. The site of Priory Orchard (Godalming, Surrey) was excavated by Surrey County Archaeological Unit in 2014-15 and we have been cleaning and studying the collection since. The cemetery was in use c850-1200 CE, and consists of over 300 primary burials. Our students access the collection during their module in Human Osteology and Diversity, and the remains have been already used for some undergraduate dissertations. We accept volunteers to help cleaning and studying the remains in the summer months (a third of the remains are still waiting to be cleaned and looked at!), and we offer a 2-day training workshop at the end of May in preparation.

External researchers are welcome to access the collection by contacting Dr Lia Betti ([lia.betti@roehampton.ac.uk](mailto:lia.betti@roehampton.ac.uk)).

Students interested in postgraduate research now have the option of our new MRes in Ecology, Evolution and Behaviour (<https://www.roehampton.ac.uk/postgraduate-courses/ecology-evolution-and-behaviour/>).

The course includes potential projects in bioarchaeology and human evolution, and students will devote most of the year to their research project.

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**Department of Archaeology  
University of Sheffield**  
*Sophie Newman*

We have had another successful academic year in 2018/19, led by Lizzy Craig-Atkins and Katie Hemer (human osteology/funerary archaeology), Pia Nystrom (primatology/human osteology/human anatomy) and Kevin Kuykendall (palaeoanthropology). Many thanks and congratulations to our outgoing cohort of masters students (including Emilia Franklin, Delaney Mitchell, Blair Nolan, and Erik Rudakowski who all received distinctions), and we welcome in the new MSc intake of 14 HOFA, 3 Osteoarchaeology, and 4 Palaeoanthropology students.

This was Pia's last year of teaching, with her announcing her retirement for the end of January 2020. Pia has taught human osteology, palaeoanthropology and primatology in the Department of Archaeology at the University of Sheffield since 1995. She has provided unsurpassed support, guidance and mentorship for an entire generation of Biological Anthropologists (including a significant proportion of BABAO members) who have undertaken postgraduate training at the University of Sheffield. More than 350 Masters students have been guided by her through the MSc Human Osteology and Funerary Archaeology alone, and she has acted as supervisor or advisor for countless doctoral projects. As such, in September 2019 she was awarded the first BABAO Mentorship Award. She will be greatly missed in the Department, but we wish her all the best for her exciting new adventures in Sweden!

Katie Hemer and Sophie Newman hosted the 12<sup>th</sup> Annual Society for the Study of Childhood in the Past (SSCIP) conference at the Department from 30<sup>th</sup> October to 1<sup>st</sup> November 2019. Focusing on adolescence as a theme, the "Rebels without a cause? Accessing and exploring adolescents/adolescence in the past" conference brought together 46 delegates from North America, Europe, and Japan. With



keynote presentations from Professor Mary Lewis and Professor Jane Eva Baxter, and papers presented from diverse fields of research (notably Archaeology, Anthropology, History, and English literature), it offered a nuanced insight into the lives of those occupying this unique stage in the life course.

In April 2019 the annual Human Osteology Short Course was run by Sarah Poniros and Sam Purchase. We had 15 participants from a range of backgrounds, and the next course is due to run in April 2020. Sophie Newman, Sam Purchase, and Marion Shiner also ran an 'Osteology Lab' at the Woodland Heritage Festival in May 2019, organised by Caitlin Scott from the Department of Archaeology. The festival was attended by 450 people, and will run again in May 2020.

Many congratulations to Laura Baiges-Sotos who passed her viva in March 2019, and to Rebecca Haywood who passed her viva in August 2019. Congratulations also to Marit van Cant who submitted her doctoral thesis titled 'Dyed-In-The-Wool: The Impact of Occupational Behaviour and the Environment on Small Urban and Rural Communities in Flanders, c. 1200-1860 AD', and Emma Hook who submitted her doctoral thesis titled 'The hospital of St James: Investigating social function through cemetery demographics'.

#### *Updates*

We are delighted to announce Katie Hemer was promoted to Senior Lecturer in Bioarchaeology in December 2019. This year she has been involved in two departmental excavations, the second phase of excavation of an early Anglo-Saxon cemetery at Scremby, Lincolnshire with Hugh Wilmott, and continuing to work with Dyfed Archaeological Trust at the St Patrick's Chapel excavation in Pembrokeshire. Katie and Sophie Newman have also been undertaking analyses of the 18<sup>th</sup>-19<sup>th</sup> century St Hilda's, South Shields collection, including collaboration with colleagues from Sheffield's Faculty of Engineering.

In 2019 the Sheffield-based Rothwell Charnel Chapel Project coordinated by Lizzy Craig-

Atkins published its findings in a special edition of *Mortality Journal*. The project integrated architectural and archaeological assessment of medieval charnel houses and their locations with osteological assessment of surviving charnel deposits and evidence of medieval belief and ritual practice to argue for the deep embedding of charnelling within medieval religious practices. Lizzy has also been undertaking new research on a group of perinate and infant burials from St Hilda's, South Shields and assessing the human remains from the Viking Winter Camp at Torksey, Lincs.

Kevin Kuykendall conducted excavations at Creswell Crags exploring non-cave deposits for Middle and Upper Palaeolithic archaeology, and the possible location of the Medieval Creswell village to help the Creswell Crags develop a narrative about the source and significance of the 'Witch Marks' now recognised in many of the cave localities.

#### *Ongoing Doctoral Research Projects*

Barlow, A: Coming of age: a biocultural investigation of reproductive practices in Industrial Britain.

Ford, J.: Hyaenas and Neanderthals in the British Middle Palaeolithic.

Hook, E.: An archaeological and osteological investigation of the medieval hospital cemetery in England and Wales.

McAfee, I.: Osteoarthritis in past populations: risk factors and comparative analysis of clinical diagnoses and treatments.

Meza-Escobar, O: The "Cementerio General de Santiago" skeletal collection: lifeways and health experience of the population of Santiago de Chile ca. 1850-1970

Monaco, M.: A critical examination of social stratification in prehistoric Cyprus using skeletal and funerary data.

*Oleman-Grace, K.:* *Homo erectus* life history: revisiting regressions in the light of recently recovered smaller-brained individuals.

*Poniros, S.:* Roman migration patterns based on skeletal, archaeological, and written evidence.

*Purchase, S.:* A Radiographic Analysis of Middle Ear Infection in Human Skeletal Remains.

*Shiner, M.:* Transient relations: non-adult funerary practices in 1<sup>st</sup>-10<sup>th</sup> century AD Wales and Ireland and the origin of separate infant burial grounds.

*Strati, V.:* The effects of industrialization on the state of health and disease of a Victorian urban population: a case study from St. Hilda's Church, South Shields (Newcastle).

*Triozzi, B.:* A biocultural study of the Vestini population of Loreto Aprutino: diet, health, status, and identity in the 6th- 4th Centuries BC in Central-Southern Italy.

*Waller-Cotterhill, C.:* One foot in the grave: an experimental examination of the effectiveness and development of the Anglesey Leg and an analysis of prostheses during the long Nineteenth Century.

*Watkin, T.:* 3D geometric morphometric analysis of phalangeal torsion and rotational capacity in humans, primates and fossil hominins, and their application in stone tool use.

*Wigley, B.:* A bioarchaeological examination of the impact of early-life stress on later health outcomes using procrustean assessment of dental fluctuating asymmetry.

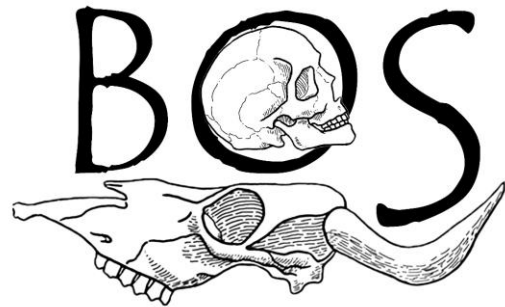
#### *Online Activities*

You can find regular updates regarding research projects and upcoming events via personal and project pages on our departmental website. The Department of Archaeology is also active on Facebook (<https://www.facebook.com/ArchaeologyShef>

field), Twitter (Shef Archaeology @UniShefArch), and YouTube (Archaeology Sheffield). Elizabeth Craig-Atkins is on Twitter at @ecraigatkins.

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### **Bioarchaeology & Osteoarchaeology at University of Southampton (*Bos*)** *Sonia Zakrzewski*



I feel as if I start each year's report with the same sentence! The last year has been another busy year for both staff and students at Southampton.

Most of the *Bos* staff are based in Archaeology – but we also spread into Anatomy, Anthropology and Bioengineering.

Dr **Andrei Soficaru** is continuing with us as a Marie Skłodowska-Curie post-doctoral fellow, working on the Women at the Edge of Empire project during his time in Southampton. This project draws together human osteology, stable isotopes, mortuary behaviour, material culture and epigraphy to examine how the identities of migrant women, and local women married to migrant men, responded to intercultural contact at the eastern border of the Late Roman Empire (4-6th centuries AD).

Professor **Joanna Sofaer** is continuing her position as Humanities in the European Research Area (HERA) Knowledge Exchange (KE) and Impact Fellow. This position has recently been extended to last until July 2020. Dr **Sonia Zakrzewski's** collaborations with Engineering are continuing with **Alex Dickinson, Markus Heller** and **Martin Browne**, studying stress and structural integrity in teeth and long bones through microCT ( $\mu$ CT). **Jaco Weinstock** has been continuing his zooarchaeological study of the faunal remains from Amara West in Sudan (with Ellie Williams [Canterbury Christ

Church] & Neal Spencer [British Museum]). Professor **Alistair Pike** has been continuing a series of isotopic studies of skeletal remains from a wide range of time periods – but still retaining his focus on early hominins. And we've welcomed back **Sarah Stark** as a member of staff too!

Over in Anatomy, the team comprises **Scott Border, Ian Jenkins, Jenny Skidmore, Stuart Morton, David Walker** and **Amgad Sbayah**. They are always wonderful at letting archaeologists into the dissection rooms!

Our first cohort of MSc Archaeology students has now graduated. Some of these followed a wide curriculum, whereas others followed a Bioarchaeology pathway. Those following the latter pathway were required to take compulsory modules in the Bioarchaeology of Human Remains and the Analysis of Archaeological Faunal Remains, together with optional modules in palaeopathology, themes in osteoarchaeology and molecular archaeology.

Additionally, our second cohort of integrated Masters students has now graduated. These students, who obtained either MArc or MSciArch, were able to continue their studies for a fourth year, following a Masters level programme of modules and research.

### **Current Research Students**

Three students successfully defended their doctoral theses. **Dr Samantha Field** (co-supervised by Sonia Zakrzewski & Simon Mays) had graduated, having completed "Re-evaluating the use of dental wear as a tool for estimating age at death in British archaeological skeletal remains." She is now working for one of the research councils at Polaris House in Swindon. **Carolyn Felton** (co-supervised by Sonia Zakrzewski & Joanna Sofaer) successfully defended her PhD thesis entitled "A Multifactorial Approach to the Estimation of Sex using the Facet Joints of the Spine" earlier this year. And **Christianne Fernee** (co-supervised By Sonia Zakrzewski and Kate Robson-Brown at University of Bristol) also defended her thesis, entitled "Like Pulling Teeth: a Study of Variation in Tooth Size and Shape in Historic and Modern Populations." She is currently working in

Bristol in a short-term research position and writing up the papers from her research.

**Emma van der Velden** has just started her doctoral research, looking at Romano-British identity and the North-South divide. She is using isotopic evidence of migration and diet and grave goods and burial methods to look at how the identity of individuals may have been constructed within the different legal settlement types of Roman Britain. Despite only having started her doctoral research in the autumn, she has already obtained a Public Engagement grant from the University of Southampton and won the University of Southampton research communication award!

### **Continuing Research Students:**

*Mike Burgess* - Neolithic zooarchaeological and human assemblages to evaluate changing ecology.

*Steph Evelyn-Wright* – Attitudes to and recognition of disability in Roman bodies and their representation and burials in cemeteries

*Nina Maaranen* (through University of Bournemouth) – Bioarchaeological identification of the Hyksos.

*Emily Mitchell* – healing and treatment of trauma on board the Mary Rose

*Kaylea-Ann Raczkowski Wood* – Neanderthal mobility and locomotion

### **Dissertations Approved for the MA Osteoarchaeology 2018-2019**

*Elizabeth Aubin* – A re-examination of how Tuberculosis is diagnosed in human bones by archaeology: using a multidisciplinary approach for the understanding of a timeless disease

*Emma van der Velden* – Migration and Ethnicity at a Roman Cemetery Site in Canterbury, Kent

### **Dissertations Approved for the MSc Archaeology (Bioarchaeology) 2018-2019**

*Brandon Dillinger* – Fish Bones: A Focus on Methods and Analysis for Fish Bones in the Archaeological Context.

*Rebecca Elliott* – Intra-Individual Evaluation of Cortical Thickness in Individuals with Disease Processes

*Cristina Garcia Leal* – Stature Estimations and Sexual Dimorphism in Ecija, Spain

*Kamil Prus* – Life on Bread Row: A Steady Isotope Study of Prisoners from Launceston County Gaol

*Hathaichanok Vinichsorn* – The Analysis of Stress markers during Childhood and the Effects on Adult Morbidity and Mortality at Khok Phanom Di, and archaeological site in Thailand.

#### **Integrated Masters Courses (2018-2019):**

##### **MSci Archaeology:**

*Jesse Bean McCabe* – Digitising Great Chesterford

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#### **Department of Archaeology, Anthropology and Geography**

##### **University of Winchester**

*Heidi Dawson-Hobbis*

It has been another busy year in the department now expanded to archaeology, anthropology and geography. Monika Knul joined the department in January 2019 as a lecturer in archaeological and geographical geomatics and also has skills in zooarchaeology. We also saw the official opening of the new Forensic laboratory by David Suchet CBE in September, which is proving to be an excellent new space for teaching. The anthropology degree which commenced in September 2017 is growing in student numbers and should see the first cohort of students graduate this year. A joint honours degree in anthropology and archaeology also commenced this September. The ‘King’s and Scribes: birth of a nation’ exhibition opened at Winchester Cathedral in May 2019 with contributions from Prof Barbara Yorke and Dr Heidi Dawson-Hobbis in collaboration with colleagues from the Universities of Bristol, Manchester and Oxford.

Dr Paul Everill continues his research excavations on two cemetery populations from the Hellenistic and Byzantine periods at

Nokalakevi, Georgia in collaboration with the Georgian National Museum and National Agency for Cultural Heritage Preservation of Georgia.

#### ***Dissertations approved for the MSc Human Osteology and funerary studies (graduating 2019)***

*James Badger* – Healing and Leprosy: A comparative study of ante-mortem injuries and care at St Mary Magdalen leprosy hospital, Winchester and Litten cemetery, Newbury.

*Louise Chambers* – Well, Well, Well, what do we have here? Romano-British and/or Anglo-Saxon: a comparative analysis of the skeletons found in Oakridge Well, Basingstoke.

*Tom Evans* – Investigating the organisation and layout of the Anglo-Saxon cemetery at Worthy Park near Winchester, Hampshire.

*Karolina Stanevic* – The issues arising from using the study of grave goods as a method to determine the biological sex and gender in Anglo-Saxon and Viking Age cemetery populations.

*Hayley Warren* – How were lepers treated after death in medieval England?

#### **PhD awarded in July 2019**

*Dawn Cansfield* – A demographic analysis of mortuary practice across time and space in south-east England during the Early Neolithic period. Supervised by Nick Thorpe and Keith Wilkinson.

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#### **POSTGRADUATE RESEARCH ABSTRACTS**

##### **Coming of age: a biocultural investigation of reproductive practices in Industrial Britain.**

*Aimée Barlow*

*University of Sheffield*

##### *PhD Abstract*

A woman’s experience of sexual maturity, pregnancy and motherhood can vary considerably, making it challenging for bioarchaeology to contribute to our understanding of this fundamental part of

womanhood. Current investigations of sexual reproduction in past populations rely on historical sources for reproductive history, while osteological analysis can be used to examine pubertal growth and isotope analysis to investigate breastfeeding practices. Attempts have been made to identify skeletal indicators of pregnancy, with no success. The potential of incremental isotope analysis, which traces nutritional and physiological status across the life course, for the study of reproductive history has yet to be realised.

This project aims to investigate the osteological, historical and medical evidence for reproductive histories of women in post-medieval Britain through the test of Feuillatre *et al's* (2018) method of incremental isotope analysis on the dentin of third molars. Individuals from the post-medieval assemblage of St Hilda's Cemetery, South Shields will be examined. The findings will be contextualised through examination of historical records such as census, parish registers and demographic data associated with the population studied and osteological examination of health status in perinatal individuals as a proxy for maternal health. By using incremental isotope analysis this research will provide an invaluable insight into the reproductive experiences for women on an individual basis, while contributing to our wider understanding of fertility and reproduction in Industrial Britain.

Feuillatre, C. *et al.* (2018). Isotopes and early reproductive life: a pilot study using modern teeth from Sudanese individuals. Bradford: University of Bradford. [Unpublished item].

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**A comparison of post mortem computer tomography protocols in ancient Egyptian mummy studies versus current forensic recommendations – A systematic review**

*James Elliott*

*Teesside University*

MSc thesis (Submitted)

Background:

Computer tomography (CT) imaging of ancient Egyptian mummies provides a non-destructive investigative opportunity and forms a permanent record for future research. However, there has been criticism for variable

quality in academic literature. One aspect is the imaging protocol, which dictates the process of image acquisition. In contrast to mummy research, the field of forensic radiology has generated specific recommendations for post-mortem computer tomography (PMCT). This systematic review was conducted to investigate the CT protocols of primary research of ancient Egyptian (adult) mummies, using recent PMCT forensic recommendations as the gold standard to assess for compliance and generate suggestions for future practice.

Methods:

Search terms including mummy, mummies, ancient Egyptian, computed tomography, CT and PMCT were used in PubMed, Science Direct, Google Scholar and Teesside University Library website to identify potentially relevant articles. Only peer-reviewed literature from journals from the last 20 years were considered for analysis, with included studies involving whole body supine imaging. CT protocol parameters for each included study were extracted and homogenised for meta-analysis using descriptive statistics. The forensic PMCT recommendations provided by Gascho, Thali and Niemann (2018) formed benchmark values for comparison.

Results:

Of 274 identified studies, 10 were selected for data extraction. Provision of CT protocol parameters within studies was variable, with 90% providing values for tube voltage, tube current and slice thickness, whilst 30% provided pitch and rotation time values. Based upon available data, 8 studies had very poor compliance to forensic guidelines (0-33%), whilst 2 were excellent (100%). Pitch and rotation time had the highest rates of compliance (100%, 67% respectively) but were based upon a very small sample size (n=3). Slice number capabilities ranged from 4 to 256 but did not show a correlation with higher compliance rate.

Conclusions:

Results suggest that studies do not conform to recent forensic PMCT protocol recommendations. However, this review suffered from a small sample size with incomplete datasets, where authors failed to

provide specific protocol parameters. Reasons for omission may be due to author or journal bias, whereby unfamiliarity or ignorance of significance impaired a full methodological account. Recommendations have included forming a bespoke CT protocol which is flexible with scanner capability and the encouragement of accurate and full methodological accounts in future publications.

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**The Lifeways of Enslaved People in Curaçao, St Eustatius, and St Maarten/St Martin: A Thematic Analysis of Archaeological, Osteological, and Oral Historical Data**

*Felicia Fricke*  
*University of Kent*

*PhD Abstract (submitted)*

In recent years, archaeologists have demonstrated that they can help to deconstruct dominant heritage narratives and develop new ones which are more nuanced and sensitive to both past and present stakeholder and subaltern communities. Here, material culture from excavated enslaved villages, human remains from enslaved cemeteries, and oral histories from interviews were used to construct narratives of the lifeways of enslaved people on the Dutch Caribbean islands of Curaçao, St Eustatius, and St Maarten/St Martin. Use of qualitative data in a thematic analysis facilitated nuanced understandings and allowed comparisons to be made between the islands and datasets as well as between the study area and other regions of the Caribbean and the wider Americas. It provided perspectives lacking in the existing literature: in St Maarten/St Martin the evidence indicated that enslaved people here had highly complex spiritual, cultural, and communal lifeways which were intricately linked with the island landscape; in St Eustatius the evidence indicated that enslaved people experienced high levels of stress despite periods of economic and material wealth; and in Curaçao the evidence indicated that the social structures of Atlantic slavery persisted well into the 20th

century. Overall, the study demonstrates that narratives describing slavery in the Dutch Caribbean as 'mild' have neglected many of the physical and psychological aspects of enslavement for which there is ample evidence. These new narratives are therefore important for our understanding of Dutch Caribbean heritage and structures of modern slavery, the development of island identities, and positive social and political change.

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**Life conditions between Late Antiquity and the Middle Ages in Tuscany (central Italy) through the analysis of skeletal and dental stress markers: a bioarchaeological approach**

*Giulia Riccomi*  
*Division of Paleopathology, University of Pisa*

*PhD Abstract*

This research presents the results of the first multidisciplinary regional bioarchaeological analysis aimed at a reconstruction of life conditions in ancient Tuscan communities (central Italy) between Late Antiquity (3rd-5th centuries AD) and the Middle Ages (mid 6th-mid 13th centuries AD).

Standardized methods of recording were employed to collect and compare data in the framework of a population-level analysis based on 390 individuals from one urban and two rural archaeological sites. The goal of this study was to test different hypotheses concerning the impact of sociocultural and environmental factors on changes in demography, adult stature, periosteal reaction, linear enamel hypoplasia, cribra orbitalia, cribra cranii and dietary trends during the transitional period that followed the collapse of the Roman Empire. The social determinants of stress markers and identity can vary greatly between regional areas and the only way to examine differences in life conditions across the Italian peninsula is through a more comprehensive, large-scale, integrated study of skeletal assemblages in a diachronic perspective. Central Italy, in particular, had sporadically

been the object of a diachronic study conducted on extensive and integrative data for this complex transitional period.

The osteological and stable isotope outcomes seemed to corroborate the environmental and archaeological evidence of new possibilities of agricultural, sociopolitical and economic diversification, reflecting the complex nature of the interaction between rural and urban contexts during this long period bridging two historical epochs. The data were discussed through biosocial approach, with a deep focus on the social, political, economic and environmental framework in which the past Tuscan communities were inserted, allowing to interpret health and living conditions as evidence of human plasticity and resilience over time.

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**A Bioarchaeological analysis of Spinal Pathology across Ancient Nubia between 300BC and 1500AD.**

*Samantha Tipper  
Durham University*

*PhD Abstract*

A comprehensive study of spinal disease has not yet been achieved for past Nubian populations, even though it can potentially tell us much about the health, welfare, and occupational and environmental stresses faced in ancient Nubia. This research presents a comparative study of spinal health, providing bioarchaeological results from 515 individuals (12,103 vertebrae), from five populations, dating from the Meroitic (300 BC) to the Medieval period (AD 1500). Individuals included in this study are from the sites of Semna South (n=192) and Mis Island (n=157), Gabati (n=80), Hesa (n=60) and lastly Soba East (n=26). Six spinal pathologies were studied, namely spinal fractures, spondylolysis, clay shoveler's fracture, Schmorl's nodes, osteoarthritis and spondylosis. A bio-cultural approach was used to interpret the results, using contextual data from settlements and cemeteries. Results

demonstrate an overall prevalence by individual of (8.9%) for fractures, (6.4%) for spondylolysis, (22.7%) for Schmorl's Nodes, (48%) for osteoarthritis, and (80.3%) for spondylosis, while no cases of clay shoveler's fracture were observed. Overall, the results revealed a number of trends, such as males affected most for all pathologies, an increase in all pathologies over time, with the highest prevalence rates observed in the Medieval period, as well as a higher prevalence among the populations from Hesa and Mis Island compared to the other populations.

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**Heads, shoulders, knees and toes: exploring bodies, body parts and personhood in late Neolithic Malta through funerary taphonomy**

*Jess Thompson  
University of Cambridge*

*PhD Abstract*

This research addresses the body and personhood in late Neolithic Malta (c. 3600–2300 cal BC) by reconstructing funerary practices at two collective burial sites: the Xemxija Tombs (Malta) and Xagħra Circle (Gozo). The range and sequence of funerary practices are identified through implementing taphonomic analysis to classify the condition and modification of bone and explore dominant trends in depositional practice. The temporality of mortuary practices is crucial for understanding the social dimension of the process of death and dying, revealing how the identity of the dead is transformed. This work further explores how mortuary rites responded to understandings of the body held during life. To do so, the treatment of the dead body is placed in its social context, integrating burial treatment, bioarchaeological evidence and material culture to provide a new interpretation of personhood in late Neolithic Malta. Analysing the full assemblage of human remains from six rock-cut tombs at Xemxija, and between 9.3–100% of the assemblage from 16 contexts at the Xagħra Circle, this research finds a predominant practice of primary interment and subsequent disarticulation in most burial spaces. Careful analysis shows this

was an extended process, in which the memory of the dead was maintained over several generations and social death was prolonged. Significantly, this process was inclusive of individuals from foetal to old adult in age and was not biased according to sex. Aligning the life-course with the death-course, a pervasive interest in modifying the body is evident. Similarities between the treatment of the dead and the fragmentation of figurines indicate bodily partibility enacted across multiple media. In all contexts, the body is figured and constructed in diverse ways, revealing that personhood was founded on difference. This research offers new insights into the ‘body worlds’ of Neolithic Malta which has implications for understanding socio-political dynamics.

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**The "Cementerio General de Santiago"  
skeletal collection: lifeways and health  
experience of the population of Santiago de  
Chile ca. 1850-1970**

*Ofelia Meza-Escobar  
University of Sheffield*

*PhD Abstract*

By analysing the “Cementerio General de Santiago” skeletal collection (curated at the University of Chile), this project will generate bioarchaeological evidence of demography, growth and development, health status and exposure to infectious disease among inhabitants of the late 19th and early 20th centuries Santiago, Chile. These individuals represent the working-class inhabitants of Santiago that endured an intensive economic transition period of rural-to-urban migration (1885-1952), during which the majority encountered deficient living conditions such as a lack of health care, poor hygiene, and limited access to basic services, among other challenges (Abarca 2011). Using theoretical frameworks based on intersectionality theory (Yaussy 2019), Life Course theory (Agarwal 2016) and Developmental Origins of Health and Disease approach (Gowland 2015), this research will identify and analyse skeletal markers that reveal health during childhood, puberty, adulthood and old age, thus creating

an extended osteobiography of a city. The project will also explore historical and epidemiological information from governmental and independent records addressing the social and demographic changes that occurred during this period in Chile that could affect the health status, lifestyle and well-being of the population. The ability to contrast bioarchaeological markers with historical and epidemiological records of the time offers the opportunity to gain a deep understanding of how observed patterns of health and lifeways may relate to patterns of urbanisation and migration and what is known about how this community lived when they arrived in the city.

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**Urbanism and its impact on human health:  
a long-term study at Knossos, Crete**

*Anna Moles  
University College London*

*PhD Abstract (submitted)*

This thesis presents a study of how social, economic and political changes impacted on the everyday lives of the people of Knossos, in terms of their health and diet, during the Hellenistic, Roman and Late Antique periods. Knossos, in north-central Crete, was an important site in Aegean and Mediterranean networks throughout this timespan, though the city experienced cycles of urban development and decline. The osteological research is contextualised using previous work on material culture and textual sources.

This study demonstrates how much can be done with a problematic legacy assemblage and provides a model methodology for how to approach difficult, fragmentary, and commingled material. A palaeoepidemiological approach was adopted and recording by element rather than individual was necessary. A selection of skeletal and isotopic analyses was conducted in order to investigate the demography, diet, development, and activity documented by the assemblage, as broad indicators of health.

The results of this systematic study demonstrate that changes were not only manifested in the political administration,



cultural tastes, and urban fabric of the city but also filtered down into the everyday lives of people, affecting their fundamental wellbeing and way of life. Changes occur in diet, activity and living conditions between the Hellenistic and Roman assemblages, and an inactive elite class appears to emerge. The later transition into Late Antiquity is a more gradual socio-economic change and this is also reflected in the less substantial differences in health and lifestyle indicators. However, there is a general picture of an improvement in living conditions alongside the reduction in population size, with less pressure on food resources and suggestion of a less hierarchical society.

**A bioarchaeological examination of the impact of early-life stress on later health outcomes using procrustean assessment of dental fluctuating asymmetry.**

*Ben Wigley*  
*University of Sheffield*

*PhD Abstract*

The intergenerational mother-child dyad is a physiologically intertwined nexus, which in favourable conditions facilitates rapid offspring development. If the mother is biologically stressed, however, stress can be transmitted and adversely affect the genes regulating development, metabolism, and immune function.

As permanent first molar cusps begin to form perinatally and crown completion is achieved in the first years of life, an evaluation of their morphology will permit insights into the developmental processes experienced during the critical period of maternal dependence. Specifically, fluctuating asymmetry in molars reflects, and will serve as a proxy for, early-life biological stress. With dental size and shape defined through landmarks and semi-landmarks, Procrustes analysis will be used to assess morphometric variance and quantify fluctuating asymmetry.

To assess the impacts of early-life stress, osteological observations will be correlated with fluctuating asymmetry. For instance, developmental trade-offs are to be estimated

through long bone measurements as well as the onset and progression of puberty. Frailty will be evaluated through hypoplastic defects and periosteal new bone formation. While periodontal disease, which results from a proinflammatory state, will enable a consideration of an individual's underlying metabolism. Additionally, a Bayesian approach to age estimation will be employed to explore relationships between life-span and ontogenetic stress.

In summary, by using a life-course approach the impact and importance of complex epigenetic processes can be investigated bioarchaeologically, and it will be possible to generate insights into how development, frailty and longevity are inextricably nested within the earliest physiological interactions of the mother-child dyad.

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REVIEW OF THE 21<sup>ST</sup> ANNUAL BABAO  
CONFERENCE, 2019

*Diana Swales*  
*University of Dundee*

From the 13<sup>th</sup> to the 15<sup>th</sup> of September 2019 the 21st Annual Conference of the British Association for Biological Anthropology and Osteoarchaeology was hosted by the Natural History Museum in London.

The conference commenced with a session on Dental Bioarchaeology and an Open Session. The latter enabled papers to be presented on an interesting range of topics including repatriation, 3D modelling in extinct hominins and forensic identification, and an unusual case of the remains of seven people found in a medieval well in Norwich. The presentations generated some positive discussions at the drinks reception in the evening hosted by the Eastside Restaurant and Bar.

The four podium presentation sessions on the Saturday were Funerary Archaeology, Forensic Anthropology and Archaeology, Palaeopathology, and Populations and Diversity. The Sunday sessions were Activity and Biomechanics and Progress and Futures. These categories and the topics delivered by

the speakers were truly representative of all the subject areas represented by the BABAO community. There was also an excellent mix of presentations and posters from both the academic and professional sector. The choice of Keynote Speaker (Dr Jane Sidell) was perfect as her career represents both. The conference also saw a strong international presence, with representatives from countries such as Australia, the Netherlands, Spain, Italy and Germany and the full length of the UK from Aberdeen to Bournemouth.

The overall quality of the research presented throughout the conference was very high and the sessions were expertly chaired. The posters were equally impressive.

The BABAO Annual General Meeting was held for an hour immediately after lunch on Saturday. Several matters were discussed, including the possibility of a BABAO publication and the announcement of the new trustee members. There was such a good level of engagement with the content under discussion that it was very challenging to contain the discussions within the allocated time.

The Annual Conference Dinner was hosted at the Rembrandt Hotel. The delicious three course meal was followed by the famous BABAO

quiz. The quiz, especially the music round, was thoroughly enjoyed by all.

A highlight of the conference is always the presentations of awards at the end of the last day. This year the Jane Moore prize for best student podium presentation went to Yuka Shichiza (University of York) and the runner up was Daniela Tumler (Institute of Mummy Studies & Ludwig Maximilian University of Munich). The Bill White prize for best student poster went to Alice Rose (University of Cambridge) with Maia Casna (Leiden University) named as the runner up.

Many congratulations to the organisers of the London conference. It really was a very enjoyable conference and a great success.

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#### FORTHCOMING CONFERENCES, COURSES AND WORKSHOPS

#### **22nd Annual Conference of the British Association for Biological Anthropology and Osteoarchaeology**

We are pleased to announce that BABAO's 2020 conference will be held by Teeside University on the 11th - 13th September 2020.

# BAAO 2020

22<sup>ND</sup> ANNUAL CONFERENCE OF THE BRITISH ASSOCIATION FOR  
BIOLOGICAL ANTHROPOLOGY AND OSTEOARCHAEOLOGY

11<sup>TH</sup> – 13<sup>TH</sup> SEPTEMBER 2020  
TEESSIDE UNIVERSITY

ORIGINAL IMAGE: SCANNING ELECTRON MICROSCOPE IMAGE OF NORMAL BONE ARCHITECTURE © ALAN HOYDE (OMU)



MEMBERS' PUBLICATIONS  
– 2019 –

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