



# Two Worlds: Research Innovation & Commercial Success in Archaeology

Celebrating & Reflecting on 30 years of the Cambridge Archaeological Unit

D M McDonald Grants and Awards Fund

McDonald Institute for Archaeological Research



The CAU celebrated its 30th anniversary in 2021, and also appointed a new Director (Matthew Brudenell) replacing Christopher Evans. Thus, it is an opportune moment to reflect on and celebrate the Cambridge Archaeological Unit (hereafter CAU), take stock of what it has achieved over the last 30 years, and what it might achieve in the next 30. An application to the McDonald Institute for Archaeological Research grants and awards was made to hold a conference to celebrate the CAU. The application was successful, and as a result we are holding a two-day conference, where the main theme explores the CAU's impact on what, in the climate of its formation in the early '90s, was perceived as two worlds of archaeology: one world of research and another of commerce. How has the CAU navigated this situation, and where and how has it successfully brought these 'worlds' together? What may be learned from other examples of this bridging and, within forecast social and economic conditions, what future visions for archaeology may be possible for the next 30 years? How might the CAU, and other excavation units, take a lead in this? Bringing together members of the CAU's impressive alumni and colleagues, and collaborators, the two-day conference comprises four themed sessions (see below), as well as a retrospective, a panel discussion concerning the future of archaeology, and an exhibition highlighting the CAU's major projects by way of its expert and award-winning visualisation portfolio. Each session has a keynote speaker that offers a perspective on the session theme, with other speakers offering other views, with ensuing discussion. The conference audience includes alumni and current staff members of the CAU and the Department of Archaeology/McDonald Institute for Archaeological Research and, by invitation, leaders from the broader archaeological community.

The conference aims to both reflect upon and celebrate the CAU's 30-year relationship with the University's Department of Archaeology. At a broader view, it also aims to stimulate forward-thinking into the contribution that development-led or commercial archaeology has had and may have on 'primary research' since the onset of PPG16 (1990) and its various iterations since. The conference papers therefore outline the experiences and successes of the CAU and its partners with the generation of large data sets across expansive operational areas and the maximisation of the research potential of data more generally as well as to offer other regional, national or international perspectives. Participants offer reflections on the spirit of experimentation and innovation in the context of commercial pressure, and strategies towards successfully bridging the 'two worlds' of academe and commerce to mutual benefit, particularly in meeting the challenges of commitments to multi-stakeholder interests that lie at the heart of both developer- and grant-funded work. Furthermore, the conference participants also consider and respond to recent statements concerning archaeological 'value' and ways by which developer-funded archaeology, in particular, may enhance its resilience and sustainability into the future; e.g. British Academy's Reflections on Archaeology report (2017) and the Society of Antiquaries of London's The Future of Archaeology in England discussion paper (2019).

We hope you enjoy the conference! And if there's anything you want to ask, we'll be on hand during the event along with a small army of helpers.

Oscar Aldred & Vida Rajkovaca

# LOGISTICAL INFORMATION

#### Venue location

The location for the conference and anniversary celebrations is the Storey's Field Centre – see the map on the website which also has travel information for those coming by train, car, bus or bicycle (<u>https://www.storeysfieldcentre.org.uk/about/overview/</u>). In terms of parking, there is local parking which can be paid for, as well as a near-by park and ride. The venue is also a short 10min walk from the CAU's offices just off Storey's Way (34 A & B Storey's Way, Cambridge, CB3 0DT), or from those staying at Churchill college.

The address of the venue is:

Storey's Field Centre Eddington Avenue Cambridge CB3 1AA

#### Covid Safety

As Covid is still very much part of all of our lives at present, we would suggest – if possible – that you take a LFT test before attending the conference. And while in the building, moving through its shared parts, we recommend that you wear a face-mask. Our social events will be held outside though the areas are sheltered to some extent. The room layout will also be covid-secure to the extent that it can. But if you feel comfortable wearing a mask within the auditorium, then please do so.

#### Recording

It is planned that we will record the presentations, though not the discussion.

#### Social events

There are two planned social events. The first after the first day's proceedings, and a second, after the second day's proceedings. Both events will be held at the conference venue.

# PROGRAMME

# Friday 29th April 2022 (@Storey's Field Centre)

# Arrival and introduction

9.00 - 9.25	Arrive (with refreshments)
9.25 - 9.45	First introduction by Cyprian Broodbank
	Second introduction by Tamsin O'Connell
	Third introduction by Richard Bradley

## Session 1 – Methodology & Innovation

9.45 - 10.00	Gavin Lucas (Chair & keynote)
	The Mobile Laboratory – excavation and experiment
10.00 - 10.20	Mark Knight
	Confidence in Context – Refitting Time & Space
10.20 - 10.40	Chantal Conneller
	Hunting and gathering time
10.40 - 11.00	Tea/Coffee
11.00 - 11.20	Anwen Cooper
	What have archaeological 'big data' approaches done for developer funded archaeology?
11.20 - 11.40	Christopher Evans
	Failing better - Methodologies
11.40 - 12.00	Discussion
12.00 - 13.00	Lunch

Session 2 – Urban Archaeology

13.00 - 13.15	Rubina Raja (Chair & keynote)
	Urban archaeology: prospects and challenges
13.15 – 13.35	Sadie Watson
	Urban Archaeology: London developments in practice and principle
13.35 – 13.55	Craig Cessford
	The archaeology of medieval and later Cambridge: innovation and impact?
13.55 – 14.15	John Robb
	Health inequality in medieval Cambridge
14.15 - 14.35	Shahina Farid
	The Urban Neolithic at Çatalhöyük in Turkey – lessons learnt from stratigraphic excavation working in tandem with research analyses in the field
14.35 - 14.45	Discussion
14.45 – 15.00	Break

## CAU – A Retrospective

15.00 - 15.15	Kasia Gdaniec (Chair & keynote)
15.15 - 15.30	Marcus Brittain
15.30 - 15.45	Lesley McFadyen
15.45 - 16.00	Alison Dickens
16.00 - 16.15	'Open mic'

16.30 – 18.30 Wine reception, with Aromi Italian buffet

## Saturday 30th April 2022 (@Storey's Field Centre)

8.45 – 9.15 Arrive (with refreshments)

## Session 3 – Landscape Archaeologies

9.15 – 9.30 Chris Gosden (Chair & keynote)

	Landscape and the Commons
9.30 - 9.50	Mette Løvschal
	Heathland living and landscaping: autonomy and collective decision making in late prehistoric grazing regimes
9.50 - 10.10	Charly French
	Geoarchaeology and the CAU at 30
10.10 - 10.30	Jody Joy
	Trumpington and its environs: A personal exploration of landscape
10.30 - 10.50	Josh Pollard
	Dark matter: hunting Neolithic presence
10.50 - 11.10	Discussion

11.10 – 12.30 Tea/Coffee & Exhibition & Lunch

# Session 4 – Mediating Archaeology & Science

12.30 - 12.45	Marcos Martinón-Torres (Chair & keynote)
	Archaeological science, heritage science and development-led archaeology: boundaries and synergies
12.45 - 13.05	Matthew Collins
	Archaeological science in support of commercial archaeology. It's big, shiny and expensive with flashing lights, but is it of any use?
13.05 - 13.25	Thomas Booth
	Integrating Archaeology and Ancient DNA: Genetic ancestry and relatedness in Chalcolithic-Early Bronze Age Britain
13.25 - 13.45	Rachel Ballantyne
	Muddy science: Innovation, education, & the CAU
13.45 - 14.05	Martin Jones
	Landscapes of the ordinary
14.05 – 14.15	Discussion

14.15 – 14.30 Break

## Panel session – Summing up

14.30 - 14.40	Matt Brudenell (Chair)
14.40 - 14.50	Marie Louise Sorensen
14.50 - 15.00	Duncan Garrow
15.00 - 15.10	Cyprian Broodbank
15.10 - 15.20	Nicky Milner
15.20 – 16.00 16.00 – 17.00	Open discussion Exhibition & bar
17.00 - 21.00	Party at Storey's Field Centre (with Food Vans)

# **SESSION INFORMATION & ABSTRACTS**

#### Session 1 - Methodology & Innovation

The CAU has a long track record for innovation in archaeology. Such work, with critical reflection on methodologies, analysis and their presentation, has been a part of the development of the CAU over the last 30 years, while adding value to the quality of its delivery. It has developed innovative sampling strategies to operate across multiple scales; reviewed existing methods and research; produced new guidance on the mitigation impact on the burial of archaeological remains in situ; and has experimented with unique styles of publication and other forms of output. Yet, none of these innovations are decontextualized: whether in the field, the office, or part of narrative construction and delivery, they are done to address a specific research question, or portray and represent archaeology to a commercial advantage. One of the reasons why the CAU is successful in what it does is that it mitigates the failure of risk involved in innovation by thinking through the purpose and reasons for an approach within the framework of tried and tested methodologies. Innovation, in this way, advances the profession and creates a benchmark against which other archaeological work is measured. Part of the draw for the CAU's methodology and innovation strategy has been recognising that past practices need examining as much as opportunities identified for testing. In this session we will bring a cursory look at past and current practices seeing how they compare, and where the next possible opportunities might be, say, in archaeological science, inferential models, creative work and writing, or in the dirty business of fieldwork.

#### Gavin Lucas (Chair & keynote)

#### *The Mobile Laboratory – excavation and experiment*

Barker's oft-cited characterization of excavation as the unrepeatable experiment has led to much reflection in the discipline. In my short talk I want to consider the experimental dimensions of excavation in a creative rather than destructive sense and explore its relation to the interplay between recovery and discovery that occurs every time we come on site.

#### Mark Knight

#### *Confidence in Context – refitting time & space*

I intend to present three refitting projects: Kilverstone (pottery & flint), Etton (pottery & flint) and Must Farm (pottery and animal bone) and show how a what appears to be an ostensibly spatial exercise (refitting space) is also a fine-grained temporal exercise (refitting time), and through both describe (refit, restore) past process or movement – the tempo and rhythm of past lives. In my 20 minutes I'd like to share the experience of refitting pots, stone tools, and animal parts – relate the 'inverted' percussion, the rhythmic, metronomic click, click of things being refitted (the reverse of the snap or crack of the pot, flint or bone being broken) and with this, the idea that an archaeological assemblage can have an intrinsic cadence.

Chantal Conneller

#### Hunting and gathering time

The Mesolithic has often been treated as a period without history, where the only significant change is from an early Mesolithic characterised by highly mobile big game hunters to more sedentary marine-focused late Mesolithic. This presentation presents the results of a new British Academy funded project which has aimed, by contrast, to understand temporal change over this period on a centennial scale. This has involved collating all existing radiocarbon dates for the period and commissioning new dates for certain key sites, as well as constructing a new typochronological framework. At the heart of this project is a study of lithics and of landscape, both of which were stimulated by my time at the CAU. The patterns that have emerged are illuminating. In the early Mesolithic, the landscape was rapidly settled and given meaning by Mesolithic groups. A new Middle Mesolithic phase emerges, characterised by new modes of engagement with the landscape including the digging of pits and erection of large buildings and monuments. Similarly, significant temporal and regional differences can be seen in the late Mesolithic, while the last millennium of the period is one of dynamic change and contact with the continent.

#### Anwen Cooper

#### What have archaeological 'big data' approaches done for developer-funded archaeology?

This paper discusses the development of 'big data' approaches in archaeology using research on the ERC-funded English landscape and Identities project (University of Oxford, 2012-2017) as a case study. It explores the interpretative impact of 'big data' approaches thus far, in particular their implications for developer-funded research. In this context, it considers the CAU's future potential role in contributing to broad brush widescale archaeological narratives, and the importance of creating such narratives as a contemporary counterpoint and a challenge to the intimacies of site and regionally-focused accounts.

#### Christopher Evans

#### Failing Better – Methodologies

Now with a much fuller appreciation of past settlement densities and the accumulative imprint of land-use 'activity', this contribution reviews facets of the Unit's and the field's methodologies implemented over the past 30 years. Its abiding premise is that we would do better to envisage excavation as an experiment (rather than a standard professional routine). Such an ethos, while admittedly carrying the risk of 'approach failure', would put methodological innovation at the core of fieldwork practice, as there are always alternative means to tackle 'the problem' and tease out more.

#### Session 2 - Urban Archaeology

Urban archaeology has been a constant thread running through the CAU's 30 year history. Principally focused on Romano-British, medieval and later Cambridge, it has also involved significant work in other urban centres such as Ely. Locally this represented a significant change, as prior to 1990 the medieval and later archaeology of Cambridge had received relatively little attention. Practical factors mean that while development-led urban archaeology in Britain is now a commonplace, research-led urban archaeology is a rarity and the gap between the developer-funded and academic spheres is arguably wider than in most other areas. The period since 1990 has also been marked by a shift in emphasis; from a focus on larger urban centres with excavations undertaken by organizations who almost exclusively work on urban sites, to a wider range of sites including smaller urban centres with the work often being undertaken by organizations that predominantly work on rural sites. The CAU's work is typical of this, but it can be argued that the methodological and theoretical implications of this transition have received little explicit discussion. One distinctive element of post-medieval and particularly Modern urban archaeology is that it is part of a truly global historical archaeology, in a way that is unparalleled in earlier periods. Yet, while much recent material culture from urban sites is global in character there are some distinctive local elements; in Cambridge these include distinctive collegiate material but there are also ceramic and glass containers marked with the names of local suppliers that have parallels in other urban centres. Medieval and later urban archaeology is also unique in terms of the wealth of directly relevant textual, cartographic and other sources that exist. This session brings together urban archaeologists of all kinds plus other interested groups, to examine the interface between development-led and research-led urban archaeology, as well as non-traditional and earlier 'urban' environments, to discuss the innovation and directions that urban archaeology will take in the next 30 years, and where the CAU might fit in its advancement.

#### Rubina Raja (Chair & keynote)

#### Urban archaeology: prospects and challenges

This short talk will focus on new perspectives and agendas in urban archaeology as this field has been rapidly developing over the last years. In 2019, the *Journal of Urban Archaeology* was launched with a set of agenda papers and thematic volumes filling the first five issues. Taking my point of departure in the journal's agenda, the idea to which sprung from the research done at *Centre for Urban Network Evolutions* since 2015, I will address the notion of an urban archaeology which is intended to further dialogues between various fields of archaeology - cross-regionally and diachronically.

#### Sadie Watson

#### Urban Archaeology: London developments in practice and principle

Sadie Watson has spent more than 20 years excavating the City of London for MOLA. During that time the profession had evolved but uncertainties remain as how we can best ensure that our work is responding to issues of international urban life. Sadie will outline the challenges and opportunities offered by this very specific area of practice, which has become increasingly

focussed on how archaeology can respond to engineering and logistical issues. Sadie was the Field Archaeologist in Residence at the McDonald Institute for Archaeological Research in 2017, and during that time gained an appreciation of the value of combining academic research with highly technical field practice. She will propose a series of ideas whereby we can embed both academic research and public participation into the contracting sphere despite the commercial pressures on time and budget. These draw on Sadie's current Fellowship research that combines these fundamental aspects of archaeology with the intention of maximising the value from development-led work.

#### Craig Cessford

#### The archaeology of medieval and later Cambridge: innovation and impact?

By many metrics (number of investigations, person days on site, cubic volume of deposits excavated) the medieval and later archaeology of the town of Cambridge represents the largest and most long running 'site' investigated by the Cambridge Archaeological Unit. This work, spanning over thirty years, has revolutionised our understanding of the origins, development and nature of the town. While it would be tempting to present a 'greatest hits' summary of discoveries, this paper will instead focus on how innovative the CAU investigations of Cambridge have been and the broader academic significance of the work. Particular attention will be paid to how the investigations have been influenced by the CAU being an organisation that primarily undertakes prehistoric and Romano-British rural archaeology, rather than being one specialising primarily on urban archaeology. In terms of significance, it will be argued that while some important discoveries would have been recognised regardless of which archaeological contractor undertook the work, in a number of instances the specific ethos of the CAU has directly contributed to their academic importance.

#### John Robb

#### Health inequality is an important issue in the modern world; was it in the past too?

This paper uses findings from the "After the Plague" project to discuss health inequality in a late medieval town. Medieval society was certainly characterised by deep social hierarchies. However, only some of these translated into health inequality, in part because better-off people lacked the ability to buffer themselves against many forms of ill-health. In medieval Cambridge, for instance, health inequality was present, but it is noticeable primarily not in the poor generally but in a subclass of the poor who were subject to chronic deprivation, high levels of disease and earlier death.

#### Shahina Farid

# *The Urban Neolithic at Çatalhöyük in Turkey – lessons learnt from stratigraphic excavation working in tandem with research analyses in the field*

Since excavations in the 1960s, the Neolithic site of Çatalhöyük in Turkey has been world famous for the size and preservation of its continuously occupied settlement, comprising

densely packed mudbrick houses spanning about 1,400 years. The array of rich evidence about daily life, including elaborate wall paintings and relief sculptures, in this period of transition to settled communities some 9000 years ago, continues to capture our imagination. For about two and half decades, from the mid-1990s, the site also enjoyed a high-profile status under the direction of the then University of Cambridge Professor, Ian Hodder, also co-founder of the Cambridge Archaeological Unit. With a vision to imbed an array of scientific techniques and analytical tools into the excavation practice, Hodder led an international team where excavation methodologies, developed on deeply stratified British urban sites, were adopted and adapted to a heavily led research agenda within a theoretical framework.

#### Session 3 - Landscape Archaeologies

Over the last 30 years, landscape archaeology has emerged through development-led archaeology as a means of interpreting the wider connections of the 'site' beyond the limits of the excavation area. This might involve making connections between the environmental record recovered during excavation with the wider, landscape-scale reconstructions, or identifying production centres and consumption points in an economic network, or in looking for the 'meaning' of being in a landscape from the point of view of past people. In other examples of development-led work, landscape archaeology has been used as a technique, as opposed to an interpretative strategy, to assess vast areas of land; as an evaluation approach to 'target' specific sites for more detailed examination, or to reconstruct past landscape settings, e.g. the 25 year Great Ouse Valley landscape excavations. But with increasing sophistication in the dating of extensive 'landscape' features (say using OSL) and computer Big Data analytics, excavation has potentially much more of a role in adding to the debate in landscape archaeology as technique and interpretative strategy. This session brings together landscape archaeologists of all kinds to examine the interface between development-led and research-led landscape archaeology, to discuss the innovation and directions that it might take in the next 30 years, and where the CAU might fit in its advancement.

#### Chris Gosden (Chair & keynote)

Landscape and the Commons

#### Mette Løvschal

# *Heathland living and landscaping: autonomy and collective decision making in late prehistoric grazing regimes*

Heathlands are partly connected relics of a specific type of cultural landscape, once thriving in Norway and all along the North Sea coastlines from Norway to Portugal. Their earliest use by pastoral communities is somewhat patchy, but in some regions, heathlands appear to have survived or bounced back over the last 5ka years. On the one hand, heathland areas appear to have functioned as low-maintenance outfields and pastures, affording winter grazing and resource extraction. On the other, primed by historical accounts, it is suggested heathlands were being collectively governed and deeply integrated in wider agro-pastoral and cultural practices. What emerges from their investigation are intriguing questions on the social and ecological dynamics underlying their deep time and widespread survival. This paper looks into the archaeological evidence of the late prehistoric heathland regimes with particular focus on practices that indicate autonomy versus collective decision-making. Moreover, it will also discuss how questions of heathland regime landscapes. The paper originates from the ERC-funded ANTHEA project 'Anthropogenic Heathlands: The Social Organization of Super-Resilient Past Human Ecosystems'.

Charly French

#### Geoarchaeology and the CAU at 30

Being a geoarchaeologist in Cambridgeshire from the 1970s to now, I will give some reflections on the changing discipline, expectations, and better and poorer practice of my own along the way.

#### Jody Joy

#### Trumpington and its environs: A personal exploration of landscape

Despite being quite big spaces, landscapes can also be very personal, encountered through a lens of knowledge and experience. I grew up in south Cambridgeshire and its flat agricultural landscape, the stunted trees and, most of all, the sleepy River Cam, are a part of my own identity. More recently, I have been quite ill. Taking short walks in Trumpington Meadows Country Park has been a crucial part of my recovery. In this paper I will outline some of my own personal encounters with the rich history, geography, and wildlife around Trumpington Meadows. Today the landscape is dominated by building works. Eighty years ago, it was the location of a World War II prisoner of war camp. Excavations by the CAU have also uncovered a large Iron Age settlement and an early medieval bed burial, but many people walking their dogs or playing football in the park are completely oblivious to this rich history mainly because nothing easily visible remains of these past events. What I hope to demonstrate is despite the fact there is little visible evidence of past activities, spaces like Trumpington Meadows are important heritage spaces. When the history of a landscape is combined with experiences of nature (I see these as intertwined) it can enhance well-being, with archaeology and nature combining to form 'curative' spaces.

#### Josh Pollard

#### Dark matter: hunting Neolithic presence

Attention to the gauging of the 'totalities' of record and past human landscape presence via recognition of the value of surface as well as sub-surface archaeology has been a key feature of the 'Evans approach' to the archaeology of the Neolithic and Early Bronze Age (EBA). Acknowledging that the soil holds a considerable and significant component of the record of past activity has contributed much to understanding occupation sequences and the fluctuating density of human presence, and so pattern and population. Drawing upon the results of developer-led work undertaken by the CAU, and by other units, and research-led fieldwork in the Avebury region, reflection is offered on how far we have come in understanding Neolithic and EBA landscape occupation and demography. Consideration is given, too, to what remains missing and misunderstood – the archaeological dark matter of 'partial pasts'.

#### Session 4 - Mediating science and archaeology session

Archaeological science transforms how we understand the past, such as in dietary habits, lifehistories, changing environments, and material culture; how we engage with those themes is also mediated through the resources that we employ (think here of Kristian Kristiansen's paradigm shifts, drawing on Thomas Kuhn's structure of scientific revolutions). Helping us to explore and build knowledge on some of the biggest issues we face as a human race, archaeological science is inseparable from archaeological inquiry. Traversing the line between the humanities and hard sciences, the challenge is to steer archaeological research towards a practice that is both forethinking and grounded in primary archaeological methods.

How may we achieve greater integration of science (as both a practice within and a driver of research) in development-led archaeology? How may we judge the appropriateness of differing strands of science to address relevant archaeological inquiries? And may we ask questions of science itself through critical engagement, rather than 'merely' accepting science-grounded propositions. How may we bridge the dichotomy of archaeological science as both an interpretative tool and an outcome of discursive engagements without compromising the significance of innovation and original archaeological questions? And how may we open up archives and legacy projects to science-led agendas, whilst truly taking into account all practical, ethical, legal and intellectual implications? This session aims to show where or how the two worlds should indeed be approached as one, and seeks to explore new or potential dynamics of the collaborative spirit.

#### Marcos Martinon-Torres (Chair & keynote)

# Archaeological science, heritage science and development-led archaeology: boundaries and synergies

Over its 30-year history, the CAU has amply demonstrated that development-led archaeology is not at odds with cutting-edge research, and that commercial archaeology and academic research can work in synergy. This certainly applies to archaeological science in particular, in spite of the annoying fact that both archaeological scientists and commercial archaeologists are still sometimes regarded as 'service providers' without research agendas of their own. At the same time, heritage science has continued to gain recognition and support as a cognate discipline involving scientific analyses of past materials, but meaningful interactions among development-led archaeology, archaeological science and heritage science remain rather limited. In this talk, I will try to explore the boundaries among these various fields with a view to find some bridges to cross them for the benefit of all.

#### Matthew Collins

# Archaeological science in support of commercial archaeology. It's big, shiny and expensive with flashing lights, but is it of any use?

How and when should innovative new scientific methods be adopted in commercial archaeology? Science 'revolutions' in archaeology are born of new technological advances and we are both thrust forward and also limited by them. A species can be identified using

proteomics from traces of collagen left on a tube used to prepare a sample for stable isotope analysis. Proteomics pushes towards single cell analysis and thus increased sensitivity, while stable isotope analysis is a routine method in food science and manufacture where sample size has not been a limiting factor. Limited innovation brings reliability and stability to instrumental analysis which leads to a market with agreed costs and standards for sampling. Conversely research funding encourages innovation over confirmatory science. This innovation tends to move quickly, shape shifting and seeking new targets making it almost impossible to form part of a planning process. How do we recognise when a new technology is ready for widespread application and how might the needs of units be better articulated to research scientists? From my standpoint as someone who has tried (and often failed) to make these connections work (outside of large funded projects), I will pose some questions, highlight examples, offer few solutions, but hopefully stimulate debate.

#### Thomas Booth

#### Integrating Archaeology and Ancient DNA: Genetic ancestry and relatedness in Chalcolithic-Early Bronze Age Britain

Recent archaeogenetics studies of Neolithic, Chalcolithic and Bronze Age human genomes from across Europe have identified major transformations of ancestry which provide compelling evidence that some cultural changes we see in the archaeological record were likely influenced by migrations of people bringing novel things and practices. In the British Chalcolithic, movements of people across the Channel over several hundred years, coincident with the development of cultures related to the Bell Beaker phenomenon eventually result in a 90% replacement of local ancestry. In the media and, to some extent, the archaeological literature, these results have been framed in ways that have resurrected phantoms of violent male invaders 'wiping out' local populations. These narratives are problematic on several levels, but most fundamentally because they are not supportable by the DNA evidence. At best alternative explanations are equally valid, and at worst the archaeogenetic evidence directly contradicts aspects of these ideas. Here I will discuss some of the narratives that have emerged from the archaeogenetic analysis of Chalcolithic and Bronze Age human genomes from Britain, highlighting the boundaries between data and interpretation, but also where prominent interpretations are in direct conflict with genetics and archaeological evidence. I will discuss alternative and perhaps more plausible explanations for the archaeogenetic evidence in the context of the archaeological record. I will go on to discuss less prominent archaeogenetic results which provide new insights into Bronze Age societies in Britain on regional and local scales, contextualising broader processes of population change, for instance in the webs of biological kinship amongst individuals buried in Wessex monuments. Hopefully this should help to show a way forward for better integration of archaeological and archaeogenetic data in the British Bronze Age.

Rachel Ballantyne

Muddy science: Innovation, education, and the CAU

The current vast scale of developer-funded excavations in Britain forms an incredibly important living laboratory for the practice of archaeological science. Furthermore, the CAU as a contracting unit at a world-leading academic institution, has for 30 years, led in the application of the latest scientific methods for excavated materials.

This paper highlights the people behind the scientific achievements of the CAU and, in doing so, the profoundly symbiotic relationships between archaeological practice, education, and scientific research. This is a lived, human–environmental history.

In the context of 'Mediating Archaeology and Science', I argue that archaeology is inherently scientific, and that one of the greatest challenges for our profession continues to be the acceptance of this tenet. We must recognise and strengthen the 'muddy science' of excavations as an essential step in the realisation of innovative post-excavation laboratory analyses and interpretations.

#### Martin Jones

#### Landscapes of the ordinary

I would contend that, rather than being brought and applied to rescue/contract archaeology, scientific enquiry has repeatedly emerged organically from it. Underlying this contention is the quite sharp transition from the 'type-site/ master sequence' approach that dominated the prerescue era, to an episode characterised by arbitrary, developer-led swathes of landscape peppered with remnants of the ordinary, the ephemeral, and the materially modest. These landscapes of the ordinary have been important drivers of the way we do archaeological science today, and continue to form the basis of fruitful collaboration.

#### CAU – A Retrospective – Reflections on the CAU

This session brings a bit of lightness to the conference, with participants reflecting on the CAU, but also, perhaps, asking to what extent the CAU has been inspirational and transformative in its practices for the wider discipline, and for the industry at large.

Speakers include: Kasia Gdaniec Marcus Brittain Lesley McFadyen Alison Dickens

#### Panel session – Summing up

Taking the themes that have been addressed through the two-day conference, five panelists respond and reflect on what they have heard, offering perspectives and drawing in the discussion on these between them. The challenge is to highlight the possible future(s) of archaeology in light of the discussion.

The panellist are: Matt Brudenell Marie Louise Sorensen Duncan Garrow Cyprian Broodbank Nicky Milner

#### Exhibition

An exhibition of the CAU's illustration and graphic work, and photography, will form a public display. Furthermore, there will be a 'looped' series of photographs of CAU staff from Dave Webb's catalogue. The exhibition's intention is to explore the distinctive 'style' of archaeological representation that is embedded in the CAU's publications, and to raise an awareness of CAU's 30 years of professional excellence that has helped to shape the unique character and understanding of the archaeology of the Cambridge region and beyond.