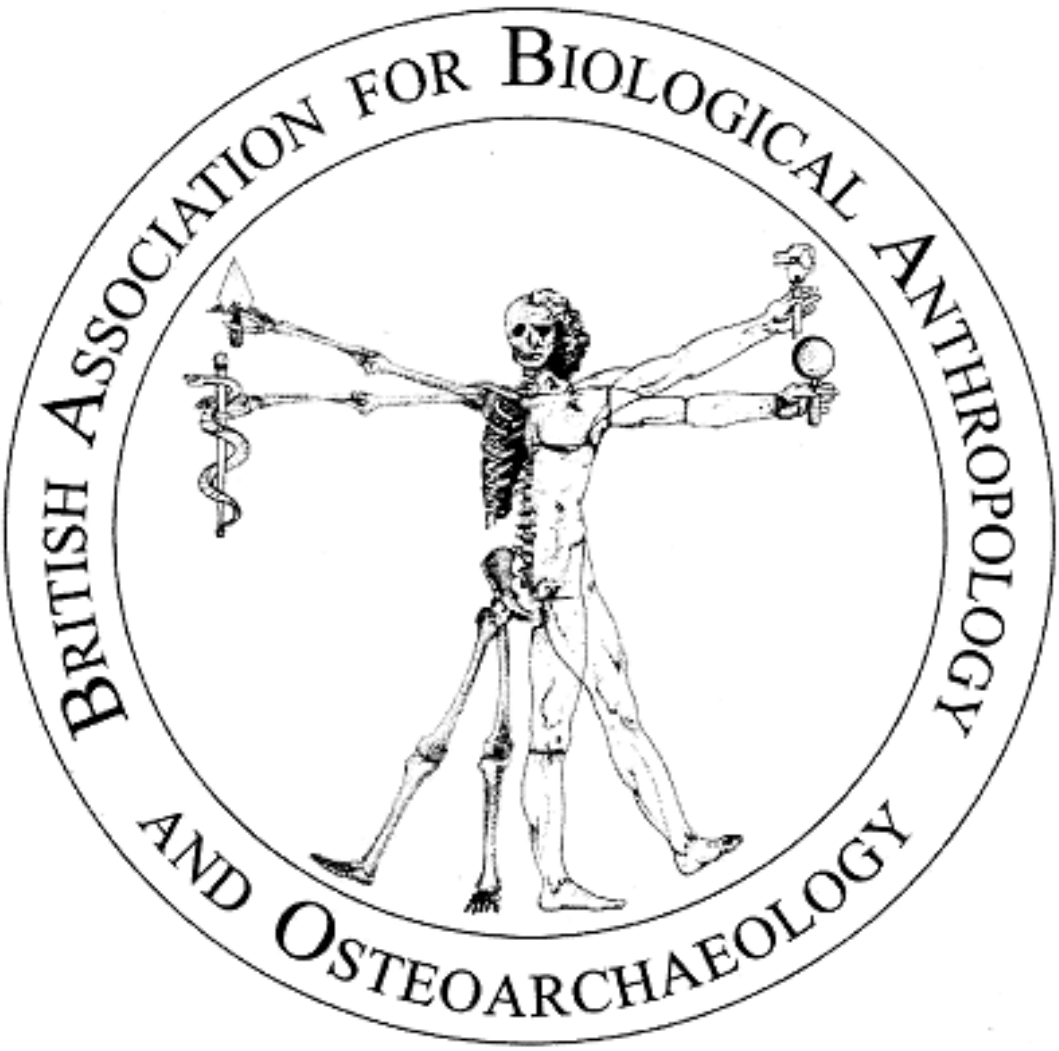

Annual Review 2021

February 2022 Issue 23

ISSN 1468-9421

BRITISH ASSOCIATION FOR BIOLOGICAL ANTHROPOLOGY AND OSTEOLOGY ANNUAL REVIEW

EDITOR
Charlotte Primeau
University of York

Membership details can be obtained from: Dr Bennjamin J. Penny-Mason, York Osteoarchaeology. Email: academia@bennjaminjpm.com

Contributions for the Review should be sent to the Editor: Dr Charlotte Primeau, Department of Archaeology, University of York. Email: Charlie.primeau@york.ac.uk
www.babao.org.uk

WELCOME TO THE ANNUAL REVIEW FOR 2021 ..... **1**
ASSOCIATION NEWS **1**
President's Column 1
Report from the Membership Secretary 2
Report from the Grants Secretary 3
Report from the Sub-Group for Trade and Sale of Human Remains 4
Report from the Sub-Group for Equality, Diversity and Inclusion 4
PEOPLE **6**
NEWS & PROJECT UPDATES **6**
MUSEUMS AND OTHER INSTITUTIONS REPORTS **6**
Cotswold Archaeology 6
MOLA (Museum of London Archaeology) 7
Museum of London 9
Oxford Archaeology Heritage Burial Services 11
Sedgeford Historical and Archaeological Research Project (SHARP) 15
York Osteoarchaeology 17
DEPARTMENTAL REPORTS **18**
Cardiff University 18
Cranfield University 20
Durham University 22
Teeside University 24
University of Bradford 25
University College London 27
University of Edinburgh 28
University of Leicester 30
University of Roehampton 31
University of Sheffield 32
University of Southampton (BOS) 34
University of Winchester 35
POSTGRADUATE RESEARCH ABSTRACTS **36**
CONFERENCE REPORTS AND REVIEWS **40**
Taking a Breath: Reflecting on Respiratory Disease in Bioarchaeology (7th-8th June 2021) 40
(UN)Natural lives - Bioarchaeology of urbanization research group conference (19th-20th October 2021) 41

FORTHCOMING CONFERENCES, COURSES AND WORKSHOPS 41
MEMBERS' PUBLICATIONS 2021 42

WELCOME TO THE ANNUAL REVIEW FOR 2021

Charlotte Primeau
University of York

Last time the annual review was sent out, we were in the middle of the pandemic. I would like to say it is great to see that things seem to slowly be getting back to normal, but I also think it is safe to say that things have changed, and we are entering a new normal were a lot is not what it used to be.

We are getting more use to a virtual format, with online seminars, conference, courses, and meetings. It is evident that these formats are running more routinely with fewer glitches than we saw a year ago.

It has still been a difficult year for many, if for nothing else, getting used to a new, perhaps permanent way of working and hence a new way of living and participating in society.

It has been really inspiring to see the successes of students passing their courses and collaborations between departments and researchers still going on. It is testament that despite all we still have a flourishing community.

We have also seen some changes within the Board of Trustees for BABAO, with several longstanding Trustees leaving and the influx of some familiar faces and some new faces to continue the work within our community.

Gratitude must be mentioned to our out-going Grants Secretary, Sophie Newman from University of Edinburgh and also Kristina Lee from Alecto Forensic Services who represented the Professional Organisation. Thank you for all your hard work in supporting BABAO for these preceding years.

We are welcoming a new Grant Secretary, Rachel Schats from Leiden University and also joining the BABAO Board of Trustees as a representative from a Professional Organisation is Kirsty Owen from Historic Environment Scotland. Welcome to you both! We are looking forward to working with you.

I hope you all enjoy the Review and thank you for finding time to include your valuable contributions and sharing your knowledge, experiences, news and updates with the rest of us within the BABAO community.

ASSOCIATION NEWS

President's Column

Rebecca Redfern
Museum of London

Dear Members,
Despite another year where our personal and working lives have been affected by the pandemic, looking through the minutes of our committee meetings, I have been cheered and impressed by the huge amount that BABAO has achieved. We have been able to do this because the membership and trustees continue to work together so effectively, with great dedication and goodwill.

We have had a number of successes throughout the year, including grant giving and the creation of two new awards in memory of Profs. Don Brothwell and Holger Schutkowski – those would not have been possible without the generosity of an anonymous donor. Prof. Tim Thompson was chosen to be Chair of the QAA Anthropology board, and Dr Anwen Caffell was beneficiary of our Service Award. We also created a range of policies and standard operating procedures that allow us to operate transparently, ethically and with accountability, and these also set out the expectations of behaviours and responsibilities for all members, which includes limiting membership to those aged 18 years and older. In response to Brexit, we have updated our data protection procedures, and will continue to ensure our compliance with the regulations of the Charity Commission for England and Wales. I know from speaking to many of you, that this year has also seen people completing their post-graduate studies, taking-up new jobs, gaining promotions and having success

with funding – many congratulations to you all!

The trustees continue to work on improving the website and finding a solution to publishing the research of our members – expect to hear more in 2022! We also hope to increase our online events, and have several planned in the new year. The triumph of our virtual annual conference shows that we can achieve this, and I would like to take this opportunity to thank Prof. Tim Thompson, Drs. Amber Collings and David Errickson and all their helpers for organising and delivering such a fantastic event. I have everything crossed that we will be able to meet in Newcastle next September.
In closing, I would like to thank all the members who have continued to work in front-line services, and those who have volunteered their time and expertise on behalf of BABAO. Whether this is in our EDI and Sale of Human Remains groups, or answering and responding to events and the myriad of questions seen on our email and socials. I hope that you continue to participate in our outreach events, and will put yourselves forward to stand in the elections later this year.
With all good wishes,
Becky

Report from the Membership Secretary

Bennjamin J. Penny-Mason
York Osteoarchaeology

At the end of 2021, BABAO had 525 active members, a small decrease on the 535 members which the society had at the end of 2020. BABAO recruited 85 new members during 2021 in comparison to 108 new members during 2020 (both figures including re-joining members); this was below the average for the last four years (103.5).

The composition of our membership remained similar to the previous year: over half of the membership comprised of waged members (287, 54.7%), as well as student members (163, 31.0%), unwaged members (53, 10.0%) and retired members (22, 4.1%).

A quarter of the membership (128, 24.4%) comprised of overseas members: the majority of which represented members from Europe (78, 60.9%), as well as North America (35, 27.3%), the Antipodes (9, 7.0%) and elsewhere in the world (6, 4.7%) – these proportions were similar to those of 2020.

More than half of BABAO members (319, 60.7%) provided information regarding their area of occupation (individuals were able to select up to two categories). Most reporting members were found to be employed within academia (152, 47.6%), followed by commercial archaeology (80, 25.1%), with smaller proportions in curatorial roles (24, 7.5%), as forensic practitioners (24, 7.5%) and as medical specialists (11, 3.4%). Additionally, some members (23, 7.2%) also declared other forms of occupation, including *administration, animal welfare, art, data analytics, engineering, financial services, hospitality, IT-related fields, law, leisure, retail* and *publishing.*

Of the 163 active student members, over three-quarters (139, 85.3%) provided information regarding their level of study. The reporting students were recorded as being engaged in doctoral (88, 63.3%), masters (38, 27.3%) and undergraduate (12, 8.6%) courses.

Approximately half of the membership (270, 51.4%) provided information on their areas of interest. *Human bioarchaeology* (254, 94.1%) and *forensic anthropology* (184, 68.0%) were the two most popular areas of interest, followed by *medical anthropology* (81, 30.0%), *human evolution* (60, 22.2%) and *primatology* (7, 2.6%). Additionally, some members (23, 8.5%) also declared additional areas of interest, including *archaeology, archaeological science, biomechanics, burned human remains, dental anthropology, funerary archaeology, gender studies, genetics, geometric morphometrics, mummy studies, palaeopathology, social anthropology, stable isotope analysis, taphonomy* and *zooarchaeology.*

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

Report from the Grants Secretary

Rachel Schats
Leiden University

In 2021, the BABAO Board of Trustees awarded three academic and three commercial research grants. Additionally, we were able to award three Sponsored Activities Grants and four Microgrants.

Project summaries Research Grants

Academic grants

Heidi Shaw (Durham University, UK) - £1,000.00

Testing the Limits of a New Method: Sex Determination Using Chromosome-Linked Peptides from Tooth Enamel

A new method developed by Stewart and colleagues (2016, 2017) using chromosome peptide isoforms of the amelogenin protein retrieved from human tooth enamel using a simple acid etch has shown to be a very reliable method for the estimation of sex in archaeological individuals. This project seeks to improve upon this method, transforming it from a qualitative method into a quantitative method using standard proteomic procedures. The shift to quantification will result in this method producing results that have increased statistical confidence, better control for false positive assignments, and more reliable comparisons within and between sample data sets.

Mackenzie Masters (University of York, UK) - £986.00

Oxygen isotope analysis of three contemporaneous mortuary populations from late Roman Ibida, Romania

This study uses oxygen ($\delta^{18}O$) isotope analysis of tooth enamel to explore migration and social behaviour at the Late Roman site of Ibida, Slava Rusă, Romania, drawing samples from three contemporaneous burial contexts consisting of a commingled high status family vault, a communal necropolis, and a commingled mass grave feature that was potentially the result of conflict. Results will contribute to a larger framework of multidisciplinary analysis of these burials, which considers aspects of bioarchaeology and social anthropology, to better understand migration and intercultural relations with Goths and Huns at the fringes of the Roman Empire during the Migration Period.

Ruth O'Donoghue and Mandi Curtis (University of Bradford, UK) - £990.00

High temporal-resolution carbon and nitrogen dentine microsampling from two non-adults with severe cuspal enamel hypoplasia

This project will utilise a new method of chemical analysis on the teeth of two children excavated from a 19th century London burial ground. Both children exhibit abnormal enamel formation on the cusps of all first permanent molars, indicating that they experienced some systemic stress within the first two years of life. Small micro-sections of tooth dentine will be sampled to investigate short-term changes to their diet and health during childhood, so that we may better understand this period of stress. The method used is an improvement on previous methods in this area, and will provide more detailed information.

Commercial grants

Emma Bonthorne (Aditu Arkeologia Koop. Elk. Txikia (commercial research organisation), Spain) - £2,218.71

Investigating diet and mobility in a medieval pilgrim hospital and parish church from Navarre, Spain

This project aims to increase the understanding of the population of Navarre (Spain) between the 11th and the 14th centuries CE through an isotopic analysis of individuals exhumed from the church and pilgrim hospital cemetery of Santa Maria de Zamartze. Results from collagen and carbonate will be used to assess geographic mobility and to identify diet-related differences amongst the population that may assist in highlighting social hierarchies and clarify other indicators of medieval identity. The results will serve in the creation of a database of isotope values for what is still a relatively unstudied region in Europe.

Milena Grzybowska (Archaeological Research Services Ltd) - £1,450.00

Multi-isotope and osteological study of decapitated and non-decapitated individuals from Black Cat Quarry, Bedfordshire

This pilot study explores the associations among decapitation practice, biocultural stress, geographical origin and biological affinity. Focusing on remains from Black Cat Quarry, Bedfordshire, a late Romano-British cemetery, a comparative study of decapitated individuals and wider population will be undertaken based on palaeopathological and dental non-metric data. Multi-isotopic (Sr, O, Pb and C) analysis of teeth will be conducted for two decapitated and two non-decapitated adult individuals to investigate possible differences of geographic origin between these two groups.

Gaynor Western (Ossafreelance) - £1,667.82

An Old Conundrum: Spatial Analysis of Paget's Disease Distribution in UK Archaeological Populations

Paget's Disease of Bone is a serious and painful metabolic condition that not only effects bone

density but can also lead to fractures, osteoarthritis, nerve and circulation issues, osteosarcoma and heart failure. It currently affects 1% of the over 55 year olds in the UK, more commonly in the Northwest of England, but recently there has been a significant decline in cases by over 60% since 1999. This study aims to use key evidence from archaeological skeletal assemblages to examine the rates and geographic distribution of the disease over time to help understand its changing prevalence across the UK.

Sponsored Activities Grants
Samantha Purchase – (Un)Natural Lives. BURG Conference 2021 - A digital conference for doctoral and early career researchers in osteoarchaeology and bioanthropology exploring the health implications of living in an urban environment.
Anna Davies-Barrett – Respiratory Disease in Bioarchaeology Symposium
Gaynor Western and Jelena Bekvalac - Producing an outreach resource pack for GCSE History – Medicine Through Time, including archaeological methods for understanding the context of deposits of human skeletal remains and the application of osteological forensics.

New Grants!
In 2021, BABAO started a new grant scheme: the Decolonising and Diversifying Osteology and Biological Anthropology (DDOBA) Grants, which supports the decolonisation of our research, learning and teaching, and diversification of our profession. This grant scheme operates alongside the current research grant scheme. The amount of funding available, application process, general eligibility criteria and deadlines are the same as the research grant scheme. Both academic (for independent researchers, members employed in research/teaching and students) and commercial applications (where members require 'buy-out' from their roles) will be considered. For more information, please visit https://www.babao.org.uk/grants-and-prizes/decolonising-and-diversifying-osteology-and-biological-anthropology-grant/.

New Awards!
BABAO, with the generous support of an anonymous donor, has created two awards to recognise excellence in undergraduate and master's theses. The Don Brothwell award will be given to an undergraduate thesis, and the Holger Schutkowski award to a master's thesis.
Each winner will receive £50, a year's BABAO membership, and the opportunity to present their research at the following year's BABAO conference.

- The deadlines for submissions are
    - Don Brothwell award (1st September)
    - Holger Schutkowski award (6th January)

For more information, please visit https://www.babao.org.uk/grants-and-prizes/don-brothwell-and-holger-schutkowski-awards/.

Update BABAO Research Grants 2022
The BABAO Grants application round for 2022 will open on February 1st 2022, and will close on May 1st 2022. 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 page https://www.babao.org.uk/grants-and-prizes/research-grants/.

Report from the Sub-Group for Trade and Sale of Human Remains

Trish Biers
University of Cambridge

The Trade and Sale of Human Remains Sub-Group has been hard at work tracking various sales of human mummified and skeletal remains. We have had some success with various auction houses agreeing to remove any human bones from their sale lots. The second phase of our survey is due to be released over the summer. Please do get in touch if you want to be involved or to report anything
at saleofhumanremains@babao.org.uk

Report from the Sub-Group for Equality, Diversity and Inclusion

Chair: Lizzy Craig-Atkins
Secretary: Kori Filípek

During 2021 the EDI group has expanded to 18 members, including all BABAO trustees. The first half of the year was marked by the completion of the BABAO race review and report, undertaken by Dr Jason Arday. Following a series of productive consultations

with members throughout December 2020 and January 2021, the findings of the review were collated and published in a 25-page report, which is available on the BABAO website. The report concludes with 27 recommendations which have been adopted as a work plan for the EDI group. It also includes the summary infographic of our previous EDI survey as an appendix, meaning all BABAO's EDI data collected to date is now available in one place.

The main recommendations of this report can be summarised under three headings:

Representation and diversification
A priority area for BABAO is in its membership, which has limited representation from people from Black, Asian and Minority Ethnic backgrounds. This contributes to a number of our blind spots identified in the report, as well as making BABAO a less inclusive environment for current and prospective members. The report recommends targeted efforts to support a more inclusive culture, including consultation with members and stakeholders of colour and decolonisation of the current structures and charitable activities.

Cultural competence
Another key area of consideration is in the organisation's understanding of and attitude to racism, which informs the code of conduct and attitudes of its members. It requires a level of racial literacy, such as being able to identify and challenge covert racism. The governance processes within the organisation must continue to drive this forward, with reporting mechanisms that are effective, expedient and culturally responsive.

Collective action
It is absolutely imperative for all members to engage in helping BABAO to become a more antiracist organisation. To foster this, BABAO needs to communicate commitment and investment in racial equity work, and steps should be taken to build community both within the organisation and its membership, as well as establishing wider partnerships with shared visions. The report recommends we seek to initiate courageous conversations to model the vulnerability required to do this meaningfully, to disrupt cultures of silence and promote action.

The EDI group is currently working on delivering five of the most pressing actions from the report:

- There should be a clear process for responding to and acting on feedback
- Communicate a more inclusive strategy and vision that is available both internally and publicly
- Identify key pinch points over the career pipeline and related membership stages that can be targeted through racially literate recruitment and advertising campaigns
- Continue work to decolonise the current charitable activities and ensure they are more inclusive
- To ensure victims of racism are offered culturally responsive support, outsourcing to appropriate external agencies if required and to ensure appropriate consequences are taken when dealing with racism, including strong management support and weight among trustee level

In addition to the specific race report work, one of the wider aims for BABAO has been to embed EDI work across the organisation through the trustee roles, our events and conference and charitable activities. There are a range of new and continuing initiatives which contribute to this aim:

- All trustees sit on EDI committee
- DDOBA grant scheme – for projects led by members from racially minoritized groups or that tackle issues of decolonising and diversifying our discipline.
- BABAO microgrant scheme
- New work on management structures, reporting and complaints procedures
- A renewed focus on inclusion in our annual conference

The EDI group continues to welcome new members at any time while we deliver the race report.

Resources and information can be found on the BABAO website here: https://www.babao.org.uk/committee/equality-diversity-inclusion-sub-group/

Lizzy Craig-Atkins stepped down as chair of the EDI group at the end of 2021 and would like to extend her sincere thanks for the opportunity to undertake this role for BABAO and to everyone who has contributed to EDI work over the past five years.

PEOPLE

Piers Mitchell, University of Cambridge, took over from Deb Martin on 1st January 2022 as co-editor responsible for human osteoarchaeology at the *International Journal of Osteoarchaeology*.

Dr. Laura Castells Navarro, started as s a Lecturer in Archaeology at the University of Exeter, in August 2021.

Prof Tim Thompson has recently been appointed Dean in the School of Health and Life Sciences, Teesside University.

Dr Gillian Taylor has recently been promoted to Associate Professor at Teeside University.

Dr Rebecca Scott has recently been appointed as a Lecturer at Teeside University

Dr Rhys Williams has completed his PhD on "Developing pXRF soil analysis of preservation at Vindolanda" and has recently been appointed as Lecturer at Teeside University.

NEWS & PROJECT UPDATES

No reports received

MUSEUMS AND OTHER INSTITUTIONS REPORTS

Cotswold Archaeology

Sharon Clough

Highlights-

2021 despite the challenges has been another very busy year for field work for Cotswold Archaeology.

Post-excavation analysis of some of the human remains recovered from this work is listed below:

Key Sites of 2021

Childrey Warren, Oxfordshire – Completion of the analysis of this linear excavation (Thames Water pipeline) which comprised 4 skeletal remains from Iron Age pits, a small Late Roman cemetery, small late Saxon cemetery and isolated burials. Publication due in 2022.

Science Museum Building One, Wroughton, Wiltshire – Completion of the analysis of this site of 13 Iron Age pit burials and Late Roman cemetery of 17 individuals.

GlosCat, Block M – centre of Gloucester site part of the Roman cemetery adjacent to an earlier excavation by CA called Media Studies. The site was the subject of the Annual Lecture (watch on CA YouTube channel), where the skeletal remains were discussed in relation to the high number of trauma injuries, and in particular the cranial injuries.

A120, Hadham Bypass, Hertfordshire - cremation burials from Middle to Late Bronze Age, Middle Iron Age, Early Roman and Late Roman and four late Roman inhumation burials.

Assessments were conducted on several sites including :

Long Wittenham, Oxfordshire – Anglo-Saxon burials (inhumation and cremation) recovered which was the continuation of the cemetery excavated in the mid 19th century. Since only the whereabouts of the grave goods are known from the Antiquarian excavations the human remains from the CA excavation are very significant as the only opportunity to gain biological information for this cemetery.

Sam's Lane, Blunsdon, Swindon –Roman cremation cemetery (34 urned and un-urned).
M11, Junction 7a, Harlow, Essex – 17 Iron Age and Roman cremation burials.
Various other sites were 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 with any queries
Follow our updates on twitter **@cotswoldarch or Facebook page CotswoldArchaeology & Instagram**

MOLA (Museum of London Archaeology)

Don Walker

Team
MOLA London: Michael Henderson, Elizabeth L Knox, Don Walker

MOLA Northampton: Chris Chinnock

The osteology team in London were joined by Robert Dunne who worked as an on-site osteologist during the excavation of a post-medieval burial ground and also assisted with some analysis work.

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

Elizabeth L Knox has returned temporarily to MOLA to help with analysis work. She returns after her 1st year as an AHRC Collaborative Doctoral Partnership (CDP) PhD Student in Archaeology, jointly supervised by MOLA and the University of Sheffield. During this time Elizabeth was on the organising committee for the BABAO funded Bioarchaeology of Urbanization Research Group (BURG) Conference: (Un)natural Lives 2021. Along with her Sheffield colleagues Elizabeth moderated and presented at the conference and Don Walker spoke and discussed his experiences as a panellist.

A continuing programme of HS2 community and engagement projects saw the osteology team involved in a further series of 'Osteology Live' workshops. Previously live-streamed from a digital classroom, these sessions were adapted for home schooling during lockdown and utilised video footage of anatomical models. The sessions provided science-based sessions relating to the KS3 National Curriculum.

Excavation and Contract Work:
A14 Cambridgeshire
Following on from excavations in advance of the A14 Cambridge to Huntingdon road improvement scheme, full recording is now complete on the c 100 inhumations and c 450 deposits of burnt bone from a range of sites ranging from the Neolithic up to the Anglo-Saxon period. A coordinated programme of scientific testing involving aDNA, isotope analysis and radiocarbon dating will be incorporated into the project results.

Shard Place, Southwark
Work is continuing the editing of a MOLA Studies Series volume reporting on the discovery and analysis of a 17th-century burial ground used to inter patients from St Thomas's Hospital, Southwark. Elevated mortality was observed in young adults, perhaps reflecting increased vulnerability to disease amongst servants and apprentices, many of whom would have migrated to London. Individuals with skeletal signs of venereal syphilis may have been housed in the specialist 'foul wards' that were known to have been built at the hospital. The burial ground also contained early evidence of surgical intervention in the form of limb amputation.

Lion Green Road, Coulsdon
MOLA returned to Coulsdon, Surrey (LGR15) where a further 12 inhumation burials were excavated. Six contexts containing human bone were recovered between 2016–2020. Several burials included grave goods including iron blades dating to the 7th to the 8th centuries. Two subadult burials contained Roman

artefacts, one with a sand-tempered ware necked globular beaker and one with penannular bracelets and perforated coins. It is possible that these may represent later burials with curated artefacts. Eleven burials and a small quantity of disarticulated bone were excavated from the same site in 1912–13 and are now curated at the Natural History Museum. A single skull from the earlier excavation is also located at the Horniman Museum, London. These remains are believed to belong to a 6th–7th century Saxon burial ground.

St Lawrence Burial Ground, Brentford
Work began on the recording of a large post-medieval assemblage excavated at St Lawrence Burial Ground, Brentford. This included burials from the 'new' (1884-1973) and 'old' (12th century to 1884) burial grounds. Analysis will contribute important information about demography and heath of the population from this underrepresented area of west London.

Kibwroth (Leics)
As part of continued residential development around the village of Kibworth, large open area archaeological excavations have unearthed remains dating from prehistory through to the early medieval period. Previous excavations had revealed early medieval burials. As part of the most recent phase of excavations two Roman inhumations, an adolescent and an unsexed adult, were discovered. A single crouched older adult male burial originally thought to be Bronze Age in date due to the proximity of a prehistoric barrow ditch, was proven to be of early-middle Neolithic date, following radiocarbon date analysis. The burial had been placed in a pit and a second skull, also probably male, had been placed higher within the same pit. The second skull was also sampled and gave a similar date to that of the crouched inhumation. Healed fractures were present in the distal left ulna and an unsided proximal hand phalange of the primary burial. The second skull displayed a possible traumatic wound to the right parietal though post-depositional/taphonomic damage could not be ruled out.

Upton, Northampton
Prior to residential development on the edge of Northampton, a programme of archaeological investigation recorded a single small deposit of cremated human bone. The pit in which the remains were found had been cut into the upper fill of a possible prehistoric monument.

Kennington (Oxon)
A total of three inhumations were discovered during excavations at a large multiphase site. An adult male had been buried in the fill of an undated ring ditch, a further adult male and a non-adult individual had been interred in discrete graves. Possible sharp-force trauma was noted in one of the adult males. Antemortem tooth loss (possibly as a result of trauma), spondylosis, possible clay-shoveller's fractures and non-specific periosteal lesions were also observed. At present a tentative Iron Age date has been assigned based on a single fragment of pottery. Radiocarbon dating has been recommended.

A43 Corby Link Road (Northants)
Archaeological excavations in advance of road construction and associated infrastructure revealed a number of sites dating to various periods. Two poorly preserved inhumations were recorded and likely date to the early medieval period. Two deposit of cremated human bone were found in close association with a Roman enclosure system and one of the contexts provided a radiocarbon date, which confirmed a date within the Roman period. A further 25 contexts containing cremated human bone in another part of the site were resolved to be the remains of a middle Bronze Age cremation cemetery. Whilst most pits were thought to be burial pits, some may have been associated with the deposition of pyre waste.

Little Paxton Quarry (Cambs)
The latest phase of excavations on land at Little Paxton Quarry identified a series of enclosures dated to the Iron Age and Roman periods. In addition, a total of 13 contexts containing cremated human bone were recovered. These were dispersed over a large area, sometimes occurring in small groups or pairs. Only one of the contexts contained any

dateable material, a small piece of pottery dated to the Bronze Age.

Oxford New College (Oxon)
During archaeological excavation in advance of development at New College, Oxford, a single grave was identified. It contained the prone burial of an elderly female, directly overlain by the supine burial of a second adult female. No dating evidence was present within the grave though Roman and medieval features were identified in the vicinity. A radiocarbon date has been sought as part of further analysis. The second female to be interred in the grave displayed a scoliotic curve of the thoracic vertebrae.

Baston Manor Pit (Cambs)
Three deposits of cremated human bone were analysed as part of ongoing works at a quarry in Baston, Cambridgeshire. Earlier excavations in the area revealed inhumations and cremated bone deposits dated to the mid-late Roman period. The deposits of cremated bone were dispersed throughout the site.

Other sites
Publication of a large furnished early medieval cemetery associated with a prehistoric burial mound is expected in the new year and includes osteological analysis of c70 inhumations dating predominantly from the late 5th to 7th centuries AD.

The assessment and analysis of a large inhumation and cremation cemetery dated to the early medieval period and excavated in Northamptonshire is underway with further news and publication expected in 2022.

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

The year of 2021 remained predominantly as one still working remotely but we were fortunate to have windows of opportunities for some face to face engagements and had the implementation of a blended weekly working pattern from September with a mix of days on site and days working remotely from home.

In March I was fortunate to able to participate in the first-rate Bioarchaeology Early Career Conference BECC2021, brought together and organised so well by Elizabeth Church and Michelle Hay. Over the course of the on line conference from 25th -28th March the different themed sessions covered a wide range of topics with key note speakers, presentations, workshops and panel discussions. I had the pleasure on the last day of the conference, focused on Commercial and Museum Sessions, of taking part in the stimulating panel discussion *Strengthening Links between Academia, Commercial, and Museum Sectors* with Dr Matthew C. Go, Chioma Vivian Ngonadi, & Ms Jeannette Plummer Sires.

The outreach event *In her Footsteps: a City of extraordinary women* that had been postponed from March 2020 was finally able to take place in May 2021 on site at the museum with me and with a walking tour across to Southwark culminating at the Cross Bones burial ground, in partnership with Saira Niazi, Founder and Guide of Living London. It was such a delight to be back at the museum and to be able again to engage face to face with people. For many of us on the day it was the first time of meeting in person in a social and cultural forum, a joyful experience much missed.

In early June I thoroughly enjoyed listening and learning from the presentations during the excellent two day on line symposium *Taking a Breath*, organised by the Bioarchaeological Respiratory Network. June also had the opportunity for me to participate in a school outreach event, the first for over a year, with girls from Year 5 & 6 at the City of London School for Girls. The event was a History Day covering a broad spectrum of time periods with girls dressing up as people from the past and taking part in an array of interactive activates, including one with me focused on of course skeletons! The day was great fun to be part of and so good to see all of the girls taking part full of enthusiasm for history.

At the end of June I was one of a group of Work Experience Champions at the museum working in conjunction with HR and the Learning & Engagement Team who teamed up with Culture Mile to offer one week of hybrid work experiences to 15 students (16-18 year olds) from one of the City of London Family of schools. Two different types of sessions were run and during the week on two afternoons I led a Skills workshop: Centre for Human Bioarchaeology and greatly enjoyed interacting with the students.

The BABAO annual conference from Teesside in September was super and congratulations again to everyone involved in its organisation and bringing it all together so successfully. It was so good to be able to connect and have the rich mix of presentations and posters. I had fun creating my other self in Gathertown but was not I think as skilled as others in my sense of navigating my way around!

October was a busy month taking part in outreach events, a conference and symposium. At the beginning of October I was lucky to take part again in the London Month of the Dead and was most fortunate to be able to give my talk based on the Impact of Industrialisation on London Health research project in the Dissenters Chapel at the atmospheric Kensal Green Cemetery. As part of the Guildhall Library events programme I gave an on line talk about the curated skeletal collections and it was a marvellous chance to be able to be connected to such a large and diverse audience. I was kindly invited by the Bioarchaeology of Urbanization Research Group (BURG) to participate on the panel discussion with Dr Sharon DeWitte, University of South Carolina, Don Walker, MoLA and Dr Zhichun Jing, Associate Professor, The University of British Columbia for their digital conference (UN)NATURAL LIVES, "*for doctoral and early career researchers (ECRs) in osteoarchaeology and bioanthropology exploring the health implications of living in an urban environment*." It was a privilege to be on the panel to answer questions, and have a platform for sharing and exchanging experiences and ideas.

I was very happy to accept an invite from Dr Marcos Plischuk, to participate in the symposium "Epidemiological Transitions: An approach to bone and dental pathologies in historical–contemporary populations from documented osteological collections" part of the XV National Conference on Biological Anthropology of Argentina, held in the City of La Plata, Argentina. With the much appreciated support and aid of IT I was able to record and send my presentation about the known named collection at St Bride's Church, Fleet Street. Dr Plischuk and Dr Jorge A. Suby and the team working for the conference did an amazing job bringing it altogether.

In November as part of the Being Human Festival, the museum hosted an evening event The Food and Idea Exchange, turning the Ellipse hall into a 'marketplace' with various stalls offering both food and interactive activities. I had fun taking part (but not eating!), giving a talk and having an activity table comprising of the CHB teaching collection.

Becky and I were able again with all necessary measures and precautions in place to take part in filming for programmes in August and October, and were again for a short time in the whirl of camera, lights and action! Gaynor Western and I have continued work around The Impact of Industrialisation on London Health including developing webpages to share project information which will be made available through the museum website.

The challenges for students and researchers I know continued in 2021 and hopefully the sharing of data from the osteological database was able to assist with projects and dissertations and the CHB looks forward to assisting again in 2022. Please do get in touch if we can be of help. Wishing everyone a good 2022 and connecting again for the annual conference.

Oxford Archaeology
Heritage Burial Services
Compiled by Helen Webb and Zoe Ui Choileain

Current team
Oxford Archaeology South: *Louise Loe (Oxford Archaeology Group Head of Heritage Burial Services), Lauren McIntyre (Osteoarchaeologist), Mark Gibson (Osteoarchaeologist), Helen Webb (Osteoarchaeologist), Annsofie Witkin (Osteoarchaeologist), Mandy Kingdom (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)*

Website:
https://oxfordarchaeology.com/
Facebook:
https://www.facebook.com/oxfordarchaeology
Instagram:
https://www.instagram.com/oxfordarchaeology/?hl=en
Twitter: https://twitter.com/oatweet
Flickr:
https://www.flickr.com/photos/63884732@N04/albums
Sketchfab:
https://sketchfab.com/oxford_archaeology

Fieldwork
Cambridgeshire
Burwell:
Early Bronze age funerary monument and a Late Bronze Age settlement identified. A single inhumation (adult male) was recovered from the centre of the monument and two inhumations were recorded in the settlement area – an unsexed/unaged partial burial and a partial adult female burial with three crania (from an adult male, an adolescent and an older child) placed upon it. In addition to these burials over 20 deposits of disarticulated human remains have been recovered from the fills of large storage pits. The majority of these examples are whole craniums or fragments of skull, though femurs have also been recovered. A single unurned cremation has been recorded outside the limits of the main settlement, date currently unknown.

Gloucestershire
Chesterton Farm, Cirencester:
A total of 19 Roman inhumation burials was recovered during excavations at Chesterton Farm. One adult inhumation burial (427) was notably isolated, buried prone and possibly with an *in utero* infant, within a boundary ditch in the eastern focus of archaeological activity, away from the main settlement area. A total of 12 unurned cremation deposits had also been inserted in the top of the ditch. Inhumation burial 427 was located directly below one of these cremation deposits. The other 18 inhumations were located in the SW corner of the site, positioned in rough rows, associated with an enclosure system. A range of burial practices was observed, including stone-capped graves and simple earth-cut graves. Some individuals had been buried in wooden coffins, identified by the presence of nails. Body positions were also varied with approximately half of the individuals having been buried prone. At least one was a decapitation burial with the head placed between the legs. Osteological assessment is yet to take place, but it is known that the remains comprise both adults and juveniles.

Oxfordshire
HS2 Fleet Marston, Area 12A, Roman cemetery:
Around 400 burials, 370 inhumations and 30 cremations, from North and South cemeteries, have been excavated. The majority are unfurnished, extended, supine W-E, coffined, inhumations. Variations include unurned cremations, N-S and E-W orientated inhumations, decapitation burials and some burials with grave furnishings (primarily pots). The skeletons are now being assessed.

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

- Crab Hill, Wantage – single inhumation with an iron knife, cutting a Late Bronze Age enclosure
- Glenvale Park, Northamptonshire – five probable Roman inhumations
- Corby Priors Hall, Northamptonshire – single crouched inhumation (possibly Roman)
- Sudbury, Suffolk – single cremation deposit (probably Late Bronze Age)

Post-excavation analysis/reports

Cambridgeshire
Farrier's Way, Warboys:
Full analysis and publication report (forthcoming) on 24 inhumation burials, five cremation deposits and disarticulated bone, dated to the Late Iron Age/Early Roman period through to the Later Roman Period. Burials included crouched inhumations within or close to a settlement, neonate burials associated with enclosure ditches or roundhouses and supine burials away from the settlement area, including two decapitation burials. Some of the later burials had associated coffin nails, whilst others had grave goods including one skeleton found with a shale bracelet, a necklace with glass and jet beads and an axe shaped bone hair pin. The rates of dental pathology were notably high, and observed skeletal pathology included non-specific inflammation, spinal and extra-spinal joint diseases, trauma (inc. rib fractures, a possible dislocation and myositis ossificans traumatica), minor congenital/developmental anomalies and a button osteoma.

Waterbeach Barracks New Town:
An assessment of 21 individuals from eighteen grave cuts, five contexts of disarticulated material and four cremations was undertaken. Provisional dating indicates that the earliest remains are late prehistoric but most are Romano-British in date. The inhumations were found in two discrete groups and there were also five isolated burials. Overall, the inhumations were in fair condition, comprising nineteen adults and two adolescents. Males and females are represented. There was evidence of poor dental health, as well as cases of joint disease, non-specific infection/inflammation and ante-mortem fracture. Work has been continuing on site at Waterbeach and more burials have been recovered. These will be analysed later in the year.

East Riding of Yorkshire
A63 Castle Street Improvement Scheme, Kingston Upon Hull:
Fieldwork at the post-medieval Holy Trinity Burial Ground (ahead of improvement to the A63, Castle Street for Balfour Beatty on behalf of National Highways) is now complete. In the region of 9000 burials was excavated, most individuals having been buried in earth cut graves, with a minority in brick tombs and a small number in lead coffins. Thirteen individuals have been identified to name by their association with coffin plates and/or grave markers. A sample of 1500 individuals was selected for full analysis in an on-site laboratory. All skeletons were reburied in accordance with the faculty. Post-excavation assessment of the osteological data is now underway. For more information visit: https://highwaysengland.co.uk/our-work/a63-castle-street-archaeology/

Gloucestershire
Ruddle Court Farm, Newnham:
Five urned and two unurned cremation deposits, dating to the Roman period, were recovered during archaeological excavations at the site of Ruddle Court Farm. The most noteworthy of the burials was a large deposit, totalling almost 2kg, which had been placed within a blue glass vessel (late 1st-2nd century AD). The glass vessel had then been placed inside a pottery urn, which was then surrounded and capped by packing stones. Another small pot, and a small unurned deposit of pyre debris, were present within the same burial pit. Each of the seven deposits represented a minimum of one individual, all either adult or older adolescent, and at least two were probably males. The only pathology observed was periostitis. The bones were generally well oxidised and there was no evidence for structured deposition within the urned deposits.

Hertfordshire
Whittington Way, Bishops Stortford:

Thirteen deposits of cremated human bone, both urned and unurned, and three inhumations were recovered from the later prehistoric and Early Roman settlement at Whittington way, Bishops Stortford. The inhumations are all dated to the pre-Roman conquest; burial 2115 is dated to the late Bronze age. Inhumation 2080 and burial pit 3537 are provisionally dated to the later Iron Age. The cremation burial pits are currently thought to represent the continuation of small rural burial plots, spanning the Late Iron Age to Early Romano-British periods, based on pottery within the cremation burials and strategic radiocarbon dating of the calcined bone.

Kent

Rhodaus Town, Canterbury (for Canterbury Archaeological Trust):

Analysis of c 200 late Roman adult and juvenile skeletons. Preliminary analysis suggests a higher proportion of males than females, although many adults could not be sexed owing to poor survival of diagnostic features. The assemblage exhibits a range of dental pathology, including calculus, caries, ante-mortem tooth loss, periapical lesions and enamel hypoplasia. Skeletal pathology includes non-specific inflammation/infection, minor cases of spinal and extra-spinal joint disease, a possible case of Paget's disease, antemortem trauma and evidence for decapitation. A total of 40 individuals has been selected for isotope and aDNA analyses.

Lincolnshire

Lincoln-Ancaster Pipeline:

Analysis and report on five articulated skeletons (all adult), ten deposits of disarticulated bone and six small deposits of burnt bone, recovered along the Lincoln to Grantham Pipeline excavations. Four of the articulated skeletons were dated to the Iron Age and one was Roman. One of the Iron Age skeletons exhibited diffuse, bilateral, active, periosteal new bone formation, indicative of systemic disease. Pleural plaques were also recovered with this individual. Amongst the differential diagnoses was hypertrophic osteoarthropathy, possibly relating to pulmonary disease.

Oxfordshire

St John's Hospital Burial Ground, Magdalen College, Oxford:

Full osteological analysis of 114 medieval skeletons excavated from St John's Hospital burial ground, revealed during works on Magdalen College's library extension, was completed in late 2021. Data analysis is now underway, with reporting to follow in early Summer, 2022. Early indications are that the assemblage contains higher than expected proportions of juveniles and females, and that respiratory diseases, including tuberculosis, were prevalent.

Sutton Courtenay Lane, Didcot:

A total of 14 inhumations, two burnt bone deposits and three contexts of unburnt disarticulated bone were fully analysed. The inhumations spanned the Iron Age, Roman and Mid Saxon periods, whilst the burnt and disarticulated bone deposits were Roman. The single Early-Middle Saxon skeleton was found with a whittle tang iron knife. Of particular note is a Late Iron Age-Early Roman prime adult female skeleton with multiple peri-mortem sharp force trauma lesions, observed on the left and right ribs and the left humerus, radius and innominate. One of the Roman skeletons exhibited multiple antemortem hand fractures, including probable traumatic amputation of a left finger, whilst another had probable perimortem fractures to the left zygomatic bone and mandible, including a fractured molar. A possible case of brucellosis was also identified.

Small assemblage reports

- Yardley Road, Olney, Buckinghamshire – full analysis report on four cremation deposits (one Middle Bronze Age, rest undated)
- Cambourne West, Cambridgeshire – assessment report on a Roman neonate inhumation and a disarticulated adult humerus from an Iron Age ditch
- Ely North-West Field D extension, Cambridgeshire – assessment report on a single inhumation and two urned cremation burials, probably relating to the substantial Anglo Saxon cemetery identified in Field D

- Horseheath Lane, Linton, Cambridgeshire – assessment report on two inhumations and four cremation deposits from a Bronze Age barrow. One inhumation was found with a small Anglo-Saxon knife. Other burials are assumed to be Bronze Age based on funerary urns. Awaiting radiocarbon dating results
- Peterborough Plot 210, Cambridgeshire – full analysis report on a single crouched inhumation burial, dated to the Middle Iron Age. A copper-plated iron brooch was found at the neck of the skeleton
- Sawtry, Gidding Road, Cambridgeshire – assessment report on an Early-Mid Roman inhumation and a cremation deposit accompanied by a flagon
- Monks Farm, Kelvedon, Essex – assessment report on a single urned cremation deposit dated to the Roman period. Sheep and bird bones commingled with the human bone
- Twigworth, Gloucestershire – assessment report on four Mid-Late Iron Age and Iron Age- Early Roman inhumations
- M1dway Junction 16, Harpole – full analysis report on four Mid-Late Roman inhumations and a cremation deposit
- Becks Lane, Hertfordshire – analysis report on two probable Bronze Age cremation burials enclosed by a barrow ditch
- Bishop's Stortford North, Hertfordshire – assessment report on a single inhumation, probably Late Iron Age-Early Roman
- Horstead, Norfolk – full analysis report on seven deposits of cremated bone from a Middle Bronze Age cremation cemetery
- Farndish Road, Irchester, North Northamptonshire – assessment report on five inhumations, including a crouched burial dated to the Anglo-Saxon period
- Irthlingborough Community Project, Northamptonshire – full analysis report on disarticulated human bones (undated)
- Cranford Business Park, Kettering, Northamptonshire – Assessment report on seven unurned and one urned Early Bronze Age cremations, and one Roman infant inhumation
- Hanwood Park, Kettering, Northamptonshire – Assessment report on three Bronze Age cremation deposits (one urned)
- Armstrong Road, Littlemore, Oxford – full analysis report on a single, Middle Iron Age inhumation
- Dunmore Road, Abingdon, Oxfordshire – full analysis report on one inhumation and three disarticulated bone deposits (all Middle Iron Age), and unurned cremation deposits from two pits (both probably Late Bronze Age)
- The Mitre Inn, Turl Street Oxford – full analysis report on a medieval neonate skeleton
- Graven Hill, Bicester – full analysis report on five disarticulated bone contexts (Iron Age-Roman) and a medieval preterm infant. One of the disarticulated bone contexts, from a Middle Iron Age waterhole, included a fragmented skull with anthropogenic modification in the form of deliberate polishing
- Eynsham Polar Technology – full analysis report on a Middle Neolithic, adult skeleton, possibly female
- Lower Brook Street, Ipswich, Suffolk – Assessment report on disarticulated bones disturbed from a Late Saxon or medieval cemetery

Visit the OA Library at: https://library.thehumanjourney.net/
This site is used to disseminate material, including grey literature client reports and supporting archives, produced by Oxford Archaeology.

Teaching/outreach/research projects etc.
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 programmes.

Outreach
Multiple outreach events carried out for the Trinity Burial Ground, Hull project including two public webinars and an open day in Hull town centre for the Festival of Archaeology

Research
Collaborative project with the University of Western Australia on stature data collected during the analysis of 250 Australian and British soldiers, excavated from mass graves in Fromelles, Northern France, by OA in 2009. The results will be used to inform the development of methods for identifying WWI casualties.

Media
BBC Look North and *Digging for Britain* – both featuring Trinity Burial Ground, Hull.

Sedgeford Historical and Archaeological Research Project (SHARP)
Sophie Beckett

The familiar sound of archaeological trowels could be heard again this summer, as the Sedgeford Historical and Archaeological Research Project (SHARP) recommenced its excavation activity in July and August. Dr Eleanor Blakelock led a four-week excavation season focussed on Sedgeford's Early Medieval malting complex. During the season SHARP hosted a visit from West Norfolk's Mayor and film crews. You can watch SHARP's appearance on Digging For Britain (Series 9, Episode 1) via catch up (https://www.bbc.co.uk/iplayer/episodes/b014hl0d/digging-for-britain). Presenters try out a previously unknown Early Medieval ale recipe, discovered by Hannah Caroe during her PhD research at Sedgeford (www.arch.ox.ac.uk/people/hannah-caroe).
This year, SHARP carried out work to further develop on-site facilities, with a move of the SHARP archive and post-excavation workspace from 'the Old Village Hall' to Boneyard Field. Excavations (Trench 26) also took place ahead of the installation of a new septic system and this revealed a natural gully and potential boundary for the Early Medieval cemetery on Boneyard Field. The fill of the water course contained archaeological evidence to indicate its use as a component of the nearby malting complex.
A grant awarded by the National Lottery Heritage Fund enabled the opening of SHARP's Digital Trenches. A bespoke virtual learning environment provided a mechanism for those not able to participate in person this year, keep up to date with events on-site. SHARP has plans to further develop its Digital Trenches in 2022 with the launch of online short courses and the recruitment of a Digital Trench Supervisor for the 2022 summer excavation season (see SHARP's blog for further details once they become available: www.sharp.org.uk/blog). The majority of SHARP's Digital Trenches content is free to access for registered users (www.sharp.org.uk/digitaltrenches).
In 2021, SHARP was awarded access to the National X-ray Computed Tomography (NXCT) facilities at the Universities of Manchester and Warwick for the CT scanning of three Roman period vessels that were discovered at Sedgeford in 2019. This high-resolution scanning was possible thanks to free at the point of access funding for academic and not-for-profit organisations, funded by EPSRC (https://nxct.ac.uk). The vessels are currently undergoing micro-excavation so keep an eye out for publication of the findings.
SHARP ran its Basic Excavation and Recording Techniques (BERT) short courses during the summer season. Following the successful running of an off-site course in 2019, SHARP delivered a human osteology short course and follow-on recording sessions for volunteers at the Folk of Gloucester in August (https://thefolkofgloucester.co.uk). The course and recording sessions were free to attend as part of the National Lottery Heritage Fund project '*Volunteering with a Disarticulated Community: Towards Re-association of Anglo-Saxon Bones'*. Also, the postponed collaboration with Gloucestershire Archaeology (www.glosarch.org.uk), funded

through Gloucester County Council's *Growing our Communities* grant, commenced in Autumn 2021. Dr Sophie Beckett delivered free osteo-archaeology training for volunteers based in Gloucestershire, to record some of the disarticulated human remains from Sedgeford. In 2022, SHARP will run two off-site short courses in human osteology at the Folk of Gloucester venue (in June and October). This will enable the SHARP Human Remains Team to focus on post-excavation recording and analysis whilst onsite at Sedgeford during the summer season. Volunteers will be able to work with the human remains team to further record and investigate potential relationships between excavated articulated burials and disarticulated bone from Sedgeford's Early Medieval cemetery. For booking enquiries, contact Brian Fraser (bookings@sharp.org.uk). See also (https://www.sharp.org.uk/courses) for more information about SHARP courses and volunteering and excavation opportunities.

Work continues on a grant awarded by the National Archives Collaborate and Innovate programme Archives Testbed Fund. This is enabling SHARP to investigate whether photographs of excavations that are donated by volunteers and visitors to help overcome post-excavation challenges. SHARP is currently running two questionnaires, that you might be able to help with. The first is for current and past SHARP volunteers to register their interest in donating their photographs. The second is perhaps more for the wider BABAO membership and is a survey that reviews current practice for donated photograph collections (including but not limited to those of human remains). There is a SHARP blog post which provides further information (www.sharp.org.uk/single-post/sharp-needs-your-help-warning-this-post-contains-images-of-human-remains). The two questionnaires can also be accessed directly using the following links. Please do forward the links on to anyone you think may be interested in participating.

Register of Interest: https://docs.google.com/forms/d/e/1FAIpQLSepp2vrUpkjdZrqgpkK-qdu0nIyBaOh13oqm0NwHgafDtyTJQ/viewform

Review of Current Practice for Donated Photograph Collections: https://docs.google.com/forms/d/e/1FAIpQLScmWa8tinkUruvZVF-oPaypAJPwAva86YGgh0iei0o1FBPEUQ/viewform

Collaboration with the Max Planck Institute for Evolutionary Anthropology has resulted in some exciting aDNA discoveries about the Early Medieval population of Sedgeford. The research has identified one individual as having suffered from the hepatitis B virus. A SHARP blog post explains more (www.sharp.org.uk/single-post/sharp-contributes-to-study-of-ancient-hepatitis). Details of the wider study can be found in the journal paper *Ten millennia of Hepatitis B virus evolution*, published in Science (https://doi.org/10.1126/science.abi5658). Further publications, revealing more aDNA findings are in preparation and when published, will be announced through the SHARP blog and the Human Remains Team are due to give a lecture on 12th July 2022 as part of SHARP's public lecture series.

In 2022, the Human Remains Team hope to continue to develop research partnerships and is awaiting the outcome of several research funding bids. Human Remains Team Supervisor Ray Baldry has been invited to present at the Norfolk and Norwich Archaeological Society conference 'Community Archaeology' on 9th April 2022 at the Thomas Paine Centre, University of East Anglia (www.nnas.info/activities).

Congratulations to Human Remains Team Supervisors; Lucy Koster on commencing her PhD studies at the University of Aberdeen on the project *Investigating migration, kinship and mobility in prehistoric Scotland using ancient DNA and stable isotopes* and, Dr Katie Mckinnon who has begun an MD at the University of Edinburgh on the impact of socioeconomic status on neurodevelopment in babies born prematurely.

Keep up to date with SHARP news by following the SHARP blog (https://www.sharp.org.uk/blog).

SHARP Human Remains team contacts: Lorraine Horsley (lorriehorsley@hotmail.com) and Dr Sophie Beckett (drsophiebeckett@gmail.com).

York Osteoarchaeology

Anwen Caffell, Malin Holst, Katie Keefe, Paola Ponce, Benn Penny-Mason, Elina Petersone-Gordina, Leslie Quade & Jordi Ruiz Ventura

Reports on small assemblages are not listed. We are writing up large skeletal populations from the Lincoln Bypass and Waterside, Leicester.

Allan Archaeology, Land of Hadham Road, Bishop Stortford, Hertfordshire, BPM
Twelve early Roman cremated bone assemblages included eleven adults (18+ years) and a neonate. On average, the cremated bone assemblages contained approximately 15% of the amount of bone expected from an adult cremation. The bone was very well burnt, indicative of the cremation process generally being proficiently completed. However, the presence of a small quantity of grey and brown fragments of bone in some deposits means that there may have been insufficiencies in burning duration, temperature, or pyre construction during the cremation process.

Network Archaeology, Cammeringham, West Lindsey, Lincolnshire, KK
Fourteen skeletons and ten cremation burials dating to the 5th to 6th century were analysed. The cemetery was organised with mixed rite burial clusters. Most inhumations contained grave goods, with knives and beads being common. The cremation burials were interred in urns and contained grave goods. Only one of the assemblages was thoroughly burnt. The inhumations consisted of thirteen adults (five males, five females, three unsexed) and one perinate. Both sexes were shorter than average for the period. *Cribra orbitalia* and DEH were common and more prevalent in females. An old middle adult male suffered trauma to the elbow and a crush fracture in their spine. The dental health was moderate, with considerable periodontal disease and dental calculus.

Salford Archaeology, WarringtonYouth Zone, Warrington, Cheshire, MH
Three isolated skeletons were analysed; two dated to the Civil War and one to the High Medieval period. The latter was a young middle adult male with Schmorl's nodes and transitional vertebrae. The Civil War skeletons were a mature adult female and a young adult male, who were buried together. The male had congenital anomalies, while the female had degenerative joint changes in her spine and a cranial osteoma. She also had poor dental health, with widespread dental calculus, ante-mortem tooth loss and periodontitis. She had sustained five peri-mortem blade injuries to her head, four of which affected the posterior and left side of her skull and were superficial, while the fifth targeted the left side of her frontal and zygomatic bone and was likely fatal.

University of Leicester Archaeological Services, Burnmill Road, Market Harborough, Leicestershire, MH
Nine Roman and one earlier skeleton were interred in various positions in ditches/simple graves, and included seven adults (five males, one female, one of undetermined sex), two juveniles and a perinate. Childhood stress affected the juveniles. Trauma was common, including myositis ossificans traumatica in two ankles, a forearm and a hand, as well as a first metacarpal, rib, clavicle and clay shovelers fracture. Periosteal reactions affected the lower limbs of three skeletons. Degenerative joint changes affected the spines and hips, and two males had osteoarthritis in the hips.

WYAS Archaeological Services, Cobblers Lane, Pontefract, West Yorkshire, LQ
Thirty-two skeletons dating to the Roman period, mostly the mid to late second century AD were excavated from a Romano-British settlement site. Most burials were extended supine and orientated with the head to the north and feet to the south. A small number of grave goods were recovered, consisting mainly of iron objects, nails and animal bone. There were 22 adults (eleven males, nine females, one indeterminate, one unsexed), one adolescent, two older juveniles, four younger juveniles, one infant, one neonate and one foetus. The males consisted predominately of mature adults, while the females were mostly young

and young middle adults. Both sexes were slightly smaller than average for the period. Many of the adults experienced childhood stress, with c*ribra orbitalia* seen in almost half of the adult population, but DEH prevalence was lower than the Roman norm. Trauma was mostly related to accidents; however, some may have been the result of interpersonal violence. One individual had well-healed fractures on at least four right ribs, and some ribs had been fractured in several places. Another individual displayed a well-healed fracture on the left scapula and two individuals had possible fractures in manual phalanges. Endocranial periosteal reactions affected the crania of three individuals. Degenerative joint changes mostly affected the shoulders and hips, while osteoarthritis predominated in the wrist and hands. Degenerative joint changes in the spine were prevalent, with males much more likely to be affected than females. Dental health was relatively poor, with higher-than-average levels of calculus and periodontal disease. Three individuals exhibited unusual wear patterns on the lingual surfaces of the maxillary incisors and canines, which may benefit from further research.

DEPARTMENTAL REPORTS

Department of Archaeology and Conservation
Cardiff University

Katie Faillace

Shwmae from Cardiff! Among the pandemic uncertainties and continuously updated risk assessments, the Cardiff University BioArchaeology lab had an active and productive 2021.

Ongoing Projects:

This year, we welcomed four new post-doctoral researchers. Dr Carmen Esposito joins the department on the AHRC-funded project FEASTNET: Feasting Networks and Resilience at the end of the British Bronze Age (https://feastnet.co.uk/). This project, led by Dr Richard Madgwick, explores responses to a deteriorating climate and trade collapse at the end of the Bronze Age in Britain. Using multi-isotope analysis of remains recovered from middens, the project will investigate husbandry practices and landscape use, with an aim of reconstructing the inter-community networks and the organisation of the economy and agricultural production. Current MSc students Hugh Ninias and Nathaniel Harrop-Pender are also contributing to the project.

Dr Katie McCullough French has joined us a Marie Skłodowska-Curie post-doctoral fellow, for her project entitled BONEZ: Baltic Paganism, Osteology, and New Examinations of Zooarchaeological Evidence. Her project focuses on isotope and histological analysis of human and faunal cremations in the medieval Baltic. Dr Flint Dibble has also joined us as a Marie Skłodowska-Curie post-doctoral fellow with his project ZOOCRETE: The ZOOarchaeology of Historical CRETE: A Multiscalar Approach to Animals in Ancient Greece. In January, we are looking forward to welcoming Dr Roger Alcàntara as a Margarita Salas post-doctoral fellow working on combining biomechanics and isotopes to explore faunal mobility.

Two more post-doctoral researchers focusing on isotope analysis will be recruited in 2022 to work on the Leverhulme-funded 'Feeding the Roman Army in Britain' project, led by Dr Richard Madgwick – keep an eye out for adverts.

PhD student Katie Faillace, MSc student Charlotte Clark, and Dr Richard Madgwick have continued their work with the Passage Tomb People project, with PI Dr Jessica Smyth at University College Dublin. They are contributing multi-isotope analysis of Neolithic human and faunal remains from passage tombs in Scotland and Ireland to understand the character of these communities.

We have continued to expand our collaborations with commercial archaeology and heritage colleagues in the UK and across Europe, contributing multi-isotope, histotaphonomy, and osteological analyses to numerous projects. This year, we worked with AC Archaeology, Black Mountain

Archaeology, Red River Archaeology, Archaeoleg Brython Archaeology, National Museum Wales Amgueddfa Cymru, Eotvos Lorand University, Wessex Archaeology, CAU Kiel, University of the Algarve, and University of Padua on sites ranging from Bronze Age barrows to early medieval cemeteries. We are grateful for the opportunities to work in partnership with our commercial and heritage colleagues and we'd be delighted to collaborate with more in future.

News & People:
Congratulations to PhD student Eirini Konstantinidi, who was awarded a grant from the Prehistoric Society for radiocarbon dating of presumed Neolithic remains from cave sites in Wales. Her research will help illuminate our understanding of prehistoric cave usage and taphonomy.

The Department of Archaeology and Conservation has appointed several new staff members: Dr David Roberts has joined the staff as a Lecturer in Ancient History and Archaeology, Dr Andy Seaman as a Lecturer in Medieval Archaeology, Dr Eric Nordgren as Lecturer in Conservation, and Katie Faillace as Teacher in Human Osteoarchaeology and Biomolecular Archaeology. In addition, two temporary lecturers have been given permanent contracts – Dr Oliver Davis (Later Prehistoric Archaeology) and Dr Julia Best (Zooarchaeology). Dr Best has recently been covering for Professor Jacqui Mulville who has been working on the REF Assessment Archaeology Sub-Panel.

Members of the lab also chaired a session at this year's TAG 2021 conference. Their session, 'Lost Souls: Breathing Life into the Fragmented Dead', focused on approaches to disarticulated remains. The well-attended session demonstrated a desire among the discipline for greater guidance and methodologies for dealing with disarticulated and poorly preserved remains, which the group intends to develop further with a working group and conference in collaboration with Dr Linda Fibiger at the University of Edinburgh in 2022.

Completed PhD Projects and Abstracts:
An enthusiastic congratulations is extended to Dr Michael Legge who successfully defended his thesis, Death in the East: The Treatment of the Dead in the Iron Age of Eastern Britain.

This thesis presents a holistic examination of post-mortem processes in the Iron Age of eastern Britain, an area encompassing eight modern-day counties. The primary aims are to identify regional traditions, develop key debates on the treatment of the dead, and create a comprehensive data resource for future research.

The project involved a combination of primary osteological analysis, macroscopic taphonomy, and contextual archaeological data, gathered through extensive research into the published and grey literature. In all, over 1,000 deposits were recorded for analysis, the largest sample population from the region to date.

The results of this analysis add weight to arguments that excarnation in the Iron Age was frequently not conducted through subaerial exposure, but instead through complex post-mortem processes likely involving primary decay in covered and protected environments. The selection, curation, and manipulation of key skeletal elements (particularly skulls) is highlighted, consistent with wider traditions in Iron Age Europe. Inhumation practices are widespread temporally and geographically, though the Late Iron Age material dominates, with clear shifts in practice here. Cemetery inhumation emerges in the Middle Iron Age, but settlement burials occur throughout the period, more consistent in context, position and alignment than previously thought. Regionality can be evidenced though large numbers of individuals in Cambridgeshire and Kent, though geology and excavation histories are clearly also a factor. Smaller traditions occur across the region, with connections further north and across the Channel. There are novel findings within this research, but primarily it serves as significant, regionally specific support for certain existing assumptions, backing up theories with

quantitative data and shining a light on an under-researched region.

MSc Projects (Completed 2021): We are especially proud of our MSc Archaeological Science students for rising to the challenges of an unusual (few) year(s). Graduating with osteology dissertations this year, we had:
Hannah Brooks: The reliability of sex estimation methods in archaeology, and how it has marginalised intersex individuals
Liz Davies: The commingled remains from St Matthew's Church, High Street, Swansea
Yasmine De Gruchy: Bone of contention: a segmental investigation of cortical bone remodelling in the human femoral midshaft using histomorphometry and isotope analysis.
Bethan Healy: Lessons from Cwm Nash: an exploration into the treatment and bioarchaeological potential of coastally eroded human remains.
Daniel Morgan: An isotopic investigation into the diet and subsistence of early medieval Five Mile Lane in south Wales
Chloe Peterson: The variability of oxygen isotope sampling methods: investigating mobility patterns during the early medieval period in Wales
Bethan Price: Molar Opposites: sexual dimorphism in modern human permanent teeth
Tareq Rajab: A bioarchaeological analysis of the prevalence of rhinosinusitis across Romano-British and Early Medieval populations
Faye Shearman: The concept of partibility: patterns of fragmentation in Iron Age Wessex. An investigation into the conscious dismantling of humans and animals.
Ceri Stanford: A systematic literature review: the use of osteometric methods in the estimation of biological sex from long bones and their relevance in forensic anthropology and osteoarchaeology
Adam Talbot: Culver Hole Cave: An osteological evaluation of a Bronze Age assemblage, in context with contemporary European cave sites
Leah Williams: The value of histology as a taphonomic proxy for ancient remains

Ongoing PhD Projects:

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
Poppy Hodkinson: Archaeology and STEM in Primary School Education: Integration and Development
Eirini Konstantinidi: Neolithic cave burials in Wales and southwest England
Iulia Rusu: The Christianisation of Magyar: an osteological study

Cranfield Forensic Institute
Cranfield University
Sophie Beckett

Department Reports:
Cranfield Forensic Institute (CFI) is now settled into new teaching and research facilities at Cranfield Campus, which were officially opened in June 2021 by Metropolitan Police Commissioner, Dame Cressida Dick (www.cranfield.ac.uk/press/news-2021/game-changing-uk-forensic-science-centre-of-excellence-officially-opened).
At the VIP opening events, stakeholders, customers, police forces, forensic scientists, museums, as well as academics were able to explore the potential of CFI's new facilities for research and casework.

CFI warmly welcomes Dr Nivien Speith as Lecturer in Osteoarchaeology and Forensic Anthropology who joined us in September 2021. Her research and teaching expertise in Palaeopathology and Bioarchaeology complement the CFI activities in Biomechanics, Archaeology and Anthropology (www.cranfield.ac.uk/people/dr-nivien-speith-32408409).
Dr Richard Lloyd, Manager of the Human Anatomy Centre at the University of Cambridge has been appointed a Visiting Fellow of CFI

(www.lucy.cam.ac.uk/news/congratulations-dr-richard-lloyd-his-appointment-visiting-fellow-cranfield-forensic-institute).
Congratulations to Dr David Errickson on his promotion to Senior Lecturer in Forensic Archaeology and Anthropology and to Dr Nicholas Márquez-Grant on his appointment as Head of Research in Forensic Anthropology.

A new site location was explored for the MSc module Practical Archaeological Excavation (PAE) and led to the discovery of a high-status Roman villa. Coins, a brooch, painted plaster and a mosaic floor were found during a two-week-long excavation; the start of a long-term project for the PAE module.

Congratulations to MSc Forensic Investigation student Michelle Iisalo who was awarded the Pro-Vice Chancellor's Prize. This prize is award to a UK student who has made outstanding academic progress across all MSc courses in the School of Cranfield Defence and Security (CDS). Congratulations also to MSc Forensic Ballistics student Laura Riek who has been awarded the Chartered Society of Forensic Sciences Prize for the top student on the MSc Forensic Programme. Well done to MSc Forensic Archaeology and Anthropology student Rosie Crawford who was runner up for 'Masters Student of the Year' in the Postgrad Awards 2021 run by FindAMasters.com and FindAPhD.com. Rosie's MSc thesis has also been nominated for the Royal Anthropological Institute's 2021 dissertation award.

Cranfield Forensic Institute is excited to announce the launch of a further two new MSc courses; MSc in Archaeomaterials and MSc in Forensic Investigative Sciences (www.cranfield.ac.uk/centres/cranfield-forensic-institute/postgraduate-courses).

CFI staff continue to work on forensic archaeology and forensic anthropology casework, both in the UK and internationally, including Police Domestic cases and Human Rights investigations. Dr Nicholas Márquez-Grant, with assistance from a number of MSc students, successfully led the recovery of 26 individuals who had been executed by the Francoist Regime in 1939-1940 and buried in a region of Central Spain (https://edition.cnn.com/2021/05/25/europe/spain-almagro-cemetery-exhumation-scli-intl-scn/index.html).
Nick continues to undertake UK forensic casework and international humanitarian work for a number of organisations.

Dr David Errickson led return excavations at Rat Island (Burrow Island, Gosport, UK) with Richard Osgood from the Ministry of Defence, the Royal Military Police, and Operation Nightingale. Human remains of 12 individuals were recovered and post-excavation work is in progress. The report is currently being written up, so keep your eyes peeled!

In 2021, operations of Cranfield's Recovery of Conflict Casualties (CRICC) team continued, working with the Defense Prisoner of War/Accounting Agency (DPAA) in particular, to recover US personnel who died in Europe during WWII. Dr David Errickson led a team on a deployment to Germany for five weeks for the recovery of a B17 bomber, with an aim to find the missing airmen. In partnership with Dr Penny Minturn, David also led a 45-day deployment to Sicily for a similar project. Three projects are scheduled for 2022 and as ever, those who are interested in being considered as a member of the CRICC team, please do get in touch (www.cranfield.ac.uk/centres/cranfield-forensic-institute/cricc).

In June, Roland Wessling was interviewed about the final dismissal of General Mladic's appeal against his genocide conviction. This was part of a series of follow-up interviews regarding Roland's work in Bosnia with the ICTY in 2000.

Dr Nicholas Márquez-Grant was delighted to be an invited speaker at the 2021 TEDx event in Prague. A video of his talk will shortly be available on the TEDx Youtube Channel (www.youtube.com/channel/UCsT0YIqwnpJCM-mx7-gSA4Q).
Nick was also invited as a keynote speaker for several conferences in Latin America. Roland Wessling was an invited speaker at the 17th

Chico Forensic Conference, held virtually this year. Dr Fiona Brock presented at the 9th International Bone Diagenesis meeting which was held in September online and at University of Evora, Portugal:
Brock F, Loy C, Rogers K, Snow T, Greenwood C, Hiller Bardsley J *Investigating the diagenesis of archaeological bones from Etton Causewayed Enclosure and Star Carr, UK*.
Dr Nivien Speith presented at the virtual 90th Meeting of the American Association of Physical (now: Biological) Anthropologists: *A little more conversation, a little more action, please: The potential of bone-muscle cross-talk for mapping skeletal markers of neurodegenerative disorders,* and at the virtual 48th North American Meeting of the Paleopathology Association: *It's only rare if you don't care: Promising new comprehensive approaches to the palaeopathological identification of neurodegenerative disorders.*

CFI's current PhD students include:

Andrades, E. *3D CT Analysis of Frontal Sinus Variation and its Relationship to Forensic Identification*. Supervisors: Dr Nicholas Márquez-Grant and Dr Nivien Speith. Funding: Gibraltar Government

Cai, Y. *Development of Customised Novel Model for Surgical Planning in Adolescent Flatfoot Corrective Surgery,* Supervisors: Prof. Peter Zioupos, Dr David Errickson, Joint project with Aston University

Courts S. *The Archaeology of Hidden Identity: The Case of a Female Burial from Lowbury Hill,* Supervisors: Prof. Amy Smith (University of Reading), Dr Sophie Beckett and Angie Bolton (Oxfordshire Museums Service), Funding: AHRC SWW DTP Collaborative Doctoral Award

Davies, S. *High Resolution Mapping of Bone: The Pathogenesis of Osteoarthritis*
Supervisors: Dr Charlene Greenwood (Keele University), Prof. Keith Rogers, Prof. Peter Zioupos

Giles, S. *Estimation of the Post-mortem Interval in Forensic Anthropology,* Dr Nicholas Márquez Grant and Dr David Errickson

Harding, M-J. *Investigating Fatal Fires: Understanding heat alteration to the Human Body.* Supervisors: Dr Nicholas Márquez Grant and Dr Mike Williams

Longo, A. *Digital 3D shape-comparison analysis for automated assessment in Forensic Anthropology,* Supervisors: Dr Nicholas Márquez Grant and Dr David Errickson

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

Wessling, R. *Forensic Anthropology: Virtual Skeletal Analysis,* Supervisors: Dr Sophie Beckett, Prof. Andrew Shortland

Well done to CFI PhD students who gained their doctorates in 2021. We wish them all the best in the future.

Arnold, E. *Bone Disease, Integration of Nano and Macro Scale Studies*
Lloyd, R. *Forensic Toxicology in Embalmed Human Remains*

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).

Department of Archaeology
Durham University
Tina Jakob

We are delighted to welcome Dr Daniel Gaudio to Durham. Daniel is a forensic anthropologist and bioarchaeologist, with a breadth of research experience and interests as well as professional practice. Daniel will be leading our new MSc Forensic Archaeology and Anthropology degree, which is currently recruiting for a September 2022-2023 intake. The new MSc has a particular focus on international humanitarian forensic work and

we're excited to develop this existing strand of research further at Durham alongside our new students and staff. (https://www.durham.ac.uk/departments/academic/archaeology/postgraduate-study/taught-courses/msc-forensic-archaeology-and-anthropology/)

Becky Gowland continues to direct our MSc Human Bioarchaeology and Palaeopathology degree and is thrilled to have less disrupted face-to-face teaching this year. Many of our MSc students last year were able to do a range of practical dissertations despite the pandemic, ranging from the use of state-of-the-art DEXA scanners (usually used for athletes) to study osteoporosis, to peptide analysis for sex estimation, and incremental isotope analysis to examine weaning. Many of these projects are now being written up for publication.

Becky also continues her Faculty role as Deputy Executive Dean for People and Culture and she was pleased to be part of a successful Office for Students bid, led by Professor Jason Arday, to improve participation of BAME research postgraduate students across the five Universities in the Northeast.

Anwen continues to teach on the MSc Human Bioarchaeology and Palaeopathology programme, alongside completing commercial osteological analyses for Archaeological Services, Durham University and York Osteoarchaeology. Tina is supporting teaching and research in her new roles a Technician for Bioarchaeology and DNA.

The Research Project 'What´s in a house? Exploring the kinship structure of the first world´s houses' led by Dr Eva Fernandez-Dominguez received funding by the Leverhulme Trust (Project grants) in December 2019, but its start was delayed to May 2021 due to Covid-19. This project is developed in collaboration with Dr Jessica Pearson from the University of Liverpool and aims to decipher biological and social relationships in different burial settings of the first farming groups of the Northern and Southern Levant across the PPNA and PPNB (ca. 9000-7000 BCE) using ancient DNA and isotopes of mobility.

This project has employed two Post-Doctoral Research Assistants: Dr Kelly Blevins, PDRA in ancient human genomics at Durham University and Dr Hannah Plug, PDRA in Bioarchaeology at Liverpool University. Kelly completed the MSc in Palaeopathology course with us before moving to Arizona State University, where she obtained her PhD in 2021. It is a great pleasure to welcome Kelly back to the Department.

From August 2021 to February 2022 Dr Eva Fernandez-Dominguez has joined a group of other researchers in Oslo to work on the project '*Exploring the archaeological migration narrative: The introduction of farming and animal husbandry in southern Norway' funded* by the Centre of Advanced Studies from the Academy of Sciences in Oslo. The project aims to create an interdisciplinary dialogue to bring the dominant archaeological and archaeogenetic migration narrative up to date with the archaeological and anthropological discourse on human mobilities, identities and social change and to further explore its implications for our understanding of human movements in prehistory (https://cas.oslo.no/research-groups/exploring-the-archaeological-migration-narrative-the-introduction-of-farming-and-animal-husbandry-in-southern-norway-article4077-827.html).

Janet Montgomery is working on the ERC-funded Foodcult Project (PI Dr Susan Flavin) https://foodcult.eu/ and we appointed Dr Alice Rose, an MSc Palaeopathology graduate from our Department who has worked for Oxford Archaeology and did her PhD at Cambridge on the Wellcome Trust project 'After the Plague; Health and History in medieval Cambridge' as a PDRA. Alice will undertake the isotope analysis of humans from various 16/17th century sites in Ireland. Welcome back Alice! We carried out an historical brewing reconstruction of beer from Dublin Castle https://foodcult.eu/category/news/ at the Weald and Downland Museum in September – the link takes you to a Virtual Exhibition of the process. The beer is being analysed for nutritional and alcoholic content and a range of trace elements and isotopes.

Many congratulations to Kori Filipek and Sarah Morrison for successfully defending their PhD theses this year! Congratulations also to Dr Kori Filipek for her new job as

Lecturer in Forensic Anthropology at the University of Derby.
Another recent return to the Department is Brett Ostrum who completed the MSc Bioarchaeology in 2019 and is now working on her funded PhD project 'Dietary diversity in early Neolithic Britain: Determining Regional Variation through Stable Isotope Analysis'. Sarah Seeley (Investigating Neanderthal and early AMH mortuary behaviour through osteophagous insect traces) is also a new PhD student with full funding.

MSc Bioarchaeology dissertation projects 2020-2021

Bowers, A.: Vitamin D deficiency in childhood and osteoporosis in adulthood: is there a link?
Bruaux, M.: Pollution, not just a modern problem: the osteobiography of 3 individuals from Coach Lane, North Shields, UK.
Foster, E.: Commingling and rearticulation using pXRF in collaboration with Teesside / Tim Thompson.
Gilmer, S.: Pathology and trauma in a population from Hollow Banks Quarry.
Gorringe, G.: Irish immigrants to Montreal: isotopic analysis.
Hoare, C.: Archaeobotanical quantitative and stable isotope project from Dutton Farm Neolithic site in Scotland.
Hochgraf-Cameron, I.: Nature of population trends in sexual dimorphism in England: a study of the alignment of dimorphic traits in known-sex individuals.
Idigoras, N.: The effects of Spanish colonisation in the Americas on the female body.
Li, Y.: Fishergate House: re-evaluating and re-examining the evidence for scurvy and rickets in non-adults in late medieval York.
Liscakova, K.: Tracing origins and migration of Late Iron Age and Roman-British individuals from Yorkshire.
Michelli, M.: Bone mineral density and physiological stress during the medieval and post-medieval period: the DXR project
Moise, E.: A mitochondrial DNA analysis of Austrian and Belgian Roman Era Skeletal remains.
Ravel, K.: Using stable isotopes and a Bayesian model to analyse changes in diet throughout British pre-history.
Remsey, T.: Expanding analysis on breastfeeding and weaning practices at Fishergate House, York: incremental analysis and peptide analyses.
Robert, P.: Health and diet: stable isotope life histories in Yorkshire from the Iron age to the Roman period in a rural settlement.
Sharpe, G.: Home is where the hearth is…or not? An experimental study of the application of magnetic susceptibility signatures for detecting temporary hearth use during the Mesolithic period.
Sparrow, C.: Fictive narratives as a means of increasing awareness of life in the Industrial revolution.
Walker-Friedrichs, F.: An experimental archaeobotany project with stable isotopes.
Wilkin, A.: Children of Hull: a stable isotope investigation of infant weaning practices in 18th-19th century Hull.

Teeside University

Gillian Taylor

News

2021 may have been a challenging year from a global pandemic perspective, with external activities limited due to covid-19 restrictions.

We led another successful year of "Pint of Science" for Middlesbrough, hosted online for 2021. Thanks to the excellent research presence in the School of Health and Life Sciences, speakers from Teesside University achieved some of the highest view counts across the festival! We are looking forward to returning to an in-person event for 2022, with talks covering dark tourism, environmental sustainability and medical innovations.

Our working relationships with local archaeological societies continued with contributions toward the engaging evening lecture series hosted by The Architectural and Archaeological Society of Durham and Northumberland, and at the annual Roman Finds Group conference.

Finally, our expertise with 3D imaging technologies and public engagement has led toward significant inputs in the *Digging up memories* exhibit hosted by the Vindolanda Trust (https://www.vindolanda.com/listing/category/digging-up-memories). This online exhibit features a wide selection of precious wooden artefacts with audio and video interviews, information, 3D digital models to view at home and 3D printed models to handle in the museum.

BARC, School of Archaeological and Forensic Sciences
University of Bradford
Jo Buckberry

As many BABAO members know I've had a long period of ill health, and I've realised I've not written anything for the BABAO Annual Review since 2018 (for 2017), so please permit me to talk more broadly about what we have been up to since then! Dr Julia Beaumont retired from her lectureship but is continuing her research as the Bradford tooth fairy. She was replaced by Dr Shirley Curtis-Summers, who initially joined us to cover Dr Hannah Koon's maternity leave. Hannah is now sole head of the Light Stable Isotope Laboratory Facility, do contact her if you wish to have samples analysed. Prof Keith Manchester is still working with us in the BARC and recording a series of anatomical specimens help by the Faculty-wide Anatomy and Pathology Resource Centre.

We completed "Putting Flesh on the Bones: cataloguing and digitising the Calvin Wells Archive" early in 2018, and the archive can now be searched via the archives hub: https://archiveshub.jisc.ac.uk/search/archives/fcf35370-d725-334d-a617-0a9db721d7eb. Most of the material is now help by the University of Bradford Special Collections, in the JB Priestly library. The film radiographs remain in the BARC. Keith has generously donated his personal archive to the library, starting our Palaeopathology Collection. The two collections combined contain a formidable collection of early and rare books and papers on palaeopathology.

Hannah has been using stable isotopes to track migrating populations and in that vein continues to work on developing microsampling approaches for teeth and bone to increase the temporary resolution of dietary isotope analyses. Shirley has been collaborating with The Whithorn Trust and Dr Adrian Maldonado (National Museums Scotland) on the *Cold Case Whithorn* project. The results of the most recent isotope analysis can be found here: https://www.facebook.com/watch/?v=316084686344180.

She is also working with FAS Heritage (York) on several projects, including skeletal remains from Lincoln Castle and from Ripon Cathedral Priory, the latter was analysed by Georgia Holmes under her supervision. Shirley is continuing her research on the Pictish and medieval skeletal assemblage at Portmahomack (see recent members publications). She is developing further research exploring child-maternal diet and health in late medieval Scotland using incremental tooth dentine collagen isotope analysis. Jo is working with Dr Gillian Crane-Kramer from SUNY Plattsburg on a Royal Society funded project to investigate health during the Industrial Revolution. The travel part of this project has been severely impacted by covid, but we are currently completing editing a virtual special issue for the International Journal of Palaeopathology. Dr Laura Castells completed her PhD "DISH Everywhere: Study of the Pathogenesis of Diffuse Idiopathic Skeletal Hyperostosis and of its Prevalence in England and Catalonia from the Roman to the Post-Medieval Time Period" in 2018. She was then employed to cover my teaching during my sick leave and is currently teaching at the University of Exeter.

Finally, we congratulate Keith Manchester for his 2020 PPA Global Mentorship Award.

Completed PhD Theses:
Solange Bohling: Death, disability, and diversity: An investigation of physical

impairment and differential mortuary treatment in Anglo-Saxon England.

Alex Fitzpatrick: Ritual and Funerary Rites in Later Prehistoric Scotland: An Analysis of Faunal Assemblages from the Covesea Caves.
Branka Franicevic: The Significance of the Depositional Microenvironment in the Decomposition of Dismembered Body Parts (part-funded, University of Bradford).

Ongoing PhD Research:
Rebecca Cadbury Simmons: The Less Dead: Assessing the Importance of Disarticulated Human Remains' (NECAH).
Mandi Curtis (submitted): Microscopic sampling of dentine and bone collagen: Development of sampling methods for carbon and nitrogen analysis.
Georgia Holmes: The Northern Powerhouse. A Multidisciplinary Study of Disease in Northern English Towns in the Nineteenth Century.
Chelsea Landon: The Role of Consanguineous Marriage on Vertebral Congenital Conditions in English Archaeological Populations c. 7th-19th Century (AHRC Heritage Consortium).
Dulcie Newbury: Beyond the Binary: Funerary archaeology, gendered identity, and its impact on contemporary society (Faculty of Life Sciences).
Ruth O'Donoghue: Seen but not heard: Reconstructing the early life history of the Industrial child through carbon and nitrogen stable isotope analysis of dentine collagen (AHRC Heritage Consortium).
Aoife Sutton: Pathological bodies: specimen preservation, death and display in Britain, 18-19th centuries (NECAH)
Marie Weale: The life course of vitamin D: the risk of deficiency is antiquity (Isle of Man Government).

Dissertations Submitted for the MSc Human Osteology and Palaeopathology:
Alycia Alves: The idiopathic nature of periosteal reactions: investigating the pathogenesis behind periosteal reactions in past populations.
Alex Belanger: Looking at violence: Assessing the ability of imaging technology to interpret violence from trauma caused by projectile points along skeletal remains
Rebecca Booth: Bog bodies and their cultural context: a review of current literature and theories.
Amanda Sara Bowles: Investigating evidence of differential burials and infectious disease in post-medieval Britain.
Ben Brace: Pict apart: stable isotope analysis of incremental dentine on two monks from Portmahomack, Scotland.
Saskia Edwards: Using macroscopic and radiographic bio-archaeological data to elucidate patterns of Vitamin D deficiency in British antiquity
Sara Fabijanić: Investigating the applicability and variation of morphoscopic traits used for ancestry assessment within British archaeological populations.
Alena Filer: Entheseal Changes: Research into Physical Activity of a Medieval Battlefield Population.
Katherine Foxton: Isotopic investigation of the evidence of the famine relief diet in a rural population during the Great Irish Famine.
Joyce Heberden: "An exceptional commemoration": Revisiting an unusual medieval burial at Portmahomack, Scotland.
Georgia Heppell: Transition Analysis: A validation and comparative study on Transition Analysis and Traditional Methods on St James' Garden, Euston.
Georgia Holmes: Social anxiety and burial: a study of syphilis, social deviance and burial practices in 19th century Britain.
Meg Howe: Through a child's eye: effects of age on the manifestation of cribra orbitalia lesions
Josh Hutting: Can multiple individuals with different degrees of kyphosis caused by spinal tuberculosis be compared when applying the bioarchaeology of care?
Richard I'Anson: Exploring Past Lifeways at Early Medieval Scotland: A Bioarchaeological Approach
Desiree Jaser: Investigating diets of 17th to 19th century inhabitants from St. Patrick's Church and Graveyard, Waterford, Ireland using carbon and nitrogen stable isotope analysis.

Elina Kaha: Facial reconstruction: Overview of facial reconstruction, methods and usage with initial study on how students from University of Bradford perceive facial reconstruction.
Laura Ann Krupke: A Rite of Passage in Early Anglo-Saxon England: An Investigation of Puberty and Social Identity.
Chiara Morgan Duggan: A bioarchaeological analysis of a nineteenth century child cadaver and its place in the history of dissection and anatomical education
Giulia Ragazzon: Hidden in bones: A diachronic study on spondyloarthritis and its prevalence in England
Nadia Rashid: At Face Value? – A multidisciplinary investigation into the treatment of facial disfigurement in medieval and early modern Britain.
Rebecca Jayne Seed: The burial of the battlefield dead in medieval Britain.
Sabrina Soria: The Impact of Industrialisation on Neoplastic Disease in Britain: a study of medieval and late post-medieval samples.
Jyoti M. Stuart: An Isotopic Investigation of Childhood to Adulthood Diets of Pictish Monks from Portmahomack, Scotland.
David Taylor: Animal health and welfare during the late Roman transition in the north of England: The Binchester slaughterhouse
Caitlin Renée Thurley: Computer Three-Dimensional Modelling Crania: an osteometric and geometric morphometric assessment.
Sophie Whyatt: Cooking high and low: A methodological review of thermal alteration to human bone.

Institute of Archaeology
University College London
Rebecca Watts

It is strange to be writing a review of a year that already seems so long ago, but at the same time feels like it hasn't ended. Postponements and restrictions on face-to-face teaching meant that our MSc classes for 2020-21 were stretched over three terms, and there was barely chance to draw breath before we welcomed another cohort of students to the Institute for the beginning of 2021-22. During this time no one has done more to keep the ship afloat than Carolyn and we hope that now 2022 is here she will finally be able to take her long-awaited sabbatical and enjoy sitting in a quiet room with some skeletons.

Research activities have been few and far between – the wonderful Dr Delphine Fremondeau has begun working on an isotope project with skeletal material from Rwanda, and thanks to the heroic efforts of PhD students Liz Church and Connor Welty, we (Liz) managed to make some 3D digital models from the Institute's palaeopathology collection – which will hopefully be available soon on an open access platform. Other than that the next few months will be spent taking a deep breath, putting the kettle on and keeping our fingers crossed!

Staff news:
We were sad to say goodbye to Dr Sarah Stark in August 2021. It is no exaggeration to say that last year's MSc programme would not have been able to run without her, and we wish her all the best in her new role as Human Skeletal Biologist with Historic England. From 2022, Dr Katie Hemer will be joining us as Lecturer in Bioarchaeology and Forensic Anthropology. We are very excited for all the expertise that she will bring to the Institute and are looking forward to introducing her to the cinnamon bun stand on the corner.

PhD completion:
Congratulations to Christopher Silvester, Rachel Carew and Aaron Gasparik who have all successfully defended their theses since last year's round up. Rachel is now a lecturer at Coventry University and Aaron will soon be taking up a post at The British Museum. Chris is taking some time out of academia and getting back to nature.

Current PhD students:
Karina Andersson: Machine Learning as a Method of Sex Estimation from Cranial CT Scans

Elizabeth Church: A Photogrammetric Approach to Forensic Sex Estimation

Marion Davidson: The Frequency, Accuracy, and Reliability of the Ancestry Estimation Methods in Bioarchaeology and Forensic Anthropology

Melissa Dobson: Intervertebral Disc Disease: Its Prevalence, Distribution and Relationship to Other Spinal Pathology in Two Human Skeletal Populations from Chichester, England.

Katrina Gafner: Understanding the Thermal Alteration of Cranial Blunt Force Trauma Fractures

Jisun Jang: Developing a Novel Age Estimation Method Utilizing the 3D Reconstructed Auricular Surface by Applying Dirichlet Normal Energy

Panos Kratimenos: Burial Position and Mortuary Practice as Indicators of Cultural and Political Change During the Maya Collapse

Martin Lo: New Approaches to Age Estimation Using the Pelvis in Modern British Populations

Lisa Monetti: Evidence of Changing Cremation Practices in Britain Through Analysis of Cremated Human Remains

Madeline Robles: The Utility of the Cranial Sinuses in the Estimation of Age, Sex and Ancestry

Connor Welty: Cranial Morphology and Development in Down Syndrome Using 3D Geometric Morphometrics.

School of History, Classics and Archaeology
University of Edinburgh
Linda Fibiger, Jonny Geber and Sophie Newman

While 2021 continued to bring new challenges alongside the pandemic, it also saw more opportunities to connect with friends and colleagues, whether online or in person. All lab-based teaching for the MSc Human Osteoarchaeology programme is now back in-person, but we are continuing to make the most of online capabilities for supporting guest lecturers and speakers remotely. The 'One Health Archaeology Research Group' (https://www.ed.ac.uk/history-classics-archaeology/research/research-groups/one-health-archaeology) and the Conflict Archaeology Research Group (https://www.ed.ac.uk/history-classics-archaeology/research/research-groups/conflict-archaeology) have also continued to be successful in their digital format.

After many years of contributing to the intensive teaching and research environment at the School of History, Classics and Archaeology, Kath McSweeney embarked on her much deserved retirement in June 2021. Kath's contribution to human osteoarchaeological teaching and research in Scotland has been significant. She initiated the MSc in Human Osteoarchaeology at the University of Edinburgh, which has grown from strength to strength. We wish her all the best for the future and a happy retirement, and look forward to continue working with her through collaborations in her continuing affiliation with Edinburgh as an honorary fellow.

Linda Fibiger continued 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). While Covid certainly disrupted the fieldwork and data collection aspect of the project, things have picked up and it is hoped that next year will see the publication of a number of key papers.

Jonny Geber has continued with ongoing collaborative research projects in Sweden ("Viking-period and early Christian burials at St Olofsholm, Gotland"; "The bioarchaeology of social marginalisation") and the United States ("Facing the Frontier in the American

'Wild West': Benton Hot Springs Cemetery Bioarchaeology Project"), which have all suffered progress delays due to Covid-related restrictions. He has been able to engage more fully with the Passage Tomb People project, directed by Dr Jessica Smyth at University College Dublin. The project involves the (re-)analysis of a number of Neolithic passage tombs assemblages, including Knockroe, Co. Kilkenny, which includes 240kgs(!!!) of highly fragmented cremated remains.

Sophie Newman joined the School of History, Classics and Archaeology as Teaching Fellow in Human Osteoarchaeology in September 2021.

Linda Fibiger, Xavier Rubio-Campillo and Manuel Fernandez-Gotz will be hosting the 11th Biennial 'Fields of Conflict Conference' in May 2022. It will be held online, with a wide range of conference themes, including the bioarchaeology of conflict. See the webpage for more information and to keep up to date with further updates - https://www.ed.ac.uk/history-classics-archaeology/news-events/events-archive/2020/11th-biennial-fields-of-conflict-conference-2020

Ongoing PhD research

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.

Coskun, G.: Facial Evaluation of a Contemporary Adult Greek Population Sample: Comparison of Two Methods

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.

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

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

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

Dissertations Submitted for MSc Human Osteoarchaeology programme 2020/21

Carter, B. (2021) *The impact of industrialization: An isotopic study of breastfeeding and weaning using incremental human dentine in a 19th century population*

Cox, E. (2021) *The pursuits of FRUITS: Diet reconstruction in Chalcolithic Çamlıbel Tarlası and the wider Anatolian region using Bayesian mixing models*

Banister, S. (2021) *Parasitism in prehistoric Northern England: A tool for interpreting human health*

Bottari, K. (2021) *Intraskeletal ratio analysis: A potential new method to evaluate post-mortem contribution to measured lead (Pb) values in human remains*

Dorsey, H. (2021) *Care and gender in medieval Scotland: Six case studies addressed through the Bioarchaeology of Care model*

Flanagan, M. (2021) *Application of the 'New Coimbra Method' of evaluating fibrocartilaginous entheseal change*

Jakubova, A. (2021) *Puberty in medieval Scotland: A critical evaluation of the Lewis and Shapland method*

Karbainova, P. (2021) *What the dead have to tell us: Applying archaeothanatology to the early medieval and Viking Age site of Golden Lane, Dublin*

Knitter, A. (2021) *Life and Limb: A Radiographic Analysis of Skeletons from the Irish Potato Famine Using the Bioarchaeology of Care Model*

Morong, S. (2021) *Intrinsic and extrinsic diagenetic factors determined by X-Ray fluorescence (XRF) analysis on a medieval, post-industrial 19th century, and modern skeletal populations*

McWilliams, C. (2021) *Sex differences in childhood stress from medieval Ballumbie, Scotland*

Reinhard, H. (2021) *An experimental investigation of cranial projectile trauma using replica Bronze Age weaponry*

Schaffer, T. (2021) *An osteometric study of the adult femur: The impact of residual rickets on femoral morphology*

Sulzinger, J. (2021) *Oh Nodes! Severity and Pain of Schmorl's Nodes in Medieval Scotland*

Woodman, J. (2021) *Reexamining violence in the British and Irish Neolithic using GIS*

School of Archaeology and Ancient History
University of Leicester
Sarah Inskip and Jo Appleby

2020/2021 has been an exciting year for the team at the School of Archaeology and Ancient History (SAAH). First we have finally welcomed our students back into the lab for face to face teaching, and have also hosted highly successful in person osteology teaching to our distance learning students. On top of this, we have had many new arrivals! After the first covid lockdown we were thrilled to welcome Dr Eric Guiry, whose work focuses on long-term environmental change and human-animal relationships. Eric's arrival has now opened up new isotope facilities within the School. At the end of 2020, Dr Sarah Inskip joined us from the University of Cambridge on receipt of her UKRI-FLF award. Over the next four years, she is heading up the interdisciplinary project 'Tobacco, Health, and History' project (THH). As part of this, two new 3 year post docs joined the school: Dr Anna Davies-Barrett, specialising in palaeopathology and respiratory disease, and Dr Diego Sanchez Badillo, an archaeochemist focusing on metabolomics. In April, we also welcomed Maria Serrano Ruber to the team, joining as the project lab technician. If that wasn't enough, we are delighted that Dr Marianne Hem-Eriksen has also joined the School and is Principal Investigator of the new ERC funded 'Body Politics' project, and we await the arrival of her new team members in the Spring. With the arrival of so many new staff members, we have instituted a new research group: 'Intersectional Bodies' and are hoping to organise a symposium in June: we'll send further details nearer the time.

As well as many new faces, the School was successful in its recent AHRC CapCo bid. This has provided the School with much needed new equipment including a SEM and EDX, Metallographic microscopes, MicroXRF, a 3D scanner, and a thin section scanner, all of which greatly increase the range of capabilities in house. We are already using the SEM to assess dental microwear patterns associated with pipe smoking. Eric Guiry was recently awarded a BA small grant 'Quantifying the

importance of coastal environments in colonial North America'. Dr Jo Appleby has continued her work on bioerosion and ageing, alongside leading isotopic work on Bronze Age remains from Cambridgeshire. Prof Richard Thomas, who has been promoted to Deputry Pro Vice Chancellor for Research and Enterprise, continues to work on animal palaeopathology and is wrapping up work on the Feedsax project. He is working with Sarah Inskip on a new project focusing on human-animal disease transmission in the past. Sarah has continued her work on the 'After the Plague' project and leprosy in collaboration with Dr Verena Schuenemann. She also continues to supervise Alette Blom on her PhD focusing on leprosy and the lifecourse, at the University of Cambridge.

We have three continuing PhD students; Vasiliki Louka working on 'The violent truth: A comparative, long-term study of collective violence from armed conflicts in Europe', Kristy Henson (Distance Learning): 'Biocultural effects on ancient vitamin D deficiency in the United States and their role in spinal pathology' and Dane Magoon (Distance Learning): 'Biocultural Adaptation at the Hatch Site during the Late Woodland Period'. Willem Baetsen joined us in October to start a PhD on 'The future up in smoke: The effects of tobacco use on population health in Europe in the 16th-19th centuries'.

In the Summer, Anna Davies Barrett hosted the highly successful 'Taking a Breath' symposium for the Bioarchaeology Respiratory Disease Network. This featured fascinating talks and welcomed Prof Mary Lewis, Prof Charlotte Roberts, and Prof Ana Luisa Santos and Dr Sarah Inskip as discussants. In December, we also hosted the first Tobacco Health and History symposium: 'Tobacco through time: Interdisciplinary Perspectives on the History and Legacy of the Use and Commodification of Tobacco'. This highly diverse meeting will now be written up into an edited volume and will feature work by historians, sociologists, archaeologists, and biomolecular scientists. We are also excited to be receiving the first skeletons from the ongoing ULAS excavations at Leicester Cathedral. These individuals will be assessed as part of the 'Tobacco, Health and History' project and will undergo biomolecular research to learn more about the city's population. It is envisioned that the work will form the basis of a public engagement project with SAAH, ULAS and the Cathedral.

School of Life and Health Science
University of Roehampton

Lia Betti

Last year we 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 for the last few years. The cemetery was in use *c*850-1200 CE, and consists of over 300 primary burials. We have recently been awarded a NEIF/NERC grant to obtain radiocarbon dates for about a third of the primary burials; these new dates will add to the 12 radiocarbon dates already available for the site, and will allow time stratification in future analyses of the cemetery.

External researchers are welcome to access the collection by contacting Dr Lia Betti (lia.betti@roehampton.ac.uk). Information on the collection and the procedures to apply for access can also be found at https://eportfolios.roehampton.ac.uk/anthroehampton/skeletal-collection/.

Our students access the collection during their module in Human Osteology and Diversity, and the remains have been the basis for several undergraduate dissertations. We accept volunteers to help cleaning and studying the remains in the summer months (almost a third of the remains are still waiting to be cleaned and looked at, given delays due to the Covid pandemic), and we offer a 2-day training workshop at the end of May in preparation for this work.

Last year we introduced a new MRes in Ecology, Evolution and Behaviour (https://www.roehampton.ac.uk/postgraduate-courses/ecology-evolution-and-behaviour/), with available projects in bioarchaeology and human evolution. There is wide flexibility in terms of the type of projects supported by academics in the School, that includes expertise in bioarchaeology, palaeoanthropology,

biomechanics, primate ecology and behaviour. The Master's course has a small taught component and allows our students to devote most of the year to their research project.

Department of Archaeology
University of Sheffield
Tegid Watkin

It has been another extremely challenging year for the Department of Archaeology at The University of Sheffield, as staff and students not only continued to adapt to the ongoing and developing pandemic, but were also faced with the threat of closure of the Department by the University's Executive Board. This decision caused widespread uncertainty and anxiety to both staff and students, and was passionately condemned by the national and international Archaeological community. The team at Sheffield wants to express our sincerest thanks to BABAO and BABAO members for all your support during this very disruptive year for our staff and students. It has meant a lot, and has made a huge difference. We will continue to offer our current portfolio of Masters courses until 2024, and have received a commitment from the institution that the restructure will preserve and enhance our strengths in Archaeology.

Human osteology is a core strength of both our research and teaching activity, and we are committed to seeing our team continue to thrive and grow in the future. The Human Osteology and Funerary Archaeology (HOFA), Osteoarchaeology, Archaeological Science, and Palaeoanthropology MSc courses continue to engage and challenge students, and we were pleased to be able to welcome students back into our labs and lecture theatres on a more consistent basis at the start of the Autumn Semester.

Updates

Lizzy Craig-Atkins has continued to work on two collaborative projects: the Material Body in Archaeology and History and the Torksey project, in addition to leading a new knowledge exchange project, Roots and Futures, which explores community engaged place-based heritage in Sheffield. 2021 saw the publication of the monograph of the excavations by Lorna Watts and Philip Rahtz at the early medieval cemetery of Kirkdale, North Yorkshire for which Lizzy undertook the osteological analysis.

We wish to extend a warm welcome to Dr Sam Purchase, who recently joined us as our new Teaching Associate in Human Anatomy and Osteology. Dr Purchase is also a PhD alumna of the University of Sheffield's Department of Archaeology, having successfully defended her thesis in December, 2021. Dr Purchase will be convening the Human Osteology, Human Anatomy and Applied Bioarchaeological Science modules.

2021 saw the departure of Dr Katie Hemer, Senior Lecturer in Bioarchaeology. Dr Hemer, who completed her Doctoral research at the Department in 2011, joined the teaching team in the 2011-2012 academic year as a University Teacher. Dr Hemer will be greatly missed by staff and students alike. We wish her all the best for the future, and thank her for the outstanding contributions she has made to her field of research and the Department throughout the last decade. Dr Hemer remains an Honorary Senior Research Fellow at the Department of Archaeology, and we look forward to welcoming her back as she continues her research into the osteological and histological collections curated by the Department. We would also like to thank Dr Chris Aris for his tenure as Teaching Associate in Anatomy and Osteology and University Teacher in Anatomy. His work in convening the Human Osteology and Human Anatomy modules, and co-directing the HOFA Master's program during the early stages of the COVID-19 pandemic was instrumental in ensuring a continued high standard of teaching in biological anthropology at the Department.

Many thanks and congratulations to our outgoing 2020-2021 cohort of Masters students for their hard work during an extremely challenging year. Notable recognition goes to Sam Meanor and Hinako Aoki, who graduated with Distinction from the 2020-2021 Human Osteology and Funerary

Archaeology program, and notable mentions go to our MSc Osteoarchaeology students who focused on human remains in their dissertations - Hannah Matthews, Isobel Grimley, and Ellie Roach, all of whom also graduated with Distinction. During the 2021 Autumn Semester we have welcomed in the new cohort of 19 HOFA, Osteoarchaeology, Palaeoanthropology, and Archaeological Science Masters students.

Many congratulations to the following PhD students, who either submitted their thesis, or were awarded their Doctorate, in 2021:

McAfee, I.: Joint conditions in post-medieval England: A comparative assessment of modern risk factors and historic lifestyles.

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

Poniros, S.: The Biological Anthropology of Diversity: Interdisciplinary Approaches to Migration and Ancestry in Roman Britain.

Purchase, S. L.: Point and Shoot: A Radiographic Analysis of Mastoiditis in Archaeological Populations from England's North-East

Shiner, M.: Transient relations: non-adult funerary practices in 1st – 10th 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 B.C. in Central-Southern Italy.

Conferences and events

Sam Purchase co-ran the BURG2021 Conference from the 19th–20th October, 2021. BURG2021 was a free two-day digital conference for doctoral and early career researchers in osteoarchaeology and bioanthropology exploring the health implications of living in an urban environment. It was hosted by the Bioarchaeology of Urbanization Research Group from the Department of Archaeology, University of Sheffield. By exploring health in urban/urbanizing archaeological populations across multiple geographic and temporal periods, the conference sought to present diverse insights into the everyday health impacts of natural—and unnatural—risk factors. Additionally, the conference aimed to foster collaboration and community amongst tomorrow's researchers, while addressing the unique problems imposed by the pandemic. The latter was accomplished by providing a free, online platform for doctoral and early career researchers to share both their finished and unfinished research in a variety of ways: as pre-recorded or live short or long podium presentations or poster presentations.

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.

Knox, E. L.: A multidisciplinary investigation into the social impact of foetal and mother mortality during the industrialisation of England

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

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

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.: A comparative three dimensional geometric morphometric analysis of the fourth and fifth carpometacarpal joints in humans, primates and fossil hominins, and its application in hominin early stone tool use.

Wigley, B: A bioarchaeological examination of the impact of early-life stress on later health outcomes using procrustean assessments 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/ArchaeologyShefield), Twitter (Shef Archaeology @UniShefArch), and YouTube (Archaeology Sheffield). Dr Lizzy Craig-Atkins is on Twitter at @ecraigatkins, and Dr Sam Purchase is on Twitter at @ SamanthaPurcha1. Follow our campaign - #SaveSheffieldArchaeology

Bioarchaeology & Osteoarchaeology

University of Southampton (BOS)

Sonia Zakrzewski

2021 was another *interesting* year. Unlike many universities, we were able to start our Masters teaching in the autumn of 2020. And we focussed on getting a good deal of the practical teaching done in that autumn term. This meant that Southampton was unusually well placed when we went into the January 2021 lockdown and had to pivot to online teaching. We then reorganised and extended the academic year into the summer in order to maintain our face to face palaeopathology teaching with Dr **Simon Mays** and Dr **Sonia Zakrzewski**, with some other Masters programmes running with a January 2021 start and teaching over the summer.

Southampton was saddened and shocked by the sudden death in the spring of Professor Simon Keay. Although obviously not a bioarchaeologist, he had developed and encouraged many research projects with osteoarchaeological aspects (particularly in Italy and Spain). Dr **Sarah Stark** continues to be associated with us in Southampton although she is now employed at Historic England as a skeletal biologist. Professor **Joanna Sofaer** has started a new research project looking at the impact of spaces and places on people's lives after COVID lockdown.

Our third 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 fourth 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

Steph Evelyn-Wright and **Emily Mitchell** successfully completed their PhDs this year. Steph Evelyn-Wright studied attitudes to and recognition of disability in Roman burials at Alington Avenue in Dorset, using fictive narrative ('*faction*') as a method for communication of complex ideas. Emily Mitchell took a holistic approach to study of the healing and treatment of trauma on board the Mary Rose, integrating analysis of the medical treatise of the time with the context of the medical chest found on board and

bioarchaeological analysis of the 'fairly complete' skeletons recovered.

Continuing Doctoral Student Research Topics:

Elizabeth Aubin – Variation in Roman and Anglo-Saxon cremation mechanisms

Kaylea-Ann Raczkowski Wood – Neanderthal mobility and locomotion: a finite element analysis

Emma van der Velden – Real Roman Britain: a skeletal and isotopic analysis of rural and urban populations in the south

Dissertations Approved for the MSc Archaeology (Bioarchaeology) 2020-2021

Bethany Goble − Reconstructing Romano-British and Anglo-Saxon Cremation Rites at Great Chesterford: a reassessment of the osteoarchaeological and sociocultural evidence

Jessica Coughtrey − Reconstructing the Activity Patterns of an Early Medieval Population: an analysis of entheseal change and osteoarthritis at Great Chesterford

Roy Wilde − Analysis of a Mid-to-Late Iron age Banjo Enclosure

Dissertations approved for other Archaeology Masters degrees that were linked with bioarchaeology, zooarchaeology and/or palaeopathology

Miles Clifford − Transformed: An exploration of animal sacrifice, hybridity and ritual performance in Romano-British cult (MArc Archaeology)

Emilia Hawthorne − A Study to Investigate Huan Sternum Size in Relation to Stature and Body Breadth on the Adult Skeletons from Great Chesterford (MA Maritime Archaeology)

David Hundrieser − A Focus on Resource Acquisition and Processing in Regard to Skin Boat Construction (MA Maritime Archaeology)

Emily Walsh − The Transition from Sail to Steam: a consideration of the impact of vessel design and onboard practices on the habitual activity of crews and their health between the 18th – 19th centuries (MSc Maritime Archaeology)

In addition, some students delayed their dissertation submission for COVID reasons.

Department of Archaeology and Anthropology
University of Winchester
Heidi Dawson-Hobbis

Winchester joined a select group of universities when two of its Archaeology degree programmes were formally accredited by the Chartered Institute for Archaeologists and University Archaeology UK. The BA (Hons)/BSc (Hons) Archaeology and BSc (Hons) Archaeological Practice/Archaeological Practice with Professional Placement courses all received accreditation.

In August 2021 Dr Monika Knul, Prof Keith Wilkinson and four undergraduate students worked alongside staff of DigVentures on a Middle Pleistocene palaeochannel sequence at Cerney Wick, Gloucestershire. The site is the location for the filming of the BBC's 'Attenborough and the mammoth graveyard', and has been investigated by ARCA, the Department's geoarchaeological consultancy since April 2019. The 2021 fieldwork provided an opportunity to enlarge and link three test pits dug through the palaeochannel in 2019, while also allowing a controlled excavation of a 4x4m area adjacent to the test pit with the highest concentration of vertebrate remains. As a result of investigations to date, partial remains of five steppe mammoth (*Mammuthus trogontherii*) were found together with several flint flakes. Bulk sediment samples collected in 2019 and 2021contain rich assemblages of beetles and molluscs and which indicate that the climate was temperate, but slightly cooler than present, while the environment surrounding the channel comprised open grassland. Further details on the Cerney Wick investigations can be found at www.winchester.ac.uk/mammothgraveyard

Prof Tony King in collaboration with Dr Ricardo Fernandes (Max Planck Institute, Jena), Dominika Schmidtova (Masaryk Uni, Brno) and Dr Vera Klontza-Jaklova (Masaryk Uni), has been designing and implementing a Roman period faunal remains database and associated interpretative set of programs, to be housed at Jena and available as a free resource to all faunal remains researchers. Users will be able to upload their own data and extract results in the form of datasets (with attributable doi codings).
Dr Monika Knul, Dr Heidi Dawson-Hobbis and Dr David Ashby worked alongside undergraduate and postgraduate students on a project funded by the Learning and Teaching Innovation Fund using photogrammetry to create 3D models of pathological bones from the University collection to aid in on-line teaching.

Dissertations approved for the MSc Human Osteology and Funerary Studies (graduating 2021)
Giovanni Calvia – A study of the dental pathology and anomalies of the individuals of St Mary Magdalen hospital cemetery, Winchester.

Harry Ower – A phased investigation of the West Hill cemetery, Winchester: Assessing the extent to which ground penetrating radar can be effectively used to detect potential mass graves within a historic cemetery.

Amber Pollard – What is normal anyway? Archaeological perspectives of 'non-normative' funerary practice in Anglo-Saxon Southern England and the use of 'deviant' as a social marker.

Awarded PhD:
Alexie Kendell - The Zooarchaeology of St Mary Magdalen, Winchester, in Context - Supervisors: Dr Simon Roffey and Professor Tony King.

POSTGRADUATE RESEARCH ABSTRACTS

Smoky hearths and stuffy noses: the impact of socio-economic changes on respiratory health during the late medieval (1200-1449 CE) and early modern (1500-1850 CE) periods in the Northern Low Countries

Maia Casna
Leiden University

PhD Abstract (ongoing)
Today, respiratory disorders are among the greatest contributors to the global burden of disease and constitute one of the most recurring causes of impairment in the Netherlands. These disorders have many causes (e.g., poor air quality, tobacco consumption) and tend to be associated with living environment and socioeconomic circumstances. The analysis of skeletal lesions associated with respiratory disorders has the unique opportunity to provide an historical perspective on the impact of socio-economic changes on people's health, highlighting how less-populated environments tend to show lower frequencies of respiratory disorders when compared to more densely populated ones. Previous historical and archaeological research has shaped the trope of life dramatically worsening with urban development. However, the urbanisation movement was markedly variable, and it presumably affected people's lives in extremely different ways. In the Northern Low Countries specifically, cities grew rapidly and independently from one another, making these contexts interesting microcosms of intense urbanisation for which it is difficult to assess how human experiences changed over time.
To contribute to a more complete understanding of urbanisation, this research investigates respiratory health in the skeletal remains of six different populations from the Northern Low Countries dating from the late medieval (1200-1449 CE) to early modern (1500-1850 CE) period, with a nuanced lens focused on the biosocial products of urbanisation. In addition to gleaning a new narrative of Dutch social history, this study

will provide a multidisciplinary and contextually driven perspective on respiratory health, which is a problem of increasing concern across the world today.

Supervisors:
Dr Amanda Henry, Dr Sarah A. Schrader, Dr Rachel Schats

Point and Shoot: A Radiographic Analysis of Mastoiditis in Archaeological Populations from England's North-East

Samantha L. Purchase
University of Sheffield

PhD Abstract (defended)
Mastoiditis is a common childhood infection (Bluestone 1998; Groth et al. 2012; NHS 2019a; Teele et al. 1989) and a complication of middle ear infection in adults (Bluestone 1998; Robb and Williamson 2018). The complications of mastoiditis range from behavioural, disabling, or fatal (Bluestone 1998; Hellier 2018; Rae and Ronan 2018:138; Robb and Williamson 2018; Rosenfeld and Kay 2003). An episode of mastoiditis as a child can also permanently stunt the development of the mastoid air cells (MAC) and create residual bony evidence of childhood infection in adult skeletal remains (Flohr et al. 2009). Despite how common, sever, and impactful mastoiditis is, it is understudied archaeologically; and when it is studied, it requires destructive methods or access to large imaging equipment. As such, this project developed and tested a new method of diagnosing mastoiditis in human skeletal remains that was grounded in modern clinical practices, non-destructive, and accessible.

Two archaeological populations were studied: the Anglo-Saxon/Saxo-Norman population from the Black Gate Cemetery, Newcastle-upon-Tyne (7th–12th centuries CE) and the Industrial Period population from St. Hilda's Church, Coronation Street, South Shields (c. 1750–1855 CE). A sample from Black Gate was studied in a preliminary analysis designed to develop and refine a method to image the MAC and diagnose mastoiditis from radiographs. This method was used to study mastoiditis in both populations. The prevalence of maxillary sinusitis and lower respiratory infection (LRI) was studied alongside mastoiditis. In doing so, the project expanded the understanding of the epidemiology and etiology of mastoiditis with reference to the frailty impact of mastoiditis and its relationships with environmental risk factors. The rate of respiratory-related disease in both populations appeared to have been dependant on natural, artificial, and social environmental risk factors and complicated by differences in frailty amongst socially distinct groups of people.

Supervisors:
Dr. Lizzy Craig-Atkins, Dr Jaydip Ray

Burial Before Breath: A multidisciplinary investigation into foetal and maternal mortality during the Industrialisation of England

Elizabeth L. Know
MOLA and University of Sheffield

PhD Abstract (started October 2020)
The aim of this research is to investigate how foetal remains were treated during the industrialisation of England and how their treatment reflects societal and family changes at this time. This study will undertake a comprehensive analysis of foetal death and 'disposal' during post-medieval England from 1760 through to the mid-19th century when registration of stillbirths began. Recent excavations of industrial burial grounds have yielded large skeletal assemblages with good preservation and present a unique opportunity to investigate foetal burials which researchers often assert are not present in post-medieval cemeteries or vanish through poor preservation. Through detailed analysis of data compiled from archaeological burial grounds across England including osteological, spatial, burial finds and coffin furniture, and by using historical documents including parish records this thesis will provide us with a deeper understanding of foetal death and burial for this time. This thesis will also investigate

industrial societies perceptions of pregnant women of different social standing and how this may have impacted alternative solutions to traditional burial of foetal remains.

Supervisors:
Dr Elizabeth Craig-Atkins, Dr Chris Millard, Rob Hartle (MOLA), Diego Rodrigo-Maganto (MOLA)

Death, disability, and diversity: An investigation of physical impairment and differential mortuary treatment in Anglo-Saxon England

Solange Bohling
University of Bradford

PhD Abstract (graduated)
Until recently, individuals with physical impairment have been overlooked within the field of archaeology due to the controversy surrounding the topics of disability and care in the past. The current research adds to the growing body of archaeological disability studies with an exploration of physical impairment and the possibility of disability-related care in Anglo-Saxon England (5th-11th centuries AD), utilising palaeopathological, funerary, and documentary analyses. Palaeopathological analysis of 86 individuals with physical impairment from 19 Anglo-Saxon cemetery populations (nine early, five middle, and five later) was performed, and the possibility of disability-related care was explored for several individuals. The mortuary treatment data (e.g. grave orientation, body position, grave good inclusion) was gathered for the entire burial population at each site (N=3,646), and the funerary treatment of the individuals with and without physical impairment was compared statistically and qualitatively, both within and between the Anglo-Saxon periods. No obvious mortuary differentiation of individuals with physical impairment was observed, although several patterns were noted. In three early Anglo-Saxon cemeteries, spatial association between individuals with physical impairment, non-adults, and females was observed. Early Anglo-Saxon individuals with physical impairment were more frequently buried in marginal locations, and two such individuals were buried in isolation. In the middle and later Anglo-Saxon periods, the funerary treatment of individuals with physical impairment became less variable, they were less frequently buried in marginal locations, and at three middle Anglo-Saxon cemeteries, they were buried in association with socially significant features in the cemetery landscape. The provision of care to ensure survival was not necessary for a majority of the individuals with physical impairment, but several individuals (lower limb paralysis, mental impairment) may have received regular, long-term care. This research proposes that the decreasing variability of mortuary treatment of individuals with physical impairment observed throughout the Anglo-Saxon period suggests that more variable attitudes about disability existed both within and between early Anglo-Saxon communities, while the political, social, and religious unification starting in the middle Anglo-Saxon period may have led to the development of more standardised perceptions of disability in later Anglo-Saxon England.

Supervisors:
Dr. Jo Buckberry, Dr Karina Crouser

Ritual and Funerary Rites in Later Prehistoric Scotland: An Analysis of Faunal Assemblages from the Covesea Caves

Alex Fitzpatrick
University of Bradford

PhD Abstract (graduated)
The Covesea Caves are a series of later prehistoric sites that form a complex mortuary landscape. Previous excavations of the caves have provided evidence for the decapitation, disarticulation, and intentional deposition of human remains. Although there has been substantial analysis of the human remains, there has been little consideration of the significant number of faunal remains recovered during numerous excavations. This research represents the first focused examination of the extensive

zooarchaeological record from the Covesea Caves, with an emphasis on investigating characteristics of the faunal bone related to taphonomy and processing in order to provide a proxy for the complex funerary treatments to which the human remains were subject.

Analysis of Covesea Cave 2 revealed a narrative of ritual and funerary activities, from the Neolithic to the Post-Medieval Period. Zooarchaeological analysis has illustrated how certain species were significant in ritual activity, and thus utilised specifically in funerary rites. The results from this research shed more light on past cosmologies and the importance of non-human species to humans in both life and death.

Supervisors:
Dr. Julie Bond, Dr. Jo Buckberry, Professor Ian Armit.

The mistreatment of children through the lens of neglect and abuse: how can bioarchaeology better approach these issues?

Roberta Marino
University of Sheffield

The priority placed upon preventing child mistreatment today has led bioarchaeologists to find novel ways to identify these behaviors and their consequences in the past. There has been considerable progress over recent years in understanding child pathology, child trauma and childcare in the past, which create a strong foundation to reassess the study of child abuse with renewed rigour. This project will offer a critical perspective on the nature of child abuse in the past. By taking an interdisciplinary approach to assess how physical abuse can be identified, it will fundamentally question how bioarchaeologists can better understand the mistreatment of children.

A Bioarchaeological Examination of Personhood and Collective Identities at Corinth, c. 1650-500 BCE

Hannah Lee
University of Sheffield

This project will bioarchaeologically investigate changing individual and collective identities in a multi-period, multi-cemetery skeletal sample from ancient Corinth, Greece. The sample comprises material from Mycenaean, Geometric and Archaic phases, thus encompassing the Bronze Age-Iron Age transition. Osteological evidence of demography, life quality, possible genetic affiliation and mortuary practice will be integrated with historical and archaeological data, as well as social theory, to analyse the dynamic negotiation of personal, social and political identities over a period of sweeping socio-political change, including the development of the Corinthian polis (city-state) c. 750-500 BCE.

The application of geometric morphometric analysis to the process of weapon identification in trauma analysis

Rebecca Strong
Teeside University

Geometric morphometric analysis quantifies shape employing landmarks to record the morphological points, thus allowing for detection of subtle shape changes of an object. The aim of this project is to test the applicability of geometric morphometrics to the analysis of trauma sustained to the human body, in particular the skeleton within a forensic context. The primary objective is to employ geometric morphometric analysis to trauma, specifically sharp force trauma, to determine if weapon type can be identified. Within the current literature, studies on the analysis of sharp force trauma in forensic contexts have focussed on using morphological and metrical features to differentiate and deduce a potential weapon or tool type which has likely caused an injury. Previous research, however, has demonstrated cutmarks created by the same type of weapons can produce cutmarks that are both morphologically and metrically different. Therefore, making identification of weapon

type from cutmarks a subjective process. With sharp instruments continually being the leading cause of homicide in England and Wales according to government statistics, a less subjective method could

CONFERENCE REPORTS AND REVIEWS

Taking a Breath: Reflecting on Respiratory Disease in Bioarchaeology (7th-8th June 2021)

(Organised by the Bioarchaeology Respiratory Network; Sponsored by BABAO and the UKRI-funded research project 'Tobacco, Health and History')

Report by Anna Davies-Barrett, University of Leicester

The 'Taking a Breath' online symposium took place across two afternoons on the 7th and 8th of June 2021 to great success. Inspired by a burgeoning interest in respiratory disease in the past and by the recent formation of the Bioarchaeology Respiratory Network, this symposium sought to present new findings, innovative methods, and potential pathways for future interdisciplinary research related to the (bio)archaeological study of respiratory disease. The symposium was kindly sponsored by the British Association for Biological Anthropology and Osteoarchaeology (BABAO) and the UKRI-funded research project 'Tobacco, Health and History', with approximately 260 people from across the world registering to attend the event.

The symposium consisted of six fifteen-minute talks by current researchers specialising in archaeological research related to respiratory disease, a keynote lecture by Professor Charlotte Roberts, and a discussion panel of experts who have previously contributed to this field of study. Talks were selected to incorporate a wide variety of approaches and exciting new methods related to the study of respiratory disease in the past.

To begin, Dr Cecilia Collins provided an introduction to the topic with a talk on the major findings of her doctoral research into respiratory infection, otitis media, and its potential relationship to tuberculosis in Medieval Icelandic groups (*Hidden disabilities: the palaeopathology of chronic respiratory infection and hearing loss in medieval Iceland*). Samantha Purchase and Dr Bruno Magalhães both presented on exciting new method developments resulting from their own doctoral research. Samantha Purchase introduced us to a system for investigating prevalence rates of mastoiditis using a portable X-ray system (*Point and shoot: a handy method to visualize mastoiditis in human skeletal remains*), while Dr Bruno Magalhães provided a systematic approach to the recording of anatomical nasal variations in crania and their relationship to the development of maxillary sinusitis (*Nasal variations and maxillary rhinosinusitis: methodological approaches and possible relationship*).

Incorporating other strands of archaeological research, Dr Anita Radini introduced us to the use of calculus for investigating the various respiratory irritants present in different past lived environments (*Dental calculus and respiratory health in past societies: an overview*), and Dr Lisa-Marie Shillito presented on her unique study of the measurement of particulate matter given off by fuel burning in a reconstructed Neolithic house at Çatalhöyük *(Biofuels and respiratory health: the potentials of the (geo)archaeological record*). Finally, Derek Boyd finished the first day by inviting us to think theoretically about intersectionality and its potential incorporation into bioarchaeological studies of respiratory disease, around which his doctoral research focuses (*Thinking intersectionally about respiratory stress in bioarchaeology*).

On the second day, in her keynote lecture entitled '*Breathe in and breathe out, then repeat: bioarchaeological contributions to understanding respiratory system disease in the past*', Professor Charlotte Roberts delivered an excellent summary of previous and current bioarchaeological research on respiratory disease, issues encountered within the field, and the future potential of this avenue of research. The keynote lecture led perfectly into the subsequent lively discussion panel, consisting of Professor Charlotte Roberts,

Professor Mary Lewis, Professor Ana Luisa Santos, and Dr Sarah Inskip. Here, we discussed issues around the analysis (or lack thereof) of respiratory disease in juvenile human skeletal remains, the future potential use of human identified skeletal collections, the incorporation of interdisciplinary and biomolecular techniques for gaining further insight into the development of respiratory diseases, and the impact of Covid-19 on our understanding and approaches to investigating past experiences of respiratory disease – to name but a few of the wide range of topics raised.

The symposium talks and discussion panel provided an excellent snapshot of current relevant research, methods, and issues, highlighting the value of (bio)archaeological studies of respiratory disease for our understanding of the past and for demonstrating the role our discipline can have in discussions of current global concerns. It is hoped the fantastic attendance and engagement at the symposium will stimulate new avenues of research across the world that can contribute to our understanding of respiratory disease in the past.

The Bioarchaeology Respiratory Network would like to wholeheartedly thank BABAO for their generous sponsorship for this symposium. If you would like to gain access to the recorded talks, please contact us via email (bioarchrespiratorynetwork@gmail.com) or on our Twitter (@Bioarchresp). You can also learn more about the Bioarchaeology Respiratory network at www.bioarchrespiratorynetwork.com/network

(UN)Natural lives - Bioarchaeology of urbanization research group conference (19th-20th October 2021)

Report by Maia Casna, Leiden University

From the 19th to the 20th of October 2021, the Bioarchaeology of Urbanization Research Group (B.U.R.G.) conference was held online and sponsored by the British Association for Biological Anthropology and Osteoarchaeology (B.A.B.A.O.).

The conference commenced with three morning sessions: one on Dental Anthropology, one on Funerary and Non-Skeletal Bioarchaeology, and one of Osteoarchaeology of Ancient Rome. Papers were presented on topics including child mortality, indicators of urban stress, mental health, and partner violence in Ancient Rome. In the afternoon, two sessions were held: Osteoarchaeology of Industrial Europe, and Osteoarchaeology of Central and South America. Presentations discussed topics such as respiratory disease, vertebral pathologies, physiological stress, and differences in health between migrants and natives.

The quality of the research presented throughout the first day of conference was extremely high. Many thanks to the session chairs Elizabeth L. Knox, Aimée Barlow, Samantha L. Purchase, Ofelia Meza-Escobar, and Ben R. Wigley for capably leading the speakers as well as the public.

The second day of conference dedicated some time to poster presentations (held on Kumospace). Then, before closing remarks, panellists Dr Sharon DeWitte, Dr Zichun Jing, Jelena Bekvalac, and Don Walker answered several questions on the topic of urbanization and health in the past and discussed possible future directions of palaeopathological research. It must be noted that the online format of the conference allowed a great number of international scholars to present their research, with representatives from countries such as the UK, Poland, the Netherlands, Italy, Chile, and many others.

Many congratulations to the organisers of the B.U.R.G. conference. It really was a very enjoyable and valuable symposium which showed the clear interests bioarchaeologists have in investigating themes such as urbanization and health.

FORTHCOMING CONFERENCES, COURSES AND WORKSHOPS

We are pleased to announce that BABAO's 23nd Annual Conference in 2022 will be hosted by Northumbria University and Newcastle University. Dates will be Friday the 16th to Sunday the 18th September.

Contact: Prof Patrick Randolph-Quinney: patrick.randolph-quinney@northumbria.ac.uk

---

The 6th Sudan Studies Research Conference will be held on the 25 June at the University of Munich. Contact Dr Samantha Tipper on Samantha.Tipper@aru.ac.uk or go to:

www.sudan-conference.com

Distance Education in Wildlife Forensic Sciences & Conservation
University of Florida
https://masters.wildlife.forensics.med.ufl.edu/about/faculty/john-cooper-dtvm-frcpath-frsb-cbiol-frcvs-and-margaret-cooper-llbfls

---

MEMBERS' PUBLICATIONS 2021

Adler, T., Fibiger, L., Harries, J., Smith, J., Szöke, A. and Teschler-Nicola, M. Dead images. Facing the history, ethics and politics of European skull collections. In: Hamm, M. and Schönberger, K. (eds.) *Contentious Heritages and Arts: A Critical Companion*. Klagenfurt: Wieser, pp. 63-68.

Battles, H.T., Gilmour, R.J. Beyond mortality: Survivors of Epidemic Infections and the Bioarchaeology of Impairment and Disability. *Bioarchaeology International* 6(1-2): 1- 18. https://doi.org/10.5744/bi.2021.0003

Biddulph, E, Foreman, S, Hayden, C, Poole, C, and Smith, K. *London Gateway: Settlement, farming and industry from prehistory to the present in the Thames Estuary: Archaeological investigations at DP World London Gateway Port and Logistics Park, Essex, and on the Hoo Peninsula, Kent*, Oxford Archaeology Monograph series, vol 31, Oxbow Books.

Biskar, C., Taylor, G., Carney, H.C. and Ralebitso-Senior, T. A combined application of molecular microbial ecology and elemental analyses can advance the understanding of decomposition dynamics – *Frontiers in Ecology,* 13th May.

Błaszczyk, D., Beaumont, J., Krzyszowski, A., Poliński, D., Drozd-Lipińska, A., Wrzesińska, A. and Wrzesiński, J. Social status and diet. Reconstruction of diet of individuals buried in some early medieval chamber graves from Poland by carbon and nitrogen stable isotopes analysis. *Journal of Archaeological Science: Reports*, 38: 103103.

Caccianiga, M., Caccia, G., Mazzarelli, D., Salsarola, D., Poppa, P., Gaudio, D., Cappella, A., Franceschetti, L., Tambuzzi, S., Maggioni, L. and Cattaneo, C. Common and much less common scenarios in which botany is crucial for forensic pathologist and anthropologists: a series of eight case studies. *International Journal of Legal Medicine,* 135(3): 1067-1077.

Caffell, A. and Holst, M. 'Human Remains'. In: Boismier, W.A., Taylor, E. and Wolframm-Murray, Y. (eds) *Excavations at Stanground South, Peterborough: Prehistoric, Roman and Post-Medieval Settlement Along the Margins of the Fens (Oxford).* Archaeopress Archaeology, pp. 165-216.

Casna, M., Burrell, C.L., Schats, R., Hoogland M.P., Schrader, S.A. Urbanization and respiratory stress in the Northern Low Countries: A comparative study of chronic maxillary sinusitis in two early modern sites from the Netherlands (AD 1626–1866). *International Journal of Osteoarchaeology* 31(5): 891–901. https://doi.org/10.1002/oa.3006

Compton, T., Skinner, M.M., Humphrey, L., Pope, M., Bates, M., Davies, T.W., Parfitt, S.A., Plummer, W.P., Scott, B., Shaw, A. and Stringer, C. The morphology of the Late Pleistocene hominin remains from the site of La Cotte de St Brelade, Jersey (Channel Islands). *Journal of Human Evolution*, 152: 102939.

Curtis-Summers, S. 'Digest of Evidence 9, The Human Bone'. In: Clark, J., Garner-Lahire, J., Spall, C. and Toop, N. (eds.), *Lincoln Castle*

Revealed, The story of a Norman powerhouse and its Anglo-Saxon precursor. Oxford: Oxbow Books.

Daniel, P., with contributions by Andrews, P., Caffell, A. Challinor, D., Dunne, J., Evershed, R.P., Gillard, T., Holst, M., Keefe, K., Leivers, M., López-Dóriga, I., Mepham, L., Petersone-Gordina, E. and Quinn , P.S. "What are the dead for?" Bronze Age burials in a multi-period landscape at Bucklow Hill, Cheshire, *Archaeological Journal.* https://doi.org/10.1080/00665983.2021.1921413

Davies Barrett, A., Antoine, D. and Roberts, C.A. Time to be nosy: Evaluating the impact of environmental and sociocultural changes on maxillary sinusitis in the Middle Nile Valley (Neolithic to Medieval periods). *International Journal of Paleopathology,* 34: 182-196.

Dawson-Hobbis H, Taylor GM and Stewart GR. A case of childhood tuberculosis from late mediaeval Somerset, England, *Tuberculosis,* 128: 102088.

De Cupere, B., Speleers, L., Mitchell, P.D., Degraeve, A., Meganck, M., Bennion-Pedley, E., Jones, A.K., Ledger, M.L., Deforce, K. A multidisciplinary analysis of cesspits from late medieval and post-medieval Brussels, Belgium: diet and health in the fourteenth to seventeenth centuries. *International Journal of Historical Archaeology.* https://doi.org/10.1007/s10761-021-00613-8

Deforce, K., Ledger, M.L., Derreumaux, M., Goffette, Q., Henrotay, D., Pigière, F., Wouters, W., Mitchell, P.D. Diet, hygiene and health in Roman period northern Gaul: A multidisciplinary study of a latrine from an artisan household in the vicus Orolaunum (Arlon, southern Belgium, c.250-280 CE). *Journal of Archaeological Science: Reports,* 35:102761. https://doi.org/10.1016/j.jasrep.2020.102761

Dittmar, J.D., Mitchell, P.D., Cessford, C., Inskip, S.A., Robb, J.E. Medieval injuries: Skeletal trauma as an indicator of past living conditions and hazard risk in Cambridge, England. *American Journal of Physical Anthropology,* 175: 626-645.

Dittmar, J.M., Mitchell, P.D., Jones, P.M., Mulder, B., Inskip, S.A., Cessford, C., Robb, J.E. Gout and 'Podagra' in medieval Cambridge, England. *International Journal of Paleopathology,* 33: 170-181.

Dittmar, J.M., Mitchell, P.D., Cessford, C., Inskip, S.A., Robb, J.E. Fancy shoes and painful feet: Hallux valgus and fracture risk in medieval Cambridge, England. *International Journal of Paleopathology,* 35: 90-100.

Dunne, J., Biddulph, E., Manix, P., Gillard, T., Whelton, H., Teague, S., Champness. C. Broderick, L.G., Nicholson, R., Blinkhorn, P., Craig-Atkins E., Jervis, B., Madgwick, R., Cramp, L.J. and Evershed, R.P. Finding Oxford's medieval Jewry using organic residue analysis, faunal records and historical documents. *Archaeological Method and Theory,* 13: (48). https://doi.org/10.1007/s12520-021-01282-8.

Elliott, J. Radiography of human dry bones: A reflective account with recommendations for practice. *Radiography,* 23 October. https://doi.org/10.1016/j.radi.2021.10.011

Etxeberria, F., González-Ruibal, A., Herrasti, L., Márquez-Grant, N., Muñoz-Encinar, L. and Ramos, J. Twenty years of forensic archaeology and anthropology of the Spanish Civil War (1936-1939) and Francoist Regime. *Forensic Science International: Synergy* 3: 100159.

Fernee, C., Zakrzewski, S., and Brown, K.R. Dimorphism in dental tissues: sex differences in archaeological individuals for multiple tooth types. *American Journal of Physical Anthropology*,175:106-127. https://doi.org/10.1002/ajpa.24174

Fibiger. L. Steven Pinker's 'Prehistoric Anarchy': A bioarchaeological critique. In: Dwyer, P. and Micale, M. (eds.) *The Darker*

Angels of Our Nature : Refuting the Pinker Theory of History and Violence. London: Bloomsbury Academic, pp. 107-124.

Filipek, K.L., Roberts, C.A., Gowland, R. L. and Tucker, K. Alloparenting Adolescents: Evaluating the Social and Biological Impacts of Leprosy on Young People in Saxo-Norman England (9th to 12th Centuries AD) through Cross-Disciplinary Models of Care. In: Kendall, E.J. and Kendall, R. (eds) *The Family in Past Perspective: An Interdisciplinary Exploration of Familial Relationships through Time*. Abingdon: Routledge, pp. 30-57.

Filipek, K.L., Roberts, C.A., Gowland, R.L., Montgomery, J. and Evans, J. A. Illness and inclusion: Mobility histories of adolescents with leprosy from Anglo-Scandinavian Norwich (Eastern England). *International Journal of Osteoarchaeology,* 31(6): 1180-1191.

Fiorin, E., Moore, J., Montgomery, J., Mariotti Lippic, M., Nowell, G. and Forlin, P. Combining dental calculus with isotope analysis in the Alps: new evidence from the Roman and medieval cemeteries of Lamon, northern Italy. *Quaternary International.*

Flavin, S.M., McClatchie, M., Montgomery, J. Beglane, F., Dunne, J.B., O'Carroll, E. and Parnell, A. An Interdisciplinary Approach to Historic Diet and Foodways: The FoodCult Project. *European Journal of Food Drink and Society,* 1(1): 3, 21-54.

Franceschetti, L., Mazzucchi, A., Magli, F., Collini, F., Gaudio, D. and Cattaneo, C. Are cranial peri-mortem fractures identifiable in cremated remains? A study on 38 known cases. *Legal Medicine,* 49: 101850.

Fricke, F., Laffoon, J. and Espersen, R. Unforgotten: The osteobiography, of an enslaved woman and child from 18th century Saba. J*ournal of Archaeological Science: Reports, 36*: 102838.

Gilmour, R.J., Brickley, M.B., Hoogland, M., Jurriaans, E. and Prowse, T.L. Quantifying cortical bone in fragmentary archaeological second metacarpals. *American Journal of Physical Anthropology,* 174(4): 812-821. https://doi.org/10.1002/ajpa.24248

Gowland, R. and Kacki, S. Theoretical approaches to bioarchaeology: The view from across the pond. In: Cheverko, C.M., Prince-Buitenhuys, J.R. and Hubbe, M. (eds) *Theoretical Approaches in Bioarchaeology*. London: Taylor & Francis.

Gowland, R., Stewart, N.A., Crowder, K.D., Hodson, C., Shaw, H., Gron, K. J. and Montgomery, J. Sex estimation of teeth at different developmental stages using dimorphic enamel peptide analysis. *American Journal of Physical Anthropology,* 174(4): 859-869.

Gowland, R., Thompson, T. J.U. The Art of Identification: The Skeleton and Human Identity. In: Ferguson, R. Littlefield, M.M. and Purdon, J. (eds) *The Art of Identification: Forensics, Surveillance, Identity.* University Park: Penn State Press, pp. 101-120.

Gowland, R.L. and Thompson, T.J.U. The skeleton and human identity. In: Ferguson, R., Littlefield, M and Purdon, J. (eds.) *The Art of Identification: Forensics, Surveillance, Identity.* University Park: Penn State Press.

Herrasti, L., Márquez-Grant, N. and Etxeberria, F. Spanish Civil War: the recovery and identification of combatants. *Forensic Science International.* https://doi.org/10.1016/j.forsciint.2021.110706

Keefe, K. and Holst, M. 'Chapter 13, Human Bone'. In: Philips, J. and Wilson, P. (eds). *Life, Death and Rubbish Disposal in Roman Norton, Norton Yorkshire: Excavations at Brooklyn House* 2015-2016. Oxford: Archaeopress. pp. 237-247.

Kendall, E.J, Millard, A. and Beaumont, J. The "weanling's dilemma" revisited: Evolving bodies of evidence and the problem of infant paleodietary interpretation. *Yearbook of Physical Anthropology,* 175(S72): 57-78.

Kilburn, N.N., Gowland, R., Halldórsdóttir, H.H., Williams, R. and Thompson, T.J.U. Assessing pathological conditions in archaeological bone using portable X-ray fluorescence (pXRF). *Journal of Archaeological Science: Report*s, 37: 102980.

King, C.L., Petchey, P. Kinaston, R., Gröcke, D.R., Millard, A., Wanhalla, A., Brooking, T., Matisoo-Smith, E. and Buckley, H.R.A. Land of Plenty? Colonial Diet in Rural New Zealand. *Historical Archaeology,* 55: 250-268.

King, C.L., Kinaston, R.L., Snoddy, A.M.E., Buckley, H.R., Petchey, P., Millard, A. and Gröcke, D.R. Childhood in Colonial Otago, New Zealand: Integrating Isotopic and Dental Evidence for Growth Disturbance and Oral Health. *Childhood in the Past*. https://doi.org/10.1080/17585716.2021.1989211

Knüsel, C.J., Milella, M., Betz, B., Dori, I., Garofalo, E., Glencross, B., Haddow, S.D., Ledger, M.L., Anastasiou, E., Mitchell, P.D., Pearson, J., Pilloud, M.A., Ruff, C.B., Sadvari, J.W., Tibbetts, B., Larsen, C.S., Bioarchaeology at neolithic Çatalhöyük: Indicators of health, well-being and lifeway in their social context. In: Hodder, I. (ed.) *Peopling the Landscape of Çatalhöyük: Reports from the 2009-2017 Seasons.* Çatalhöyük Research project Series no.13. British Institute at Ankara, pp. 315-56.

Kocher, A., Papac, L., Barquera, R., et al (incl. Beckett, S). Ten millennia of hepatitis B virus evolution. *Science*, 374 (6564) 182-188. https://doi.org/10.1126/science.abi5658

Ledger, M.L., Micarelli, I., Ward, D., Prowse, T.L., Carroll, M., Killgrove, K., Rice, C., Franconi, T., Tafuri, M.A., Manzi, G., Mitchell, P.D. Gastrointestinal infection in Italy during the Roman Imperial and Longobard periods: A paleoparasitological analysis of sediment from skeletal remains and sewer drains. *International Journal of Paleopathology,* 33: 61-71.

Lee, M.J., Siek, T.J., and Hirst, C.S. Syphilis in London's Children's Hospitals (1852 – 1921). *Journal of Bioanthropology*, 1: 25-41. https://doi.org/10.54062/jb.1.1.1

Maaranen, N., Zakrzewski, S., Kharobi, A., Stantis, C., Prell, S., Bietak, M., and Schutkowski, H. The People of Avaris: Intra-regional biodistance analysis using dental non-metric traits. *Bioarchaeology of the Near East,* 15: 1-24.

MacKenzie, L., Speller, C.F., Holst, M., Keefe, K. and Radini, A. 2021. 'Dental calculus in the industrial age: Human dental calculus in the Post-Medieval period, a case study from industrial Manchester'. *Quaternary International.* https://doi.org/10.1016/j.quaint.2021.09.020

Marques, C., Roberts, C. A., Matos, V. M.J., Buikstra, J. E. Cancers as Rare Diseases: Terminological, Theoretical, and Methodological Biases. *International Journal of Paleopathology,* 32:111-122.

Márquez-Grant, N. and Errickson, D. The legislation, search, recovery, identification and repatriation of conflict casualties worldwide: Introducing the WWI and WWII Special Issue. *Forensic Science International*, 320, 110716. https://doi.org/10.1016/j.forsciint.2021.110716

Márquez-Grant, N., Olivé Busom, J. y Ramon Torres, J. Los restos humanos de la necrópolis púnica de Ses Païsses de Cala d'Hort (Can Sorà, Ibiza): Estudio antropológico. *Coloquio Fenicio-Púnico Noviembre 2018.* Museu Arqueològic d'Eivissa i Formentra, Ibiza, pp. 388-421.

Márquez-Grant, N., Webster, H., Dussault, M-C., Harris, M., Roberts, J., Errickson, D. and Sanabria Medina, C. Identifying blast trauma in the human skeleton: applications for forensic anthropology. In: Shvedchikova, T. Barone, P.M. and Moggadham, N. (eds), *Crimes in the Past.* Archaeopress: Oxford, pp. 206-243.

Márquez-Grant, N. and Roberts, J. Redefining forensic anthropology in the 21st century and

its role in mass fatality investigations. *European Journal of Anatomy,* 25(S2): 19-34.

Márquez-Grant, N., Errickson, D., Morgan, S., Ronner, E. and Giles, S. Best practice, challenges and recommendations regarding the recovery and identification of conflict casualties: knowledge exchange from a WWI and WWII forensic symposium and from the Special Issue. *Forensic Science International.*

Mata Tutor, P., Benito Sánchez M, Villoria Rojas, C., Muñoz García, A., Pérez Guzmán I. and Márquez-Grant, N. Cut or burnt?–Categorizing morphological characteristics of heat-induced fractures and sharp force trauma. *Legal Medicine.* https://doi.org/10.1016/j.legalmed.2021.101868

Mata Tutor, P., Villoria Rojas, C., Márquez-Grant, Álvarez de Buergo Ballester, M., Pérez Ema, N. & Benito Sánchez, M. Measuring dimensional and morphological heat alterations of dismemberment-related toolmarks with an Optical Roughness-meter. *International Journal of Legal Medicine.* https://doi.org/10.1007/s00414-021-02627-7

Mata Tutor, P. El fuego como agente tafonómico: análisis antropológico forense de marcas de corte relacionadas con el desmembramiento en restos óseos cremados [Fire as a taphonomic agent: anthropological analysis of dismemberment-related cutmarks in burnt bones]. Doctoral thesis, *Universidad Complutense de Madrid.*

Michael, D.E., Fibiger, L., Ziota, C., Gkelou, L. and Molloy, B. Exploring the Efficacy of Comparative Bioarchaeological Approaches in Providing Answers on Marginality and Networking: The Example of Late Bronze Age Achlada in Florina, Northern Greece. *Bioarchaeology International,* 5(1), 21-46.

Mikulski, R.N.R., Schutkowski, H., Smith, M.J., Doumet-Serhal, C., Mitchell, P.D. Weapon injuries in the crusader mass graves from a 13th century attack on the port city of Sidon (Lebanon). *PLoS ONE*, 16(8): e0256517.

Mitchell, P.D., Dittmar, J.M., Mulder, B., Inskip, S., Littlewood, A., Cessford, C., Robb, J.E. The prevalence of cancer in Britain before industrialisation. *Cancer,* 127(17): 3054-3059.

Mitchell, P.D., Dittmar, J.M., Mulder, B., Inskip, S., Littlewood, A., Cessford, C., Robb, J.E. Assessing the relative benefits of imaging with plain radiographs and microCT scanning to diagnose cancer in past populations. *International Journal of Paleopathology,* 36: 24-29.

Mitchell, P.D., Rabinow, S.A. Maladies infectieuses intestinales et parasites au temps des croisades. In: Collard, F. and Samama, E. (eds) *Histoire du Ventre; Entrailles, Tripes et Boyaux*. L'Harmattan: Paris, pp.195-208.

Molina A., Bravo, M., Fonseca, G.M., Márquez-Grant, N. and Martín de las Heras, S. Dental age estimation based on pulp chamber/crown volume ratio measured on CBCT images in a Spanish population. *International Journal of Legal Medicine*, 135: 359-364.

Moore, J., Filipek, K., Kalenderian, V, Gowland, R., Hamilton, E., Evans, J. and Montgomery, J. Death Metal: Evidence for the impact of lead poisoning on childhood health within the Roman Empire. *International Journal of Osteoarchaeology,* 31(5): 846-856.

Moore, J., Williams-Ward, M., Filipek, K., Gowland, R. and and Montgomery, J. Poisoned pregnancies: consequences of prenatal lead exposure in relation to infant mortality in the Roman Empire. In: Kendell, E.J. and Kendall, E. (eds) *The Family in Past Perspective: An Interdisciplinary Exploration of Familial Relationships through Time*. London: Routledge, pp. 137-158.

Mora, A., Pacheco, A., Roberts, C.A. and Smith, C. Palaeopathology and amino acid δ13C analysis: Investigating pre-Columbian individuals with tuberculosis at Pica 8,

northern Chile (1050-500 BP). *Journal of Archaeological Science,* 129: 105367. doi.org/10.1016/j.jas.2021.105367

O'Donoghue, R., Walker, D. and Beaumont, J. Children of the abyss: Investigating the association between isotopic physiological stress and skeletal pathology in London during the Industrial Revolution. *International Journal of Paleopathology*, 35: 61-80.

Olivé, J., López-Costas, O., Márquez-Grant, N. and Kirchner, H. Estudio antropológico de las alquerías de Benizahat y Zeneta (Vall d´Uixó, Castellón). Una ventana a la vida rural andalusí. *SAGVNTVM*, 53: 191-210.

Olivé Búsom, J., López Costas, O., Quer-Agustí, M., Márquez-Grant, N. and Kirchner, H. Case report: ear infection in a Medieval Islamic skeleton from Spain. *International Journal of Paleopathology,* 32: 17-22.

Orr, C.H., Williams, R., Halldórsdóttir, H., Birley, A., Greene, E, Nelson, A., Ralebitso-Senior, T.K. and Taylor, G. Unique Chemical Parameters and Microbial Activity Lead to Increased Archaeological Preservation within Vindolanda, UK. *Scientific Reports,* 11, article number 15837.

Paba, R., Thompson, T.J.U., Fanti, L. and Lugliè, C. Rising from the ashes: A multi-technique analytical approach to determine cremation. A case study from a Middle Neolithic burial in Sardinia (Italy). *Journal of Archaeological Science*: *Reports,* 36: 102855.

Pētersone-Gordina, E., Gerhards, G., Roberts, C.A., Jakob, T., Ranka, R., Kimsis, J., Zole, E. and Kazarina, A. Differential diagnosis of abnormal enlargement and bending deformities in the skeleton of a medieval child from St Peter's Church cemetery, Riga, Latvia. *Anthropologie,* 59: 1-20.

Pfrengle, S., Neukamm, J., Guellil, M., Keller, M., Molak, M., Avanzi, C., Kushniarevich, A., Roberts, C.A. et al. Mycobacterium leprae diversity and population dynamics in medieval Europe from novel ancient genomes. *BMC Biology,* 19: 220. https://doi.org/10.1186/s12915-021-01120-2

Plomp, E. Neodymium isotopes in modern human dental enamel: An exploratory dataset for human provenancing, *Data in Brief,* 729. https://doi.org/10.1016/j.dib.2021.107375

Posth, C. et al. The origin and legacy of the Etruscans through a 2000-year archeogenomic time transect. *Science Advances,* 7(39). https://doi.org/10.1126/sciadv.abi7673

Primeau, C. Raising awareness of osteopetrosis. Imaging & Therapy Practice, 24-27, February.

Pritchard, D.I., Falcone, F.H., Mitchell, P.D. The evolution of IgE-mediated type I hypersensitivity and its immunological value. *Allergy,* 76: 1024-1040.

Quade, L. and Gowland, R. Modeling Health during Societal Collapse: Can Recent History Help Our Understanding of Post-Roman Gaul? *Bioarchaeology International,* 4(3-4): 172-190.

Quade, L. and Gowland, R. Height and health in Roman and Post-Roman Gaul, a life course approach. *International Journal of Paleopathology*, 35, 49-60.

Quade, L., Chazot, P.L., Gowland, R. Desperately seeking stress: A pilot study of cortisol in archaeological tooth structures. *American Journal of Physical Anthropology,* 174, 532–541.

Rahtz, P. Watts, L., Bailey, R. Craig-Atkins, E. Senior, J. St Gregory's Minster, Kirkdale, North Yorkshire. Archaeological Investigations and Historical Context. *Archaeopress Archaeology*.

Robb, J., Cessford, C., Dittmar, J.M., Inskip, S., Mitchell, P.D. The greatest health problem of the Middle Ages? Estimating the burden of disease in Medieval England. *International Journal of Paleopathology,* 34: 101-112.

Roberts, C.A. Exploring the Third "Epidemiological Transition". Palaeopathology's contribution to understanding health and well-being today and in the future. In: Robbins Schug, G. (ed) *The Routledge Handbook of Bioarchaeology of Environmental Change*. Abingdon: Routledge, pp. 19-42.

Roberts, C.A. Reflections on the bioarchaeology of leprosy and identity. In: Brenner E. and Touati, F.O. (eds) *Leprosy and Identity in the Middle Ages: from England to the Mediterranean.* Manchester: Manchester University Press, pp. 21-44.

Roberts, C.A. Studying remains (in chapter 7 on Anthropology and Health). In: Strang, V. (ed) *What do anthropologists do?* 2nd edition. Abingdon: Routledge, pp. 45-149.

Roberts, C.A. Buikstra, J.E. History of tuberculosis from the earliest times to the development of drugs. In: Friedman, L.M. Dedicoat, M. and Davies, P.D.O. (eds) *Clinical Tuberculosis.* 6th edition. London: CRC Press, pp. 3-15.

Santana, J., Millard, A., Ibáñez-Estevez, J. J., Bocquentin, F., Nowell, G., Peterkin, J., Macpherson, C., Muñiz, J., Anton, M., Alrousan, M. and Kafafi, Z. Multi-isotope evidence of population aggregation in the Natufian and scant migration during the early Neolithic of the Southern Levant. *Scientific Reports,* 11(1): 11857.

Schats, R., van Hattum, I.J.K.., Kootker, L.M., Hoogland, M.L.P. and Waters-Rist, A.L. Diet and urbanisation in medieval Holland. Studying dietary change through carious lesions and stable isotope analysis. *International Journal of Osteoarchaeology*. https://doi.org/10.1002/oa.3051

Schats, R. Cribriotic lesions in archaeological human skeletal remains. Prevalence, co-occurrence, and association in medieval and early modern Netherlands. *International Journal of Paleopathology,* 35: 81–89. https://doi.org/10.1016/j.ijpp.2021.10.003

Simmonds, A, and Boothroyd, J. Roman occupation and burials at Sibford Road, Hook Norton, *Oxoniensia,* 86, 243-292.

Snoddy, A.M.E., King, C. L., Halcrow, S.E., Millard, A., Buckley, H.R., Standen, V.G. and Arriaza, Bernardo, T. Living on the Edge: Climate-induced micronutrient famines in the ancient Atacama Desert? In: Robbins Schug, G. (ed) *The Routledge Handbook of Bioarchaeology of Environmental Change*. Abingdon: Routledge, pp. 60-82.

Stuart-Lawson, J., and Curtis-Summers, S. Reconstructing the childhood diet of individuals buried with the Pictish monastic community at Portmahomack. *Proceedings of the Society of Antiquaries of Scotland,* 150: 385-406.

Teague, S, Webley, L, and Champness, C. A Bronze Age cremation cemetery and Romano-British enclosure at Glebelands, Broughton, Milton Keynes, *Records of Buckinghamshire,* 61, 49-57.

Tyler, J.A., Cordiner, E., Kacki, S., Gowland, R., Gröcke, D.R. and Montgomery, J. Stable isotope study of dietary changes in the aftermath of the Black Death in Toulouse, France. *American Journal of Physical Anthropology,* 174: 105-105.

Vachirawonesakorn, V., Painter, J. and Márquez-Grant, N. The survival of cut marks inflicted by different types of knife blades in burnt bone: a dimensional and morphological study. *International Journal of Legal Medicine.* https://doi.org?10.1007/s00414-021-02726-5

Vacková, S., Králík, M., Marečková, K., Ráčková, L., Quade, L., Sedláčková, L., Fojtík, P. and Kučera, L. Human "barcode": Link between phosphate intensity changes in human enamel and light microscopy record of accentuated lines. *Microchemical Journal,* 106370.

Végh, E., Czermak, A., Márquez-Grant, N., and Schulting, R. Detection of perimortem and early postmortem changes in burnt bones

through histotaphonomical analysis. *Journal of Archaeological Science: Reports*, 37, 102906.
https://doi.org/10.1016/j.jasrep.2021.102906

Villoria Rojas, C., Iruita Olivares, J., Mata Tutor, P., Muñoz García A. and Benito Sánchez, M. Sternal human variability and population affinity: Frequency of discrete traits and their relationship with sex and age. *The Anatomical Record.*
https://doi.org/10.1002/ar.24647

Williams, R., Errickson, D. and Taylor G. Mapping an archaeological site: Interpreting portable X-ray fluorescence (pXRF) soil analysis at Boroughgate, Skelton, UK. *Journal of Archaeological Science: Reports,* 38 (August), 103-109.
https://doi.org/10.1016/j.jasrep.2021.103109

Williams, R., Taylor, G., Orr, C. and Thompson, T. pXRF method development for elemental analysis of archaeological soil. *Archaeometry,* 62(6) pp. 1145-1163.