

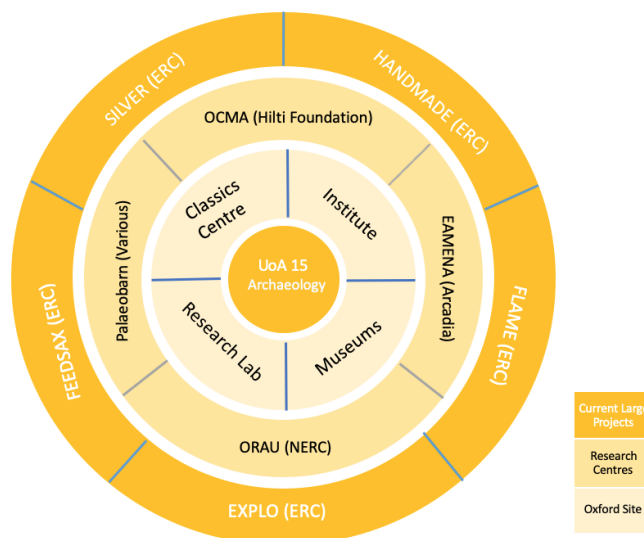
Institution: University of Oxford
Unit of Assessment: 15 (Archaeology)
<p>1. Unit context, structure, research and impact strategy</p> <p><u>1.1 Unit Context</u></p> <p>Our unit's central objective is to create world-leading research into deep and contemporary histories across the globe by combining insights from the natural, social and historical sciences. Archaeological scholarship in Oxford encompasses the School of Archaeology (the largest element), college posts and archaeologists working in museums. Our strength is in the diversity and breadth of our work, and we appoint researchers who combine science, social science and humanities approaches, as demonstrated in our most recent appointments (Hein, Malafouris and Styring) and Chirikure's British Academy Global Professorship. Our research is inherently interdisciplinary, working across conventional boundaries to create a broad sense of the human past.</p> <p>Central to our ethos is a research apprenticeship approach supporting researchers at all levels, from earliest career to retirement, with mentoring and collaborations between senior and junior staff. Our major grant successes at <u>all</u> career stages are a clear illustration of this commitment (section 1.5). We place particular emphasis on the autonomy of colleagues to pursue research projects, alone or in collaboration with others internally and across the globe, and provide them with the optimal conditions of support and inclusivity in which their research can flourish.</p> <p>Our research income has grown from £5.8m (RAE 2008) to £10.6m (REF2014) and to £24.6m (REF2021), significant proportions of which come from highly competitive sources such as UKRI and Horizon 2020. Research funds are a key indicator of success, but it is how we deploy resources and influence the field that matters most. Beyond our track record of career development, other indicators of research achievement include >1500 publications since 2014, many of which are frequently cited; our staff (e.g. Ramsey) have some of the highest h-indices in the discipline.</p> <p>Looking to the future, resilience is vital in an increasingly challenging funding environment shaped by Brexit and the pandemic. A crucial aim is to maintain or increase posts and activity in the near future. We have secured considerable philanthropic funding (£5m since REF2014). We will continue this and further explore emerging UKRI schemes, Wellcome priorities and Leverhulme programme grants, alongside Horizon Europe and US foundations. We are also putting efforts into enhancing funding for our graduate students (currently 188 FTE), a vital aspect of our research ecology.</p> <p>The open science agenda is crucial to our work. We have created software that is widely used (e.g. OxCal), compiled and curated databases (e.g. Celtic Coin Index, Oxford Roman Economy Project), fostered citizen science projects such as Archeox in East Oxford and conducted research informing policy, ranging from the response of the Japanese government to volcanic eruptions, to the UK government's heritage science agenda and US remote-sensing regulations. The best research is not just satisfying on an individual level; it is socially relevant and meaningful.</p>

1.2 Unit Structure

Oxford’s UoA15 (Fig. 1) is centred in the School of Archaeology, which has three research bases: the Research Laboratory for Archaeology and the History of Art, the Institute of Archaeology and the Classics Centre (36 individuals in total). We also include four curators in the Ashmolean and two members of staff who hold lecturer/curator positions with the Ashmolean and Pitt Rivers Museum (PRM), respectively, with one Early Career Researcher (ECR) in the PRM. In addition, we include six researchers from Oxford colleges and Continuing Education. The distribution of our UoA across multiple sites, departments (Archaeology, Classics) and institutions (including colleges and museums) present opportunities in terms of reach, facilities and audience, while governance structures (section 1.4), plus a vibrant range of 16 weekly seminar series, promote cohesion. The move since REF2014 to new School headquarters (£1.6m investment), accommodating research staff formerly based in the Research Lab and Institute, has also facilitated collaborative research.

Four of our research centres are externally funded in whole or part: Endangered Archaeology in the Middle East and North Africa (EAMENA), the Oxford Centre for Maritime Archaeology (OCMA), the Oxford Radiocarbon Accelerator Unit (ORAU) and the Palaeogenomics and Bioarchaeology Research Network (PalaeoBARN). All members of centres are members of the School. EAMENA and PalaeoBARN represent new initiatives since REF2014, tackling major topics engaging archaeologists worldwide: endangered heritage and the palaeogenomic revolution (Fig. 1).

a.



b.

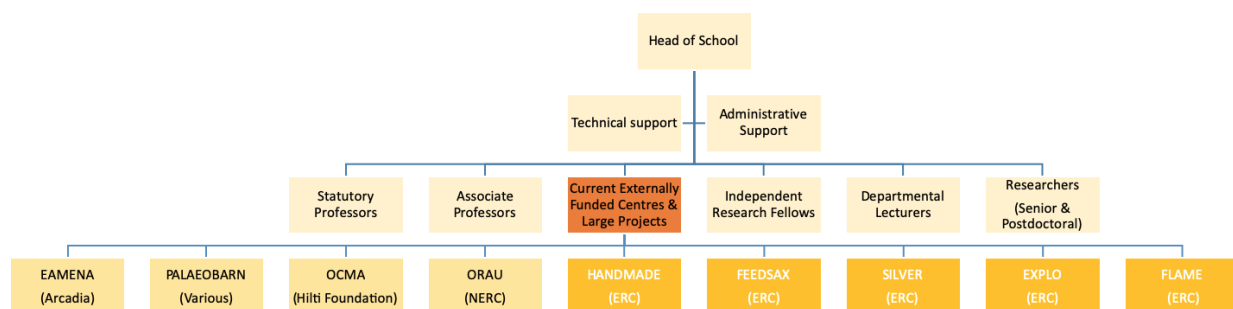


Figure 1. The structure of a. the UoA, b. the School of Archaeology, its largest component

1.3 Directions and Strategy for Research and Impact

Three broad aims have guided our research and impact strategy from REF2014 to REF2021 and beyond.

Aim 1 – To shape the international research agenda by creating new scientific and theoretical approaches in archaeology as well as developing existing ones. We address crucial archaeological problems – from human origins to technological ‘revolutions’ and contemporary dilemmas surrounding inequality and identity – by combining scientific, social science and historical perspectives within a critical ethos, questioning what it means to be human in the deep and most recent pasts. Examples of innovation include the development of compound-specific methods to extend the reliable timespan of radiocarbon dating, and cognitive theory linking mind, body and materials. Fostering national and international collaborations enhancing Archaeology at Oxford as a research hub is therefore crucial. Evidence of this is the flourishing network described by our research projects (below, Fig. 3) and our expanding community of research associates and academic visitors.

Aim 2 – To recruit and retain the very best researchers across the range of work undertaken in Archaeology at Oxford. Our publication profile and success in securing research funding, from early career to senior levels, as well as international recognition through prizes and distinctions (e.g. a Philip Leverhulme Prize to Kershaw, multiple Shanghai World Archaeological Forum awards), reflect this strategy. Similarly, we aim to attract the best students nationally and internationally and to foster an inclusive research culture in which young researchers thrive. This is evidenced by our students’ success in winning research funding, publishing high quality research (>300 publications over the period) and launching productive careers within academia and beyond. For example, doctoral student Lorena Becerra Valdivia led a 2020 *Nature* paper with senior staff (Higham) on the time depth of human occupation in the Americas. Increasing scholarship funding to retain the best students is a strategic objective.

Aim 3 – To develop a research commons, making our data, discussions and software available to all, following a philosophy of open science. OxCal and the recently launched version of IntCal (led by Ramsey) exemplify this approach: going beyond open access by making not only our outputs but also fundamental resources (major datasets and software) publicly available. This initiative enables the reproducibility of research, so that the wider research community can both scrutinise and build on our work, enhancing its integrity and our role as a research hub. Thus, projects build open databases, such as Haystack, a new platform for investigating medieval English agriculture created by the FeedSax project (PI Hamerow). We also aim to promote a broad community that includes government bodies, NGOs, citizen scientists and academics across the world. Commitment to a research commons not only informs our impact case studies; it permeates all areas of our research activity. Thus, for example, the EngLald and AgricUrb projects have yielded new resources to inform planning policy and farming practice, respectively, while collaborative work between the PRM and Refugee Studies Centre (led by Hicks), and a current British Academy Fellowship (Kiddey), informs policies on shelter and displacement.

Key to achieving each of these aims is our research apprenticeship approach (section 2.1), anchored in our graduate and postdoctoral researcher community. Oxford’s School of Archaeology has both one of the largest graduate schools in the discipline internationally (currently 137 doctoral and 51 masters students) and one of the biggest postdoctoral

communities, many of whom go on to work across the globe. This includes, for example, three ERC Starting Grants incubated in our UoA and taken elsewhere to secure academic posts. Thus, we play a crucial role in sustaining the discipline worldwide. Of 98 postdoctoral researchers since 2014, just over half (59) have been attached to large research projects, working as part of a team and interacting with more senior staff, while others have held independent fellowships and are mentored by core staff.

Impact and engagement are central to both individual projects and across the UoA, as highlighted in 'Aim 3' above. Our impact case studies illustrate the practice and breadth of this work, ranging from UK citizen science (Archeox, Hillforts) to engagement with foreign government policy and human rights work (EAMENA) to public understanding of chronology and volcanism in Japan (Suigetsu). The impetus for relationships beyond academia comes from all areas of the UoA. We are developing novel methods to engage with people and organisations outside universities – from museum visitors to organic farmers – and we speak to a range of governments across the world on issues including cultural heritage, environmental change and migration. Researchers in the University's museums and Continuing Education, for example, pursue this engagement as a core part of their work. ECRs lead the way in seizing opportunities for public engagement, such as British Academy Fellow Whitlam's 'Farming: the first 12,000 years' trail, linking the PRM and the Museum of Rural Life in Reading and bringing in partners outside the heritage sector (the Oxford Food Bank and Good Food Oxford). British Academy Fellow Kiddey's work has engaged homeless people in Bristol with archaeological techniques to build novel maps of the city, using mapping, excavation and analysis to develop a community that responds to the interests of homeless participants. Through our significant cluster of researchers working in Africa we are seeking to coordinate research for public benefit across the continent. For instance, Chirikure's work at Great Zimbabwe contributes to our focus in southern Africa, where Mitchell's work in Lesotho has promoted local discussions on heritage in the context of threats from dam construction. Locally, we are strengthening links with Oxford Archaeology, already well-developed through our joint fieldwork at Dorchester-on-Thames, linking academic and developer-funded archaeology.

ECRs and recently appointed staff feature prominently in our return (12/52 FTE, 23%), many being represented by two or more publications, and in our impact case studies. Four ECRs have received Knowledge Exchange Fellowships and one acts as a University Public Engagement Research (PER) Leader, sitting on our School Committee and working with the communications officer to develop online resources. During the pandemic these have included a new series of podcasts on crucial issues of archaeology and heritage. We have systematically sought strategic internal support from the University's KE Seed Fund, ESRC impact acceleration fund and PER funds (c. £60,000 since REF2014).

Complementary research and impact take place through five researchers who work in the Ashmolean and PRM. The Head of School (HoS) in Archaeology also sits on the Ashmolean's Board and Hamerow on the PRM's Board, of which Gosden was chair through most of REF period, while Pollard is a Visitor at the History of Science Museum. These links across the UoA are vital for information flow, informed decision-making and impact. A significant number of exhibitions have attracted many visitors. For example, 'Last supper in Pompeii', curated by Roberts and involving several ECRs, was one of the Ashmolean's most popular exhibitions ever, attracting 88,000 visitors, while 'Discovering Tutankamun' (curated by McNamara at the Ashmolean) attracted over 43,000 and 'Lande' (curated by Hicks at the PRM) over 41,000.

1.4 Overseeing and Implementing the Strategy

A key question for our research is: how do we best initiate and operationalise new ideas? Answers range from material engagement in the field, museums and labs, to wrestling with broader theoretical issues and data analysis, to tea room (and now Teams) chats with colleagues. Equally crucial are workable structures of administration and organisation, outlined below.

Oxford's archaeological research is overseen by the School Committee, our collective decision-making body, with representatives from the broader archaeological community at Oxford. The School Committee holds regular Research Away Days for researchers at all levels to discuss strategy, enabling individuals to inform colleagues about new initiatives and directions in their own research, and fostering new collaborations. The Committee is supported by a smaller School Board focussed on strategic planning, including staffing, infrastructure and major research initiatives. During the REF period, for example, the Committee oversaw the purchase of a new accelerator for radiocarbon dating, the repurposing of genetics labs for PalaeoBARN, office and IT facilities for EAMENA and the refurbishment of two buildings new to Archaeology for teaching and research.

The HoS takes overall responsibility for supporting research, including annual individual meetings with all staff and oversight of grant applications. Generating funding is crucial to the sustainability of our research. Created since REF2014, the roles of academic research facilitator (Larson) and research support officer (Morley) enable effective sharing of information on grants and initiatives, provision of feedback to applicants, mentoring of postdoctoral researchers and support for existing grants. The School Finance Manager (Hick) constructs budgets, the ICT Manager (Worth) advises on computer hardware and software and relevant lab heads advise on equipment and analytical workflow. Research activities are further supported by 12 technicians and a newly created Research Fellow post in Spatial Archaeology (Pouncett). The Social Sciences Division provides further research and impact support (nine posts), including a shared dedicated research impact officer (Richards). The research support team led by the HoS ensures that we rigorously apply the framework set by the University Research Ethics Committee and the Code of Practice for Academic Integrity in Research in all of our activities. We also uphold the principles of the Concordat to Support the Career Development of Researchers.

In the Graduate Studies Committee we discuss graduate research with student representatives and oversee our thriving postgraduate community. To enhance research support for graduate students since REF2014, the role of Director of Graduate Studies has been split between Archaeology/Archaeological Science and Classical Archaeology, and a new academic role of postgraduate taught course coordinator created. The latter is supported by a dedicated administrator. Archaeology's graduate students run an annual conference on a major theme, with School support, and draw participants from across the UK. Current doctoral student Tom Maltas notes he has benefitted from 'the many seminars and interactions with other graduate students in Oxford and beyond, stimulating new ideas and avenues for my own research'.

1.5 REF2014 to REF2021

We have fully achieved the four research aims outlined in REF2014. First, we have made strategic appointments in palaeogenetics (Greger Larson, director of PalaeoBARN) and in the archaeology of China (Anke Hein, Peter Moores Associate Professor in Chinese Archaeology),

the latter building on momentum from the Oxford Centre for Asian Archaeology and Culture. Second, increased internal and external funding has enabled us to expand our community of researchers (Fig. 2) and to develop our KE and impact strategy, engaging with the heritage industry, museums, governments, migrants and others across the globe (Fig. 3). Third, we have enhanced financial support for our graduate students, 32% of whom now receive internal funding, up from 25% in REF2014. Fourth, we have successfully developed interdisciplinary links with museums and departments in Oxford and beyond, building a wide-ranging cross-disciplinary, global network (Fig. 3). Our interdisciplinary research evolves locally in research centres such as ORAU (with Earth Sciences and Physics) and PalaeoBARN (Zoology), as well as through longstanding links with Classics, History and Anthropology, leading to joint appointments (most recently Clack, with Anthropology) and a vibrant termly schedule of 16 seminar series, each with a weekly seminar.

	RAE2008	REF2014	REF2021
Cat A staff (FTE)	35.5	33.3	48.15
Cat A early career researchers	8	6	6
Externally funded research staff	10	23	38
PhD degrees awarded (av per year)	11	18	23
PhD degrees awarded (total)	68	109	159
Research income (whole period)	£5.8m	£10.6m	£24.6m
Research income (av per year)	£1m	£1.8m	£3.5m

Figure 2. Strategic growth since RAE2008

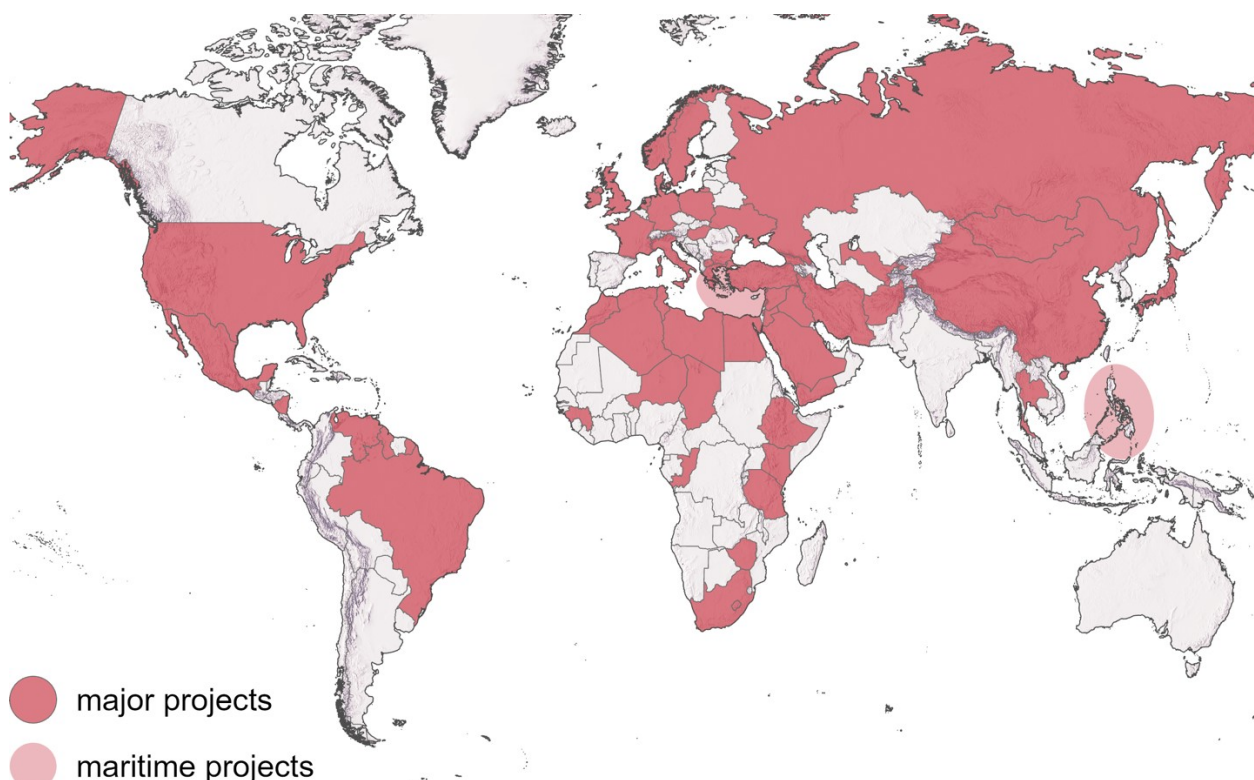


Figure 3. Map charting major research projects and collaborations

Research streams

We divide our research into four streams, each with its own direction and dynamic, and all overlapping in productive ways. Figure 4 shows the centres of gravity of these streams based on

outputs and area of the UoA. Publications in our submission take all forms, with 82 journal articles, 26 single-authored and edited books and 14 book chapters. Many of the books relate to the ecological and material relations themes.

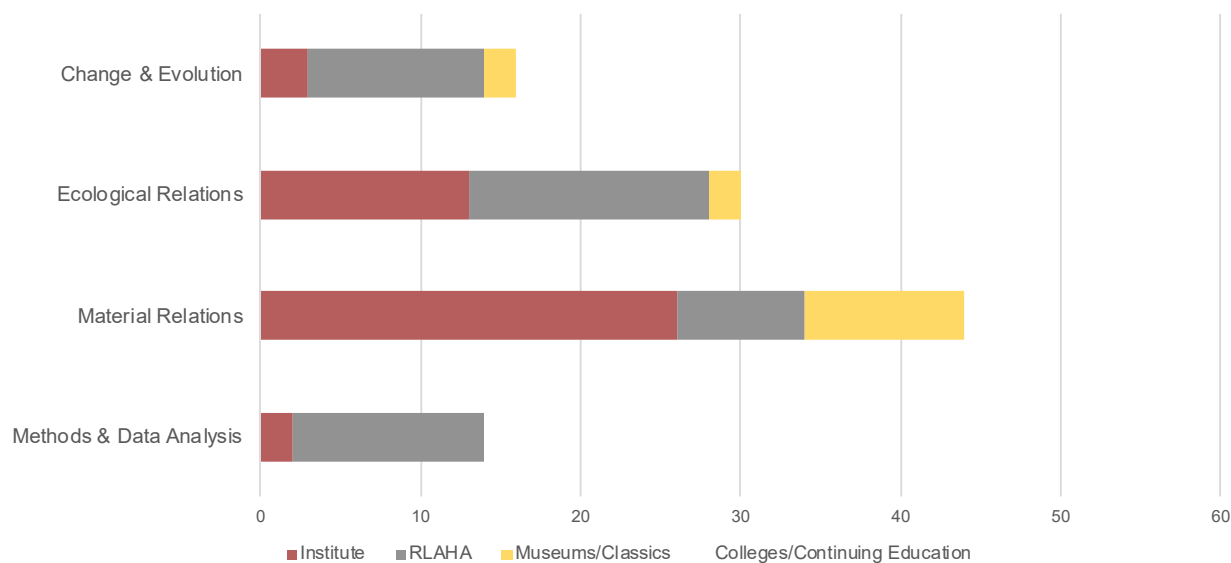


Figure 4. Returned outputs by research theme and research base

The details of each stream are as follows.

1. Processes of Change and Evolution: Supported by long-term investment in hardware and software concerning dating, isotopes and now genetics, we have contributed to rethinking the long-term history of hominin species in Africa and beyond, fostered too by new fieldwork discoveries. The ERC-funded PalaeoChron project (Higham) has been key to recognizing and dating the existence of Denisovans and the temporal overlap between Neanderthals and modern humans across Eurasia. Isotopic work by Lee-Thorp in southern and eastern Africa and Barton's excavations through the Morocco Caves project and on North African cemeteries have provided new detail on early hominin diets from the Early Stone Age, the first use of personal ornaments and forms of Middle Stone Age art and genetic evidence of human movements across North Africa, all leading to major publications (e.g. Barton's monograph on the Tatoralt excavations, Morocco). Work on chronology within the School has fostered a well-developed interest in the relationship between long-term continuous change and episodic, large-scale events, like major volcanic eruptions. Research led by Smith and Ramsey analysed varve sequences in Lake Suigetsu, Japan to extend radiocarbon calibration, while also dating eruptions to understand their impact. The ERC UnDEAD project and NERC research on livestock evolution (Larson) demonstrate that animal domestication may never have resulted from direct human intention, but rather from varied forms of symbiosis. Together, initiatives within this theme illustrate how human evolution in its broadest sense shaped and was shaped by other species and the landscape.

2. Ecological Relations: The UoA has invested in the development of both scientific and social scientific intellectual frameworks, methods and questions that make a unique contribution to debates concerning ecological relations, from early hominins to the present day. Significant intellectual energy has been dedicated to rethinking the so-called invention of farming, with ECRs (e.g. Lodwick, Weide and Whitlam) based in the Archaeobotany Lab (led by Charles)

working on early and late prehistoric plant regimes in western Asia and Europe, and a growing interest in the complex cropping arrangements in the Sahel of Africa (Styring). Work by the ERC AgricUrb project (Bogaard) shows the development of farming was far from linear, and that new social projects, such as the sudden emergence of cities in northern Mesopotamia, could 're-invent' farming. Work on individual species such as the horse and donkey provide privileged insights into global history, explored in successive books by Mitchell. We have supported the creation of large databases and mapping of isotope values (Pouncett), contextualizing individual results, such as detailed work revealing individual life histories (Schulting). The long-term history of our species has always involved violence; analysis of human skeletons from Europe, Siberia and Japan by Schulting reveals both the level and types of violence that occurred amongst hunter-gatherer and farming groups in the deep past. 'Big data' were collated through the ERC EngLald project (Gosden), rethinking middle Bronze Age to early medieval England by combining a mass of data on settlement, field systems and artefacts within a GIS environment to model continuity and change over the long term. For the early medieval period, the ERC FeedSax project (Hamerow) brings together large-scale bioarchaeological datasets, analysed using novel archaeobotanical and -zoological methods, to understand changing agroecology, political structures and settlement patterns, including the origins of open fields. Explo, an ERC Synergy grant (Bogaard), explores exceptionally preserved waterlogged bioarchaeological assemblages from Neolithic-Bronze Age lakeshore settlements of northern Greece and the southern Balkans to gain detailed insights into the huge range of species, domesticated and wild, used by early farmers. Collectively, projects within the 'ecological relations' theme reveal the complexity and diversity of human ecologies, overturning older notions of convergent, linear pathways of development and opening up Archaeology's potential to inform contemporary ecological debates surrounding climate change and food security.

3. Material Relations: We have developed novel approaches to the nature of human intelligence, now to be understood as the mutual engagement of human bodies and material culture. Cognition and material culture are the focus of the ERC Handmade project (Malafouris), which develops methods for recording and analysing the movements of hand and eye when forming pots, with a new post created in the archaeology of cognition (held by Malafouris). Metalwork has proven particularly suitable for framing the interaction of people and materials: novel modes of chemical analysis have been developed to understand the flows and recycling of metals such as bronze across Eurasia over the last 5000 years, revealing distinct regional relations with metals. China, for instance, took bronze working from the steppe and created its own unique trajectory, as revealed by the ERC FLAME project (Pollard). The importance of eastern connections to the Viking world are revealed through analyses of silver in Eastern Europe and Russia in Kershaw's ERC SILVER project. Naylor is examining metal hoarding and exchange, using the Portable Antiquities Scheme (PAS) and other sources. Metalwork also has aesthetic properties, and so-called Celtic or Scythian art across Eurasia is being investigated through Gosden's Leverhulme project, considering how it reflects and shapes animistic notions of the world. Collins, Hein, Lemos and Morgan have investigated expressive culture across the Mediterranean and Chinese worlds, while Chirikure is developing new insights into political economy and heritage on the basis of southern African philosophies. The Roman empire, investigated in the OXREP project (Wilson), produced levels of material culture not seen again in Europe until the start of the modern period. Bursts in production are now registering in environmental records, such as Arctic ice cores, with implications for our understanding of long-term environmental degradation and climate change.

The shaping of class, gender, sexuality and emotion through material culture is examined through rich material records from the classical, medieval and modern periods, such as in Hamerow's, Jacobs' and Standley's work. Large-scale contemporary problems can benefit from an archaeological perspective on material relations. The ancient history of violence examined by Schulting is complemented through World War 2 battlefield archaeology by Shapland in the Mediterranean, while EAMENA's work on endangered heritage brings in contemporary dimensions of conflict. Important work is being carried out with refugees and homeless groups to understand how they use materials to create ways of life in camps and temporary accommodation that are not only liveable, but allow people to cope with emotional trauma, as in Kiddey's British Academy Fellowship and the Calais/Lande project (Hicks). Collaborative work with indigenous groups calls on the skills of archaeologists, including work in central America by Geurds, Ostapkowicz's project in the Bahamas, Clack's analysis of landscape and materials in north-east Africa and Derbyshire's work on the Kenyan cattle complex. Uncovering the colonial histories of museum collection, and forging paths to their decolonisation, has been brought to the fore nationally and internationally (Hicks). In all of these ways, projects within the 'material relations' theme uncover how structures of power are variously sustained and broken down through flows of materials.

4. Analytical Methods and Data Science: Archaeology at Oxford contributes to the creativity and sustainability of the discipline by developing innovative methods and modes of analysis: the 'backbone' of our research efforts. We have strategically invested in the curation of large databases, including making open data available to scholars and the public. Innovations in method encompass new chronological techniques improving the time depth and resolution of temporal frameworks, including NERC-funded work on novel deep time OSL dating techniques (Schwenninger) and new ways of charting the ecology of farming systems, from Neolithic 'gardens' to medieval open fields (Bogaard/AgricUrb; Hamerow/FeedSax). Our projects have created key databases for wider research, including the long-term collation of radiocarbon dates and isotopes and information on the Roman economy, and also methodological innovations from specific projects, including FLAME, EngLald, Hillforts, EAMENA and more. We aim not only to make databases available, but also tools for their analysis, the best-known of which is OxCal, but which also include, for example, mapping tools within the EngLald database. Such stores of data and analytical tools feed into the research process, but also enable citizen science, as illustrated in our impact case studies. Important innovations in compound-specific dating (Devièse, Higham) and understanding large sets of dates (Ramsey) and linking these to large events such as eruptions (Smith) provide the basis for further developments. Broader issues are being tackled through novel methods, including questions of domestication (Larson), inequality (Bogaard) and intelligence (Malafouris). Thus, work within the 'analytical methods and data science' stream provides vital scaffolding for research in all of the other streams.

1.6 Research strategy for next five years

A key challenge is the sustainability of research, raising important questions including how to replace lost sources of funding resulting from Brexit and the pandemic, and how to create a carbon-neutral global research culture while maintaining global connectivity. The heart of any response will be the creation of virtual and face-to-face communities of new kinds, novel work on existing materials, combined with the development of a research commons. The funding landscape is changing, but confirmation of the UK's participation in Horizon Europe suggests that ERC funding will continue to be important, alongside new developments in UKRI, and we will monitor Wellcome, other trusts and US foundations. Through strategic use of funds we will

aim to create new posts (e.g. in archaeozoology, matching our strengths in archaeobotany) and enhance support for graduate research.

We aim to make Archaeology at Oxford a hub in a global community of scholars focused on the material remains of the past, both communicating remotely and working together in person (Fig. 3). We will pioneer novel forms of research, allowing for greater participation by excluded individuals and groups, using Linked Open Data (as featured, for example, in the NERC-funded radiocarbon facility, especially IntChron, and in the latest phase of EAMENA), further developing a research commons to help sustain the discipline across the world. Research on existing materials held in museums and other collections can be explored more fully, enhanced through funding for updating laboratory equipment, in a period when new fieldwork is challenging due to lower levels of funding and concerns about COVID. Here, Oxford's museums will assume even greater prominence, in connection with other national and international repositories, responding also to decolonizing initiatives.

Developing a digital commons will also help us reach beyond the academic community to government bodies, NGOs and broader publics. In-person meetings with colleagues across the world and fieldwork opportunities have become scarce resources, and their occurrence will have to be strategic and justified. We are exploring how to use seminar series and discussion groups as the basis of much wider fora ('globinars'). By going digital, for example, an international FeedSax conference (December, 2020) attracted >400 participants from 38 countries: a far greater 'reach' than the event originally envisaged. We will make a special effort to develop links in Africa, central and south America, central Asia and southeast Asia. This will need extra administrative capacity to support communications. Distance learning courses in archaeology through Continuing Education are thriving and their experience is being built upon elsewhere in the UoA. We will continue to provide academic hospitality to visitors from across the world, through strategic use of University and college resources, and maintain a community of global ECRs and students. New discussion fora will identify areas of crucial current concern and build research teams working in concert at a range of institutions, forming a new global division of labour and openness of approach.

2. People

2.1 Staffing strategy and staff development

The key to our successful hires is a staffing policy that supports colleagues at all levels by:

- strengthening research leadership;
- maintaining dynamism through investment in ECRs;
- taking a structured approach to building research careers, from ECR to senior professor;
- protecting research time and enhancing research support; and
- ensuring equality of opportunity once in post.

We summarise our activities accordingly below, and in section 2.2.

Strengthening research leadership

Since 2014 we have created five new posts, bringing in global talent from varied intellectual, cultural and ethnic backgrounds: Shadreck Chirikure, British Academy Global Professor specialising in Africa; Alexander Geurds, who works on central and south America; Anke Hein, a specialist on China; Greger Larson, who runs the new palaeogenetics lab; and Lambros Malafouris, who works on the evolution of human intelligence. Chirikure's and Larson's posts

were enabled by British Academy and Wellcome/ERC, respectively. Hein's post was funded by a donation from the Peter Moores Foundation (with a link to Chinese collections in the Compton Verney Art Gallery), whereas Geurds and Malafouris were strategic appointments using School funds. Finlayson, our most recent arrival, is the new EAMENA director, funded by Arcadia. Tim Clack is the first holder of the new permanent Chingiz Gutseriev Research Fellowship in Archaeology and Anthropology, funded by a donation. Our staffing priorities also include filling posts on retirement: for example, Lee-Thorp was replaced by Styring, maintaining our strengths in isotopic analysis and Africa, but shifting the focus from the deep past to contemporary agroecologies and food cultures in the Sahel, as well as those of the past.

Maintaining dynamism through a structured apprenticeship approach

Staff have varied support, including a mentor, with whom they meet regularly to discuss immediate priorities and longer-term goals. New appointees meet key academic and administrative staff to understand the structure of the School, the facilities and forms of support available and the balance of their duties. New staff members have a probationary period, with both an interim and final review, assessed by senior academic staff and overseen by School Board, providing an avenue for advice and support. The HoS has annual individual meetings with all staff to discuss their current and future research, publication and grant applications, and broader career plans. New staff receive training in graduate supervision through the Centre for Teaching and Learning, complemented by training courses provided at University and Divisional level in Personal and Professional Development, including research leadership.

University- and division-run workshops on major funding calls are well attended, and our senior staff have spoken at such events; Morley disseminates funding information widely. Postdoctoral fellows each have a mentor, who guides them through proposal processes and liaises with the research support team. All ECRs and staff are interviewed by mock panels for awards involving interviews; academics from across the University form a panel overseen by a Divisional research officer. Mentoring includes advice on promotion; since REF2014 six UoA members have been awarded professorial title.

Our research support network, overseen by the HoS, contributes materially to grant success, and delivery. The School-administered Meyerstein Fund gives small amounts to support graduate and staff research, typically for conference attendance (£105,000 over the REF period). Two departmental lecturers have carried out PI teaching during buyout on major research projects: Erb-Satullo on the ERC-funded FLAME project (for Pollard), and Martin on the ERC-funded FeedSax project (for Hamerow). Both developed high-quality research of their own, securing academic posts elsewhere.

We have hosted 98 postdoctoral researchers since 2014, of whom 39 were independent and 59 connected to larger projects. Such a large cohort has provided a major boost and impetus to our research; our postdoctoral researchers have more than doubled since REF2014 (39). ECRs set up their own Society for Postdoctoral and Early Career Teaching and Research Staff in Archaeology (SPECTRA), with School financial support and HoS mentorship. One of the first such societies in the University, SPECTRA is represented on School Board and School Committee, feeding into decision-making, and at University level on the Research Staff Consultation Group and Oxford Research Staff Society, feeding back to the School. We regard our stable ECR numbers over time (Fig. 2) as a strength, since they reflect our ability to maintain

junior researchers to the mid-career stage, enhancing their opportunity to secure permanent posts.

In sum, we have evolved a multi-stage, flexible research apprenticeship approach, nurturing talented researchers from the undergraduate and postgraduate to postdoctoral levels, and from junior to senior staff. Kershaw, for example, progressed through a Masters and PhD, and has been successfully mentored through a series of fellowships, culminating in an ERC Starting Grant, and recent Philip Leverhulme Prize.

Research students

We currently have 137 postgraduate research students, and have awarded a total of 159 doctoral degrees since REF2014 to students from at least 28 different countries; 68% of our students are from outside the UK and over half outside the EU, reflecting a continued rise in numbers and global reach since REF2014 (Fig. 2). Completed doctorates comprise 33 students for Archaeological Science, 76 for Archaeology, 44 in Classical Archaeology and 6 in Environmental Research (NERC DTP). We run Open Days for prospective postgraduate students, with talks by staff and graduate students. Prospective research students develop proposals in consultation with potential supervisors. There is an induction week for all new students, introducing study facilities, libraries and laboratories. Many students have two supervisors, in addition to a college advisor, all of whom write termly reports on progress. Problems are taken up by the Director of Graduate Studies, a role now split between Archaeology/Archaeological Science and Classical Archaeology. There are good connections between PGRs and ECRs, with many of the latter on large projects providing additional mentoring and acting as role models for students. Doctoral students are admitted on probationer status, requiring substantial pieces of work after four and eight terms, assessed by two members of academic staff not involved with the thesis, who interview them. They also present to their student cohort and staff on both occasions. Postgraduate students run their own longstanding society – Graduate Archaeology at Oxford (GAO) – which organises an annual conference, generating four edited books during the REF period. Students at all stages are immersed in our research culture, including participation in our seminar series. Doctoral students routinely publish their thesis work in peer-review journals, and a ‘thesis by publication’ route is now open to Archaeological Science students.

Students are included in our decision-making structures, with undergraduate and postgraduate representatives sitting on the School Board and School Committee, alongside others including Graduate Studies. Approximately 32% of graduate students received internal funding, an increase on 2014, and new sources of graduate funding are a clear priority. To support the launch of our new MSc in Archaeology – a pathway to postgraduate research – we allocated £35,000 in bursaries for both 2020 and 2021 entry from School funds. Our doctoral students have received 17 collaborative doctoral awards from AHRC and NERC. Lastly, the undergraduate students (currently 70) reading Archaeology and Anthropology carry out research through their final-year dissertations, a number of which have been linked to larger projects and some awarded national prizes. In 2020, for example, Philippa Kent won the Prehistoric Society Undergraduate Dissertation Prize, the Chair of the Prize Committee stating that ‘both the student and the supervisor are to be congratulated on the excellent standard of the work and the guidance provided by the home department’. The GAO is complemented by the Oxford University Archaeological Society, which celebrated its 100th anniversary in 2020; this is run by undergraduate students in consultation with senior members, and organises seminars for local

and national speakers (including a highly successful webinar series during the pandemic) and other events.

Protecting research time and enhancing support

All full-time staff have a right to sabbatical leave (one term in seven) and are encouraged to apply with a particular project, typically bringing a project to completion or initiating new work. We encourage people to plan a weekly research day, and have adjusted scheduling of seminars and meetings to finish by 5pm, to accommodate caring responsibilities.

The University and Social Sciences Division provide systematic support for research and impact, advising on relevant funding schemes and strategies. Advice on awards is also given, including for impact: Griffiths received the Inaugural Vice-Chancellor's Award for Public Engagement with Research 2016 (Archeox, Archaeology of East Oxford Project). Support is available for public, business and policy engagement. A business engagement officer has worked with individual UoA members to develop business engagement seed fund applications. The University also recognises particular initiatives by staff in business engagement; Devière (ECR) was named as our Innovation Champion by Oxford Innovation, a body which oversees links with industry and external partners. Devière and Higham won an ERC Proof-of-Concept Award, which developed out of Higham's Palaeochron ERC Advanced grant to patent an "Oxford chromatographic solution" for rapid amino acid dating. Oxford Innovation also awards grants to develop spin-out companies from research. Richard Allen (Laboratory Manager, PalaeoBARN), for example, won funds to set up a spin-out company, PalaeoPi, which produces soft- and hardware for 3D imaging.

We continue to enjoy close links with Oxford Archaeology (OA), an educational charity engaged in developer-funded archaeology; Gosden and Hamerow sit on OA's Board of Trustees, and both have co-directed fieldwork with OA in support of the undergraduate field school since REF2014. A specific research partnership with OA has developed in connection with the Al Ula region of Saudi Arabia, where the EAMENA team conducted analysis of remote sensing data in parallel with fieldwork by OA. Stronger links with OA are explored through shared grant applications (including to UKRI's Future Leaders Fellowship scheme), interventions in the planning process through predictive models based on existing data and the public presentation of archaeology in and around Oxford.

2.2 Equality and diversity

We are gathering data for an Athena Swan Bronze Award application (November 2021) and take a deliberately broad view of equality and diversity, including gender as well as other dimensions such as socioeconomic background and ethnicity. This process encompasses all staff and students within the School, and the data gathered reveal clear priorities, including gender balance, especially at senior academic levels.

Staff perspectives on working in the UoA are monitored biennially through the University's Staff Experience Survey, covering a wide range of topics from mental health and caring responsibilities to demographic information. Feedback from the most recent survey (2018) has informed, for example, our current staff induction, mentoring and line management practices. For the 2021 survey we are including additional School-specific questions, aligning with our Athena Swan work.

In making appointments we convene selection panels to search actively, encouraging women and people of varied backgrounds to apply. Panel members undergo implicit bias training. We aim to create shortlists with at least 50% women and that are as culturally diverse as possible. We take considerable steps to ensure candidates unfamiliar with Oxford are not disadvantaged, proactively providing them with all the information they need and making sure they are clear about the nature of the selection process, the structure of Oxford and job requirements.

Diversity is central to our recruitment practices, but we have a long way to go, particularly in ethnic diversity. We carry out research all over the world and aim to appoint researchers from across the world. We have an excellent international mix (12 nationalities), with 46% of our staff (24/52) from outside the UK, including researchers from the global south.

Equality and diversity are crucial to managing workloads across the UoA, including for administrative duties, promotion and leadership recruitment. Three of the last four HoS have been women (each serves a three-year term), promoting gender balance in shaping strategic directions over the long term. Our staff gender balance (Fig. 5) has improved since REF2014 but needs to achieve equal proportions, a key strategic objective. We will soon undergo a period of renewal, as three senior male staff (including two statutory professors) will be replaced in the next three years. The new hires will reduce our average age and provide a further opportunity to address issues of gender and diversity.

	Gender	Average Age
Female	22 (42%)	46
Male	30 (58%)	51
Total	52	49

Figure 5. Gender balance among staff during the REF period

During the pandemic we have been working from home where possible. A range of COVID-mitigation strategies have been put in place, including socially-distanced laboratory procedures, monitoring and adjustment of workloads, extending financial support for disrupted research (e.g. the University's COVID Rebuilding Research Momentum Fund, facilitating UKRI extensions), town hall meetings to assess staff needs, furlough and special leave arrangements. One ECR, with caring responsibilities and challenging research impacts from COVID, wrote recently, 'I am genuinely so grateful to be part of SoA Oxford... I feel very well looked after and so thankful that those of you managing the COVID stuff are so "on it"'.

The University's Equality and Diversity Unit (EDU) offers advice on maintaining an inclusive workplace, including best practice guidelines for meetings and conferences. University and divisional HR provide guidance on staff wellbeing. The School has two harassment officers, one female and one male, who are trained by the University's Equality and Diversity Unit to offer advice to staff and students who have experienced harassment. The EDU also offers small-scale funding to promote the recruitment and retention of under-represented groups (Diversity Fund) and support researchers taking a career break for caring responsibilities (Returning Carers Fund).

Support for students includes the Disability Advisory Service, which agrees reasonable adjustments with the School, and mental health support through the University's Counselling Service, college counsellors and student peer supporters; the School also offers mental health

first aid. Hardship funds offered by the University include the Access to Learning Fund, the University Hardship Fund and the Vice-Chancellor's Fund. Support for students suffering or returning from ill-health is handled directly by colleges, but the School liaises, with the relevant college and the University's Education Committee on matters such as alternative strategies for missed assessments.

During the pandemic the School has facilitated (including financing) scholarship extensions for doctoral students whose research is adversely affected. We have also offered an extra round of Meyerstein funding (a School endowment) for graduate research students, for example to improve home working conditions. The School has run regular town halls for students and offered 1:1 meetings with Directors of Graduate Studies to discuss tailored mitigation strategies.

Equality and diversity in constructing this REF submission

The UoA convened a REF Working Group in 2017, with activities conforming to the University's REF Code of Practice. The HoS was the unit's REF Lead and another group member (Gosden) was the unit's REF Coordinator. Further members of the group included heads of the Institute (Hamerow) and Research Laboratory (Pollard) and REF support officer (Maughan). Three of its five members were women. Members of the Group ran three away days open to all staff to discuss the REF process, plus 1:1 meetings with all research staff. The Group has communicated regularly with all researchers throughout the preparation process via reports to the School Board and Committee.

The selection of outputs was rigorous, ensuring parity of treatment across all researchers. Starting in autumn 2018, with calls for additional nominated outputs in 2019 and 2020, all Category A staff members were asked to nominate up to 5 REF-suitable outputs. We trained senior staff from all major areas of the UoA in REF output grading; each nominated output was then reviewed by two readers from this group for output excellence. From the pool of assessed outputs, based on the review grades, those finally returned were selected to meet the criteria. This process was handled confidentially by the REF Lead, REF Coordinator and REF support officer. Output data in Figure 6 evidences the gender-balanced productivity of our staff and our commitment to the career development of ECRs.

No. Outputs in Submission	Cat. A Staff
5	6
4	4
3	8
2	17
1	16
0	1
Average Outputs per ECR	1.3
Average Outputs per Cat. A Male	2.3
Average Outputs per Cat. A Female	2.4

Figure 6. Distribution of UoA15 REF 2021 outputs

3. Income, infrastructure and facilities

We have secured £24.6m in external research income during the REF period (Fig. 7), the majority from the ERC (48%) and UKRI (23%), more than doubling our REF2014 income. The School also 'incubated' three additional ERC Starting Grants (worth £4.7m) that were

subsequently taken elsewhere (Dee/ECHOES to Groningen, Douka/FINDER to Jena, and Valenzuela Lamas/ZoomWest to Barcelona), securing academic posts for grantees. We have enjoyed consistent high quality results every year (Fig. 7). All research streams in Archaeology have received large grants, with projects ranging from Palaeolithic chronology, climate change in Mexico and Japan, and the genetics of major domestic animals, to early urban agriculture, the role of bronze across Eurasia, the long-term history of English landscapes, the early medieval 'farming revolution' in England, the Viking use of silver and the post-colonial roles of museums. We have received ERC funding at all levels, from Starter to Advanced. Within UKRI and UK charities we have received large grants from NERC, AHRC, Leverhulme and Wellcome. EAMENA, a major new initiative since REF2014 (in collaboration with Leicester and Durham), was launched with a grant from the Arcadia Fund. Many of our most highly cited publications have derived from these large projects, as do three of our impact case studies (EAMENA, Suigetsu and Hillforts). Our grant portfolio (366 grants since REF2014) is key to sustaining our commitment to impact.

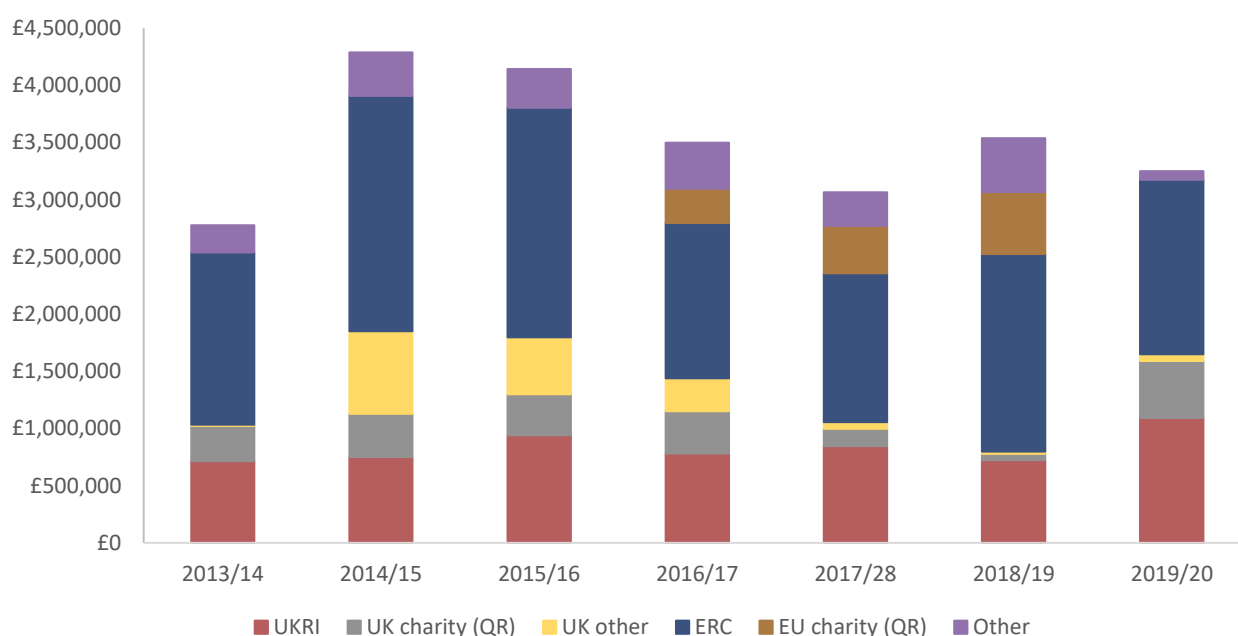


Figure 7. External research income

Since August 2013 we have also received £1.48m from internal Oxford funding across all career stages, from postdoctoral to senior academic staff, and for activities ranging from pump-priming to matching external funding. The major source is the University's John Fell Fund (JFF), which fosters creativity and new research opportunities, particularly for interdisciplinary research, at all career stages. Three rounds are held per year. During the REF period JFF support enabled pilot work leading to major grant wins, e.g. FeedSax and EngLald. Other JFF grants during the period have accelerated or broadened the scope of UoA postdoctoral research fellowships such as British Academy and Marie Skłodowska-Curie.

3.1 Strategy for generating research income

At the heart of our strategy is a commitment to excellence and innovation, as well as responsiveness to emerging opportunities, such as the new AHRC-DFG collaboration, from which Hicks has a major grant with colleagues in Berlin to work on the restitution of knowledge. New ideas and initiatives arise organically within the UoA; formal discussion through School

Committee and School Board, and a mass of informal discussions, enable us to focus on the most promising and feasible opportunities. These formal and informal structures help turn an interesting idea into a practicable project through provision of suitable equipment and facilities, administrative and technical support, and academic input on grant applications.

The School links colleagues across the UoA who are developing complementary themes, and our Research Away Days focus on brief presentations of research ideas and a form of 'speed dating' combining colleagues with varied interests. Our most successful projects integrate different forms of expertise. FeedSax, for instance, involves four senior members of academic staff and integrates archaeobotanical and isotopic approaches with historical questions on cereal farming and wealth inequalities. Large projects have advisory boards composed of people from within the UoA and beyond Oxford, enhancing our wider networks.

A major future challenge is to maintain our research income through diversification; though access to EU funds is assured for the next 7 years, the economic downturn is likely to influence research funding generally. We encourage colleagues to explore all UKRI sources from NERC to the ESRC, as well as trusts (Leverhulme, Wellcome) and the British Academy, alongside opportunities further afield including US foundations. We are in any case interested in themes of broader importance: Ramsey is developing work on climate change, Bogaard is working with economists on the long-term history of inequality and Hicks has interests in migration and restitution, alongside our focus on threats to archaeological sites in north Africa and the Middle East (EAMENA).

Such areas allow us to expand our links with industry, government agencies and NGOs in this country and globally. They also require connections with a broader public. Funds from within the University and beyond to accelerate impact are thus key. The activities of many ECRs in public engagement and citizen science have arisen organically, and we will continue to encourage and support this. We will continue to develop links across the UoA between the School of Archaeology, the Ashmolean and the PRM, partly because of the global connections the museums have cultivated, but also because of the opportunities that museum spaces afford for public engagement.

Finally, we aim to increase funding for graduate students (such as through the NERC and AHRC DTP programmes) by targeting a mix of UKRI, government and NGO links, as well as private donations and School funds.

3.2 Infrastructure and facilities

We have implemented major improvements to our estate since 2014, revamping our main archaeological science facilities in the Dyson Perrins Building (where we also share laboratories with Geography). This coincided with Archaeology moving into two nearby Victorian villas with offices, a lecture theatre and seminar room, accommodating staff previously housed in Dyson Perrins and the Institute, plus expanding laboratory facilities, enabling even tighter integration of lab- and non lab-based staff, and supporting collaborative research. Renovations were enabled by a University grant (£3.7m).

We have a number of dedicated research facilities: the Oxford Radiocarbon Accelerator Unit, PalaeoBARN, Stable Isotope Analysis Laboratory, Electron Microprobe and Tephrochronology Facility, Luminescence Dating Laboratory, SEM Laboratory, Archaeobotany Laboratory,

Archaeological Imaging Service and Archives. All have been upgraded since 2014. PalaeoBARN was created by upgrading genetics labs using internal funds with matching support (£110,000) from the Wellcome Trust. Using a combination of School and University funds we bought a compact accelerator for the Oxford Radiocarbon Accelerator Unit (ORAU) to replace the larger old instrument, allowing us to move all of the facility, previously partly in the Physics Department, to the Dyson Perrins Building. We purchased a new mass spectrometry instrument with a Wellcome Trust grant and matching funds from the JFF and School, totalling £156,000. Grants regularly allow us to update and extend our equipment, so, for example, new microscopes were purchased on the FeedSax grant, a freezer mill from the AgricUrb grant and computer equipment and GIS software from EngLald. We also take advantage of chance opportunities; for instance, Smith arranged for an electron microprobe to come from Zurich for tephra analysis, now the only one of its type in a UK Archaeology department. The equipment was donated and JFF funds secured to pay for transport and installation. We have also set up dedicated facilities for School archives and the Celtic Coin Index, enabling new research. The holdings of the Celtic Coin Index are going digital, supported by private funding (£110,000 to date).

ORAU is a national facility supported by NERC, which renewed their support for five years in 2019. Radiocarbon dates are provided in three ways: applications from other UK universities to the relevant research council for dates to support research; those written into research applications collaborative between Oxford; and commercial dates. ORAU supplies not only dates, but also calibration expertise. ORAU also maintains specific collaborations, such as an MoU with Ritsumeikan University for novel work on pollen grain dating using a technique developed by Ramsey.

We ensure that facilities are equally available to all researchers, from undergraduate students to senior staff. A decision-making chain exists such that the head of each facility sets priorities, which can also be referred to the Director of the Institute or Research Laboratory and to the HoS as needed. Graduate students face a range of deadlines, which are taken into account alongside those for research grants. Through open discussion and planning ahead, as well as an ethic of fairness, we have found it possible to accommodate all priorities. A number of facilities are regularly used by other HEIs and researchers across the globe. The principal of these is ORAU, but joint grants with other researchers include work in PalaeoBARN, Isotopes, Tephrochronology, Luminescence and Archaeobotany.

4. Collaboration and contribution to the research base, economy and society

4.1 Research collaborations

Archaeology in Oxford is practised by professionals in museums, heritage and tourism, local government, commercial archaeologists and academics. It also has a strong amateur tradition, with around 250,000 people a year engaged in archaeological fieldwork through metal detecting, participation in excavation and survey or volunteering in local museums, or bodies such as the National Trust. We collaborate with groups and individuals across the full spectrum of archaeology and aim to develop such links further to sustain and enhance the practice of archaeology in all its dimensions.

Since 2014 the UoA has had some 154 academic visitors from across the globe, including Juan Antonio Quiros Castillo, Patrick Degryse, Joe McConnell, Ian Hodder, Lynn Meskell and Turbat Tsagaan staying up to a term or more. There are also 70 research associates carrying out their own research linked to the UoA, or directly attached to our research projects, including emeriti

who provide mentoring advice. We have had at least 56 visiting students, most with funding from their own country or institution. In 2020 Lynn Meskell was awarded the honorary title of Visiting Professor for three years by the University, to develop collaborative work with the UoA on the intersection of archaeology and heritage.

Engagement and relationships with key research users

Major engagement with the wider professional and public world takes place through the Archaeology team (headed by Griffiths) in Continuing Education (CE). CE run courses and workshops in the Historic Environment for heritage professionals in field and post-excavation techniques, buildings recording, planning, conservation and legal aspects of the (mainly UK) historic environment. Initially funded directly by English Heritage until 2015, courses are now paid for by individual institutions. There have been 1317 participants since 2014 from across British archaeology. CE has just under 2000 enrolments in Archaeology a year, 111 of whom are on Oxford award-bearing part-time courses, including 38 matriculated graduate students, drawing in a diverse student body.

Specific arrangements with Oxford Archaeology, pre-Construct Archaeology and Cotswold Archaeology allow in-service training for their staff. Of particular note is the Short Course in Radiocarbon Dating and Bayesian Chronological Analysis, directed by Ramsey and run by Dodds (seconded from OA), which draws in participants from across the world, many of them doctoral students (50%), and the remainder available for NERC DTP students at Oxford and elsewhere.

Since 2014 over 12,000 external research enquiries have been handled by archaeologists at the Ashmolean Museum from across the globe. There have been 1200 research visits to collections, mainly by academic staff and other professionals, and over 600 visits by graduate research students interested in material from the Palaeolithic to the modern period. Museum staff have been engaged in formal supervision of 42 doctoral and 23 masters students, who have made some 720 study room visits. In addition, and in connection with PAS, the Museum runs a free archaeological object and coin identification service (Naylor). This has added some 800 objects to the PAS database, and been visited by over 900 people (including 60 children). The PRM has had 588 visitors to its archaeological collections, including 56 graduate students. Archives within the Institute of Archaeology receive 100 enquiries annually and 35 visitors, with similar numbers for the Celtic Coin Index.

We have developed a great range of engagements through social media. We have 2291 followers on our School Facebook page, and posts there engage 850 people on average. In 2020 the School set up an Instagram account, with 1466 followers, and a Youtube channel. The ORAU twitter feed has about 1000 followers; PalaeoBARN (900) and EAMENA (2150) have similar numbers. Twitter accounts run by the School and its staff have over 30K followers worldwide, alongside 90K for the Ashmolean and 40K for the PRM. During 2019-2020 we had over 300K hits on the School website, with at least 70K from across the world. Higham and Larson gave a live talk for the Oxford@Home on the peopling of the Americas that attracted over 90K live viewers and continues to be regularly viewed (Youtube). Individual research projects have their own popular blogs and social media presence. We have just established an Artist in Residence position, now held by Miranda Creswell, to engage various publics through art and archaeology. Miranda has worked with us to bring archaeology to a variety of groups, including

dog walkers in Didcot (passionate about their landscape!), schools in Birkenhead and Liverpool, and Horatio's Garden, a spinal unit near Salisbury.

4.2 Contribution to the sustainability of the discipline

We provide many forms of leadership within the academic community and beyond. Members of the UoA are on the editorial boards of 37 journals, including three in-house (*Archaeometry*, *Oxford Journal of Archaeology* and *Anglo-Saxon Studies*), and act as reviewers for over 70 journals. Gosden is Chair of the Directors of the Company that oversees *Antiquity* and Bogaard is a trustee. A great range of trusteeships are held by our UoA members: Hamerow is a Commissioner for Historic England, Gosden is a trustee of the Art Fund and the British Museum, as well as Chair of Trustees of Oxford Archaeology, where Hamerow is also a trustee. Pollard has been part of the invited review of the Getty Trust. Hamerow was President of the Society for Medieval Archaeology from 2014-17. Ramsey was recently elected chair of the IntCal committee, following the release of IntCal20. Chirikure is on the Advisory Council of the Wenner Gren Foundation.

Most members of the School have participated in peer review colleges for UKRI bodies, including NERC and AHRC. Gosden served on the panel for the Deutsche Forschungsgemeinschaft Excellenzinitiative in 2017 and 2019. Hamerow sat as a panel member and then chaired (2019) the ERC panel for Advanced Grants in The Study of the Human Past.

Members of the UoA, from junior to senior levels, have delivered over 40 keynote lectures during the REF period. This volume of high-profile lectures illustrates the prominence and reach of Archaeology in Oxford as a research hub. Barton delivered the keynote at the PanAfrican conference in Rabat, Morocco in 2018, for example, while Rachael Kiddey delivered a keynote lecture on cultural heritage and advocacy to celebrate the opening of a new graduate school at Linnaeus University, Sweden. A number of people have received prizes and fellowships since REF2014 (Fig. 8).

Unit-level environment template (REF5b)

Prize/Fellowship	Name
Philip Leverhulme Prize in Archaeology	Kershaw
Shanghai World Archaeological Forum Research Award (early agriculture)	Bogaard
Shanghai World Archaeological Forum Research Award (S African metallurgy)	Chirikure
Shanghai World Archaeological Forum Research Award (animal domestication)	Larson
Royal Anthropological Institute's Rivers Memorial Medal	Hicks
Society of Historical Archaeology's James Deetz Book Award	Kiddey
Society for Africanist Archaeologists Book Prize	Mitchell
Pomerance Award for Scientific Contributions from the Archaeological Institute of America; elected Fellow of the Royal Society of Chemistry	Pollard
Elected member of the Römisch-Germanische Kommission and Fellow of the British Academy	Bogaard
Awarded a lifetime corresponding membership of the Archaeological Institute of America	Brodie
Elected Corresponding Fellow of the Deutsches Archäologisches Institut and of the Australian Academy of Humanities	Gosden
Honorary Fellowship of Lincoln College, Oxford	Hamerow
Honorary Fellowship of the Royal Society of New Zealand	Higham
Leverhulme Major Research Fellowship	Gosden
Fellow of the Society of Antiquaries	Lodwick
Fellow of the Society of Antiquaries	Naylor
Foreign Corresponding Member of the Associazione internazionale di studi sul Mediterraneo e l'Oriente; Honorary Research Associate of the University of Witwatersrand; Member of the Governing Council and Hon Secretary, British Institute in Eastern Africa.	Mitchell

Figure 8. Prizes, fellowships and honorary memberships

4.3 Support for interdisciplinary research and responsiveness to national and international priorities

The majority of our research is interdisciplinary: through working across disciplinary boundaries we develop holistic approaches to current cultural, economic and political questions, ranging from global issues such as inequality, decolonization, mass migration or ecological degradation to more situated problems including mental health and ageing, homelessness and the illegal ivory trade.

Researcher-led engagement activities include workshops that bring disparate groups of disciplines and external partners together around a shared interest, ranging from material culture and mental health (Malafouris) to sustainable farming in France and Morocco (Bogaard) to displacement and homelessness (Hicks, Kiddey). Museum exhibitions have provided extensive public engagement, with workshops and talks by McNamara on Tutankhamun and Roberts on

Pompeii at the Ashmolean. Other examples include Larson's work with the Oxford Natural History Museum to create a display deriving from an AHRC Science in Humanities project on chicken domestication, including a model of a 25-foot high chicken, very popular with younger audiences! Engagement with the media is constant and diverse, including many staff interviews on BBC programmes (Bogaard, Chivall, Griffiths, Hamerow, Hicks, Hulin, Kershaw, Li, Naylor, Pouncett, Robinson) and for international TV and radio (Bogaard, Chirikure, Chivall, Geurds, Gosden, Larson, Schulting, Weide), as well as diverse print media.

Staff serving on advisory boards for national organisations and institutions (e.g. Historic England, British Museum) and professional archaeological organisations (e.g. OA, Museum of London Archaeology, Mary Rose Trust, Bulgarian Association of Archaeologists) have actively engaged in discussions recognizing the importance of colonial histories in our presentation of heritage, issues of repatriation and how to best reach diverse communities. Advisory roles have resulted in influence on UK government policy: during the REF period Pollard gave evidence on heritage science to the Parliamentary Science and Technology select committee, for example, while Hamerow is an academic panel member for Highways England for the £1.5bn A14 road improvement scheme. Creative methods of community engagement have included Kiddey's work with homeless people in Bristol. Coutu has investigated the history of ivory use, using ancient DNA and isotope values from ancient ivory artefacts and modern elephants, to investigate habitat change or destruction, decreases in population size and the genetic diversity of African elephant populations over recent centuries. On COVID-related issues, Ramsey is an active member of the RAMP forum on pandemic modelling, set up by the Royal Society to produce reports to government. Larson and his team have received Fell funding to develop a state-of-the-art bioinformatics tool, entitled Robust Identification of Pathogens (RIP), for pathogen detection in ancient DNA metagenomic datasets to understand the long history of coronaviruses and their ability to cross from animals and birds into humans.

UoA members have discovered research opportunities by responding to emerging national and international priorities. Locally, for example, the Archeox project revealed remarkable evidence of long-term landscape evolution in Oxford's eastern districts by building on community demand for training in local heritage. Internationally, EAMENA's successful lobbying of the US government to reform the Kyl-Bingaman Amendment, limiting the resolution of satellite imagery over Israel and Palestine, has created new scope for human rights organizations monitoring activity in the region. This example, from another impact case study, underlines the UoA's efforts to align archaeological research with wider societal priorities.