

Institution: University of Sheffield
Unit of Assessment: 17A - Geography, Environmental Studies and Archaeology: Archaeology
<p>a. Overview</p> <p>Academic staff and PGR students in this unit are from the Department of Archaeology (Faculty of Arts & Humanities). Our geographically and chronologically expansive research is organised through three themes: 1. Biological change, colonisation & population dispersal, 2. Technologies of production, consumption & exchange, 3. Technologies of image, representation & identity. These exploit the intellectual and methodological strengths of the humanities and social and natural sciences, enabling interdisciplinary research, while treating archaeology as a unified discipline.</p>
<p>b. Research strategy</p> <p>Having pioneered the integrated arts/science approach to archaeology, now the disciplinary norm, we are broadening and intensifying its application by cross-disciplinary collaborations. With this approach we have addressed some of archaeology's big questions – the earliest human presence in the UK, the origins and spread of agriculture, the relationship between monumentality and social complexity, and between materiality and human identities. To fulfil our commitment to archaeology as a world-wide discipline, contributing the broadest understanding of the material conditions of human history and diversity, we work at national and international levels, engage in cross-disciplinary research across the Faculty and University, and further our long tradition of public engagement and knowledge transfer (see REF3a). To resource our research strategy, we appoint research active staff; provide regular research leave; nurture a research-led learning environment with student participation at all levels; capture grant funding; exchange ideas and people internally, nationally and internationally; and provide research facilities including laboratories, equipment, library and on-line resources. The Departmental Director of Research and Innovation (DDRI), liaising with and supported by Departmental, Faculty and University personnel, committees and resources, is the academic leader in cultivating, promoting engagement with, and implementing and managing our strategy. The DDRI works closely with the Head of Department, Departmental External Engagement Coordinator (DEEC), Director of Graduate Studies (DDGS - who manages our highly successful PGR training and recruitment described in section c), and with the Research Committee (6 senior academics) which meets twice per semester. The DDRI reports to Departmental Executive and Staff Meetings, ensuring research is embedded in management and policy making, and is central to departmental governance structures and administrative support. The Faculty Director of Research, Faculty Research Strategy Manager and University Research and Innovation Services (R&IS) support our research activities.</p> <p>Since 2008 we experienced staff turnover through death (1), retirement (2), and promotion to senior posts elsewhere (7). ARCUS, our research consultancy, was affected by the decline in construction due to the recession and was subsumed into Wessex Archaeology, and the Dendrochronology laboratory was reintegrated within English Heritage. Our management of this transition (e.g. recruiting new permanent (3) and temporary staff in strategic areas, see section c1; actively targeting post-doctoral recruitment; long-term succession-planning), and the timing of most changes towards the end of the REF period, minimised their impact. Through our 3 research themes we have achieved the aims of our RAE2008 research strategy:</p> <p>1. To confront large-scale historical issues and disseminate our findings</p> <p>We publish excellent research (books and articles in the best international journals) across the range of archaeology, including 18 authored books, 10 edited books, over 150 chapters and over 140 articles in high-impact refereed international journals (including <i>JAS</i> (19), <i>Antiquity</i> (6), <i>J. World Prehistory</i> (2), <i>J. Human Evolution</i> (3)). Contributions to journals ranging from geology, evolution, biology and archaeometry to social history and philology underline the <i>diversity</i> of our research. The quantity of outputs is equally impressive: over 340 publications (>12 per academic). We have secured major grants to support, invigorate and disseminate research. By targeting prestigious academic and government sources (e.g., EU >£2.9M, RCUK £1.1M, government bodies £0.9M), grants secured in the REF period exceed £5.3M. Externally funded research leave for 5 staff (~20%) enabled publication/preparation of 3 books and discovery of a new species (Kuykendall). 6 EU-Intra-European Fellowships enrich our research environment and have led to new collaborations and EU funding (e.g. Day). We disseminate our findings at local, regional and high-impact international conferences, meetings and workshops (section e), including Barrett's invitation to speak at the opening of Linnaeus University and Bennet's 7 international invited/keynote lectures. We host frequent national/international meetings, including the annual</p>

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Sheffield Centre for Aegean Archaeology (SCAA) Round Table. New short courses in Archaeozoology, Human Osteology and Archaeobotany extend our commitment to research training. Working across disciplines, we have led in developing **innovative theories and methodologies**. Jones and Charles use DNA data to understand agricultural origins and spread, and isotopic analysis to determine the intensity of early agriculture. Barrett is exploring the application of Darwinian theory to archaeology, and Halstead leads in integrating ethnography and archaeology to examine variation in farming practices. Departmental research at Stonehenge (Albarella, Parker Pearson, Viner, Chan, Simmons (see REF3b)) has shaped perceptions of the British Neolithic and Early Bronze Age, enabling a Google *Stonehenge-under-the-Earth* application (launched 2011). Hemer developed innovative isotopic analysis of teeth to identify migration of children. The ARCHATLAS digital mapping programme, facilitating research across chronological, spatial and disciplinary boundaries, has been extended with British Academy (BA) and Worldwide University Network funding (0.5M hits since 2008). Innovations in pXRF methods (PDRA - Doonan, Frahm; Thermo Scientific - Niton) have transformed the speed of data acquisition and analysis and thus both project design and knowledge of the past. A new magnetometer head for terrestrial magnetic survey in mining and archaeology (Merrony, with Sheffield Materials Science and Engineering) is being developed commercially by Ultra Electronics. These latter applications map directly onto our strategic goals of public engagement and commercial applications of research.

2. To extend our collaborations. Successful expansion of research collaboration; all academic staff have collaborative projects (often international and interdisciplinary), contributing to the large number of long and short-term visiting scholars in our Department since 2008. Of our 49 *grant-funded* researchers, 30 were PDRAs (15 in RAE2008), 6 funded by Marie Curie Training Awards (none in RAE2008) and 10 from the EU Transfer of Knowledge Programme (see section e). Larger collaborations include 3 EU collaborative grants (Carroll, Jones, Day) with 25 partners; Hadley's collaboration with the British Museum and York University on Torksey; and Parker Pearson and Albarella's high profile Stonehenge project with 4 UK universities (sections d and e).

3. To extend our commitment to knowledge transfer. Our knowledge transfer (KT) activity, dominated in RAE2008 by ARCUS, is now 'all-departmental' and central to our research strategy (REF3a). Highlights include two AHRC Connected Communities grants (>£150K, Johnston) for community projects; Heritage Lottery Fund funding for the Hunter Archaeological Society centenary (£36K); Higher Education Innovation Fund and Esmee Fairbairn grants with Barnsley Museums (Moreland/Hadley); Jones' role in the City Council/Sheffield Industrial Museums community project (HLF funded, £0.5M) to restore Shepherd Wheel as a heritage monument and educational resource; community involvement in the Paliambela project, Greece (Halstead); and public experimental archaeology workshops (Doonan).

Our vision for the next five years:

Our discipline is changing rapidly as theoretical positions and analytical specialisations in different material categories become more permeable. Archaeology is now a hybrid field with concerns such as human-plant-animal symbiosis in the evolutionary contexts of niche construction and migration; and revisionist theories of materiality linking human consciousness, embodied practices and technological qualities. The integrative blend of humanities and scientific archaeology 'made in Sheffield' is especially suited to this complexity. Our ambition is to build a Sheffield research and learning environment seated at the heart of regional (especially White Rose), national and international networks. We will:

1) Through **specialism, collaboration and excellence**, set the agenda for/advance major issues in our discipline, including what it means to be human, the relationship between humanity and technology, and our place in Nature; build on our leading DNA and isotopic research into (for example) the origins and spread of agriculture and herding (Albarella, Halstead, Jones), environmental change (Ayala, Johnston) and human migration (Craig-Atkins, Hemer, Johnston); explore identity through material culture (Bennet, Carroll, Day, Doonan, Hadley, Jackson, Sherratt, Willmott), genetics (Hemer, Kuykendall) and customs and commemoration (Carroll, Craig-Atkins, Hadley, Rempel); and advance research on childhood and social inequality (Crewe, Hadley). Working with Engineering (Hemer, Jackson), Medicine (e.g. through cross-disciplinary centres such as Medical Humanities; Craig-Atkins, Hemer, Nystrom), and Performance (Hadley, Crewe), our research will be at the forefront of the translational humanities. We will work on the micro- and macro-level, as 'lone-scholars' and in collaborative groups, within and between disciplines, to enhance our understanding of key questions relating to the human past.

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2) Utilise **enhanced grant capture to facilitate high quality research and scholarship**, working with Faculty Research Officers and our Research Committee to support and develop existing and new researchers. We will lead collaborative networks, pursue individual awards for pump-priming and dissemination, and further broaden our funding, e.g. Far Eastern, joint UK-international (e.g. AHRC-NSF), commercial, and Alumni sources. We will continue to foster ECRs through University, national, EU (e.g. Vice Chancellor's Fellowship programme [Hemer], White Rose Collaborative Fund [Crewe], Marie Curie IEFs) and short-term funding (e.g. Santander, Erasmus). Another Marie Curie researcher starts in 2014, two further applications have been submitted and an EU consortium project has just been successfully negotiated.

3) Continue **disseminating our research through high-quality outputs**, both collaborative and single-authored. In addition to papers in the top international journals, we anticipate publication of the following substantial books in the near future: *Two Oxen Ahead* (Halstead), *Animals of Our Past* (Albarella), *The Archaeology of Medieval Childhood* (Hadley, Hemer), *Bronze Age Britain* (Johnston), *Infant Health and Death* (Carroll), *A New Middle Ages* (Moreland).

4) **Enhance the integration** of all researchers (from senior academics to post-doctoral researchers, research assistants and visiting scholars) into our vibrant community and research themes through collaboration and mentoring. We will integrate *students* at all levels in our research, in academic-led projects, through their individual research projects, and through 'Sheffield Undergraduate Research Experience' (SURE) placements, 'On CampUS Placements' (50 p.a.) and departmentally-negotiated work placements. Our PGRs will join the new White Rose College of Arts and Humanities (launched October 2013 (AHRC £19M)) and benefit from its world-class interdisciplinary skills training and pan-institutional perspective.

5) As outlined in REF3a, work with **multiple user-communities** towards **co-production of new knowledge and methodologies** to benefit all areas of society. We will build on existing links, develop new strategic partnerships (e.g., leading the University/City Council excavation/heritage project at Sheffield Castle - Moreland), enhance the role and profile of our DEEC, further expand our extensive involvement with community groups, ensure public dissemination of our research and develop clearer measures of its impact on non-academic partners and beneficiaries.

c. People:

i. Staffing strategy and staff development

Research excellence, achievement and potential are key criteria in our strategy of appointing staff with research expertise that complements or enhances our strengths, addresses new or emerging areas or can develop in new strategic directions. Hemer's appointment to one of only 15 University of Sheffield Vice Chancellor's Fellowships (from 814 applications) underlines the importance given to excellence. New ECRs (Craig-Atkins, Hemer), both returned to REF, reinforce our established strength in osteology and funerary archaeology (*vice* Chamberlain; Parker Pearson), and bring new directions in the 'Biological Change, Colonisation & Dispersal' and 'Image, Representation & Identity' themes. Appointment of Sherratt (from DTI fellow) strengthens our expertise in Mediterranean prehistory and feeds into all three research themes. A teaching appointment (Swales) further underpins our osteology provision, and fixed-term teaching posts have covered staff research or administrative buy-outs, retirements and resignations (Jorge, prehistory; Crewe, historic Europe; Hemer, funerary archaeology; Heyerdahl-King, early prehistory; McKenzie, osteology; Draycott, Roman archaeology; Foster, palynology; Wallace, archaeobotany). Equality and diversity policies underpin all stages of recruitment, appraisal and promotion, and we have been selected for a trial of the Athena Swan gender equality charter mark in Humanities departments. The University's 'Two Ticks' scheme guarantees an interview for qualified disabled applicants. Our permanent academic staff are from diverse cultural (>30% non-UK) and disciplinary backgrounds, and 47% are female (including 3/7 professors), up from 32% across the assessment period. The Department continues to support the research of several retired staff.

A comprehensive programme of induction and mentoring (regular meetings with senior colleagues, annual review with HoD) provides **dedicated support** for all new academic staff. Our focussed support for ECRs and post-docs contributed to the award of *HR Excellence in Research* from the European Commission in 2012 demonstrating our commitment to the 7 principles of the *UK Concordat for the Career Development of Researchers*. New lecturers have a 50% teaching load during their 3-year probation to protect research capacity and, with more experienced staff, provide dual supervision of doctoral students. A long-established departmental workload model ensures equitable distribution of teaching and administration and dedicated weekly research time

during semesters. All research-active staff have taken research leave since 2008, extended in 5 cases by AHRC (3), Historic Scotland (1) and Leverhulme (1) funding to allow development or completion of projects. University support for ECRs includes the 'Think Ahead' programme of discipline-tailored induction, mentoring, and career support (including grant-writing workshops and events (e.g. *Gradschool*, *Researcher Mentoring*) facilitating networking across disciplines), while the IMPACT mentoring scheme supports Mid-Career, and the 'Futures' programme senior, female academics. Senior staff mentor within IMPACT and Hadley provides academic guidance. Moreland and Hadley attended the Sheffield Leaders' programme (nominated for *THE* award 2013) promoting research excellence, intellectual leadership and public value. Hemer attended the 'Crucible' ('creating outward facing researchers') component of Think Ahead for ECRs.

Research is part of annual staff review (SRDS) and a major criterion in **career development**: the annual departmental promotions panel considers all staff. Since 2008, 12 staff (50%) have been promoted: to Senior Lecturer (5), Reader (4) and Professor (3). The University's 'exceptional contribution' scheme has also rewarded Crewe and Tyers for outstanding achievement.

The DDRI, Head of Department (HoD) and a member of the research committee hold **Research Support** meetings annually (and additionally as required) with all academic staff to review current plans, including study leave; future research and outputs; and support needed to achieve these. The DDRI and HoD review study leave reports. 7 experienced Departmental colleagues mentor all new staff, staff returning from leave, and by request. The University R&IS support grant applications and project management. Dedicated Faculty officers disseminate information and provide training on research funding and collaborations by email, intranet and focussed meetings. Draft grant applications are reviewed within the Department (and, by request, Faculty).

Opportunities to follow and discuss research include weekly lunchtime seminars through the academic year with external speakers (in 2013 devoted to our 50th anniversary) and frequent ad-hoc guest lectures by visiting scholars (section e). Staff also run and participate in regular events such as the annual SCAA round table and the monthly Medieval and Ancient Research Seminar (MARS, bringing together Faculty research on the ancient and medieval worlds).

The creation of a large community of **ECRs** (mentored within the Department and with the same access to Departmental/Faculty research facilities and funding) has been key to our developing research environment. Since 2008 we have employed 49 doctoral and postdoctoral RAs (> 20 EU funded through networks and ToK) and provided training/expertise for external students from collaborating institutions. We are committed to developing post-doctoral opportunities as a transition between PhD and permanent academic posts, e.g. external awards from BA (Hemer, Peters) and Esmée Fairbairn Fund (Crewe). Visiting researchers are supported through funding from international agencies such as Santander, Erasmus and charitable donations and are allocated senior research mentors. These visitors have subsequently established collaborations with a potential for funding, given research seminars and worked with PGRs and PDRAs.

The University is a 'Russell Group' leader in fostering good research practices (GRP), recognising that excellence requires intellect and integrity, and that cultures of integrity underpin research environments. The Department follows the University's Good Research & Innovation Practices Policy (which reflects our perspective because of our contribution to consultation on a draft version). Ethics are embedded in all staff and student research, guided by the University's policy on ethics and intellectual property, with advice and monitoring via a Departmental Ethics Committee (chair: Nystrom). Sheffield is the only Russell Group university with compulsory GRP training (designed by a University Task & Finish Group chaired by Hadley) for all PGRs.

ii. Research students

Research students are the future of our field, so selection of high-quality students and excellent training are vital. This is reflected by the large number of PGRs wanting to study in Sheffield: registered FTEs remained relatively constant throughout 2008-13 (mean 39), placing us in the top 20% of Archaeology Departments 2008-13. The quality of our students is reflected in part by studentships gained: of 70 starting between 2008 and 2012, 26 (37%) had external funding (including 15 RCUK and 2 EU framework ESRs) and 25 (36%) had University/Faculty awards (including 1 University Prize Scholarship). We also received AHRC funding for 6 research preparation Masters students. Our doctoral admissions committee (5 academics) reviews all PhD applications. Recruitment follows equal opportunities guidelines, with offers based on academic record, references, quality of proposal and ability to supervise the project in the Department or Faculty/University. Most students are from the UK or EU (e.g. Oxford, Cambridge, Durham, UCL,

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Bristol, Thessaloniki, Lisbon), but 25% are international (e.g. Boston, Dalhousie, Melbourne, New York, South Africa, Tartu, Tsing Hua Universities), a 15% increase on 2008 reflecting our strategy of internationalisation. 75% of PGRs are recruited from our PGT programmes; our Masters degrees provide training in research skills, specialist approaches, planning and presentation. 55% gained a Distinction at PGT, 31% had First-class honours degrees. PGRs flourish in our research culture, contribute to our standing in the community and reflect our research ethos; 82.4% of PGRs agreed they had developed contacts or professional networks during their programme (University and sector average 69% - Postgraduate Research Experience Survey (PRES)). They feed into our research strategy *after* completion through subsequent postdoctoral positions, continuing collaborations and by disseminating our ethos and publicising our Department. New PGRs receive thorough **induction**, with complementary elements covered at University, Faculty and Department level (commended by QAA).

The University's 2012 *Research Student Proposition*, against which disciplines benchmark themselves, outlines what PGRs can expect from Sheffield and what Sheffield expects in return. The December 2012 QAA institutional review praised Sheffield (highlighting aspects of provision for research students as good practice and making no criticisms), marking significant progress on the 2008 audit; QA is now embedded and consists of an annual review (in which research students contribute their perspectives on quality of provision), a thematic review and a biennial survey.

PGR training and career development is delivered by the University's comprehensive Doctoral Development Programme (DDP, design led by Hadley), a positive aspect of PGR provision highlighted by QAA. The DDP begins with a Training Needs Analysis and includes subject-specific and transferable skills courses (the latter accessible *inter alia* through 'Think Ahead'). RCUK-funded PGRs are encouraged to attend funder-provided professional training/career development (e.g. Ten Harkel, AHRC Library of Congress). PGRs receive regular supervision and monitoring: each has two supervisors (often across thematic boundaries), one of whom they meet monthly (QAA considered monitoring of supervisory meetings effective), producing a report on progress to date and future goals. Departmental and Faculty Postgraduate committees review six-monthly reports. Students register for PhD only after a successful confirmation interview, assessment of a thesis chapter, and oral presentation after their first year. In the 2013 PRES, 91% of students agreed that their ability to apply appropriate research methods, techniques and critical skills had developed during their programme (cf. UoA17 sector 86%). Most PGR students take the opportunity of teaching experience in tutorials, laboratory classes, and short courses (e.g. osteology, zooarchaeology); PGRs are offered dedicated training in Teaching Assistant workshops. Some act as STEM ambassadors in the University's outreach programme.

The Faculty Learned Societies Fund offers ≤ £350 three times a year to attend meetings or conferences. PGRs have also successfully applied to the Faculty's Petrie Watson fund (≤ £750 for study and travel) and external sources (e.g., Canadian Centennial Scholarship Fund, Association for History of Glass, Leakey Foundation).

The Department has a **strong postgraduate research culture**. Under the University's '*Research Student Proposition*' PGRs can expect to be treated as professional colleagues and members of an intellectually stimulating community. They have dedicated work and social space in the Graduate School; participate fully in Departmental research culture, organising workshops and our weekly seminars (including our 50th anniversary series); have graduate-led physical and virtual discussion groups (e.g. Aegean Archaeology, Prehistoric, Mountain Archaeology, Archaeomaterials) with internal and external members; and are active in many national organisations (e.g. Historical Metallurgy Society). PGRs run the on-line journal '*assemblage*' (ISSN 1365-3881, established 1996, at issue 12). PGRs are encouraged to produce research publications and conference presentations; all publications are reviewed internally in supervision and PhD training. Publications have appeared in international journals such as *J. Archaeological Method & Theory*, *World Archaeology*, *Environmental Archaeology*, *Quaternary International*, *J. Anthropological Archaeology*, book chapters and co-edited books (e.g. Albarella & Trentacoste, *Ethnozooarchaeology*; Ten Harkel & Hadley, *Everyday Life in Viking-Age Towns*; Hadjikoumis, Robinson & Viner, *The Dynamics of Neolithisation in Europe*; Wilkinson, Sherratt & Bennet, *Interweaving Worlds: Systemic Interactions in Eurasia*). In addition to conference presentations at SAA, AIA, EAA, BABAO, Archaeometry and AAPA, PGRs have organised conference sessions (e.g. TAG2012; Territórios de Fronteira 2012, Portugal), won international conference prizes (e.g. CAA poster prize) or been awarded study placements (e.g. Fitch Laboratory Bursary). Some have

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been interviewed on radio/TV (BBC East Anglia; 'Digging for Britain' BBC2). International staff collaborations create opportunities for PGRs to work abroad: since 2012, 6 have participated in a Sheffield/Barcelona research exchange; other funded exchanges include 2 to Athens (EU), and one each to Istanbul (University fellowship), Italy (Faculty scholarship), Athens/Istanbul, and Portugal (Santander mobility). The success of our PGR training is reflected in high submission/completion rates (2008-13, 82% submitted within 4 years) and career destinations: lectureships and/or research positions at Aberdeen (Jorge), Bournemouth (Craig), Chester (Teather), Oxford (Ten Harkel, Hommel), Sheffield (Hemer, Crewe), EH (White), CNRS Paris (Hadjikoumis), Heidelberg (Karagianni), Leiden (Chan, Tsoraki), Leuven (Harrell); and consultancies, museums or archaeological organisations in UK, Greece, Italy, Canada and USA.

d. Income, infrastructure and facilities

Income: External research income during the REF period (reported in REF4) has risen impressively by 44% from £3.3M (RAE2008) to £4.75M in 2008-13 despite an increasingly competitive environment and fewer staff (c. £230K per academic). Of new grants secured during the period, £2.9M is from the EU. Large research consortia have been particularly successful: Jones, ERC Advanced investigator grant (£1.04M of c£1.68M); Day, Doonan and Jackson, EU FP-7 partner NARNIA (£629K of c£4M); Parker Pearson and Albarella, AHRC (£573K); Carroll, EU culture programme (£308K of c£2.05M); and 6 Marie Curie IEF Grants to Albarella (2), Day, Doonan, Moreland and Bennet (nearly £1M). **Other funding sources** include RCUK, Royal Society and BA (£1,591K), UK and overseas charities (£233K), UK central government and local authorities (£636K), EU and Government bodies (£1,504K), and non-EU public corporations (£24K). Non-UK sources include Santander, Google, National Geographic, Institute for Aegean Prehistory and the Anza Borrego foundation. All staff have applied for research funding, and nearly 90% have been successful in this period, demonstrating the value of our support and the departmental strategy of targeting prestigious, international and multi-sectoral funding sources.

University financial support including the Faculty 'rapid response fund' (≤ £400 with larger sums from a strategic fund) and Learned Societies Fund (for staff attendance at ≤3 conferences/year) act as 'seed money' for project development, funding applications and other activities fulfilling our research strategy. Ten staff have won Faculty Research Enhancement and Innovation awards for conference hosting/participation, fieldwork, archive research and scientific analysis. £891K from external consultancy (much through ARCUS, now Wessex Archaeology) reflects strategic prioritisation of research with public engagement, policy and commercial applications.

Infrastructure and facilities: The University Equipment Fund (£521K) and Alumni Fund (£109K) have made major investments in **Departmental infrastructure** in the past five years: a refurbished lecture theatre for lecture series, small conferences and courses adjacent to laboratory facilities; and redeveloped space for administrative staff, enhancing support for research activities. Our 5 **laboratory and technical support staff** work across our research themes, supporting staff, PGRs and consultancy. We have 8 **laboratories**, with preparation rooms, dedicated to bioarchaeology, geoarchaeology and materials analysis, and extensive reference collections in materials, plants and human and animal osteology. Alumni donations equipped a 'digital osteology laboratory' for staff and 6 PGRs (£60K) and contributed to extended bone storage and new remote-sensing equipment (£24K). We have created new laboratory space for human osteology, rehoused our osteology collection and provided new research laboratories for archaeobotany. We also **collaborate** with the departments of Geography, Animal and Plant Sciences, and Engineering to share laboratory facilities. The EH-funded dendrochronology laboratory and staff were part of our infrastructure until 2012. In 2010 we appointed a technical manager to develop and manage our laboratories to maximise staff research time and enhance the research process, while a new office manager administers research for staff, PDRAs and PGRs.

The Department takes full advantage of **Faculty infrastructure** in the Humanities Research Institute (HRI) and Jessop West Exhibition Space for meetings, conferences, seminars, exhibitions, and specialised digital humanities support, for which the HRI is a leading UK centre. The HRI has assisted database development for research projects, including Manor Lodge (Hadley) and 'Kinecting up the past' (with Creswell Heritage Trust; REF3b). The Department's research is supported by extensive library facilities: 1.5M books and subscriptions to 27,000 e-journals, 25,000 e-books and 260 databases. In 2008-13, Archaeology-specific library expenditure was £151K, while we also use literature from other disciplines extensively.

Sheffield promotes and facilitates **interdisciplinary research**. We contribute to research centres

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such as Historical Archaeology, Sheffield Classical Association, Archaeobotany and Landuse (section e); we collaborate with Biological Sciences (Albarella, Jones/Charles), Medical Sciences (Hemer, Johnston), Mathematics and Statistics (Jones, Pettitt), Engineering (Day, Jackson, Merrony) and Geography (Ayala); we engage in major University initiatives across disciplinary boundaries (e.g. Project Sunshine - [Doonan]; Researching Community Heritage [Crewe, Doonan, Johnston, Merrony], MARS [Rempel] and Medical Humanities [Craig-Atkins, Hemer]).

e. Collaboration and contribution to the discipline or research base

The Department is committed to advancement of our discipline in several ways. **Collaborations** with other UK academic institutions are both extensive and productive, generating high levels of funding (see section d). Ongoing external UK collaborations with local/national government organisations provide access to facilities and funding (e.g. English Heritage [Crewe, Johnston, Doonan, Jackson, Albarella, Parker Pearson, Pettitt]; Historic Scotland [Parker Pearson]; Peak District and Snowdonia National Parks [Johnston]; Sheffield City Council [Doonan, Johnston]; Sheffield Museums Trust [Hadley]; British Museum [Hadley]; NERC Isotope Geosciences Laboratory [Jones, Hadley, Albarella, Hemer, Halstead]. We actively collaborate with the charitable sector as exemplified by our impact case studies (e.g. Creswell Heritage Trust, Sheffield Industrial Museums Trust, Friends of the Porter Valley). We have gained funding for these activities through HEIF4KT (e.g. Johnston with the Royal Commission for Ancient and Historic Monuments of Wales). We hosted a Leverhulme-funded Artist in Residence (Bevan), whose large-scale striking images of 'archaeology in action' displayed throughout our building make our research activities visible to visitors, students and staff. We collaborate with the commercial sector, through our role in the management of ARCUS (until 2009), through grant initiatives (e.g. KT grants to Chamberlain and On-Site Archaeology Ltd, White Rose grants to Crewe with York Archaeological Trust, Point Blank, Red Ladder and Northumberland Theatre Companies, EH and Leeds and Manchester Universities) and as partners on commercially funded projects (Johnston with East Moors and Cwm Prysor Upland Surveys, Doonan with Niton UK). Our **international collaborations** are extensive, including partners in Europe, North America and South Africa, as evidenced by co-authored outputs (see REF2). This is demonstrated by our success in gaining collaborative funding including 2 EU network and 1 ToK grants (25 partners) and 1 NSF/AHRC project (3 collaborators), 1 AHRC award (5 partners). We also have research collaborations with international heritage organisations (e.g. Royal Institute for Cultural Heritage, Brussels [Carroll], British School at Athens [Bennet], Ministry of Culture, Greece [Halstead] and museums (e.g. Naturhistorisches Museum Vienna [Carroll], National Museum South Africa [Kuykendall]). We have been particularly successful in winning funds to employ **early career researchers**, including ECR-funded exchanges, of which a Marie Curie Training award (Day) for 3 new-generation researchers (Frahm, Gilstrap, Montesana); a Marie Curie Transfer of Knowledge Programme (Jones/Charles) employing 10 experienced researchers (Crowther, Ertuğ, Herbig, Kutterer, Longford, Madella, Maier, Out, Pessin, Zurro); and 6 Marie Curie IEFs (Alberti, Carvajal, Minniti, Molloy, Sebastiani, Valenzuela). We have had 2 BA Fellows (Hemer, Peters) and 1 Alumni funded PDRA (Tomkins). In 2012 we set up a research training programme for PGR students with Barcelona (6 students exchanged to date). Competitive awards (e.g., Santander, Erasmus) have funded many short-term research visits by international scholars: e.g. Abdul Wali Khan (Mardan, Pakistan), Buxeda (Barcelona), Colominas & Valenzuela (Barcelona), Detry (Lisbon), Galindo (Madrid), Hanks (Pittsburg), Jiminez Puertas (Granada), Malpica (Granada), Mazarakis (Thessaly), Orengo (Tarragona), Salvagno (Bolzano), Stürmer (Berlin).

We have contributed significantly to the discipline as **Peer Review College** members for NERC (Jones), AHRC (Day, Hadley, Halstead, Jones), Australian Research Council and Academy of Finland (Bennet, Moreland), CNRS (Halstead). Staff have served on the starting grant evaluation panel (Jones) and Pool of Reviewers for ERC (Barrett, Halstead), and on RAE2008 and REF2014 sub-panels (Jones). Other significant review panels include NERC Inductively Coupled Plasma Facility steering committee (Jackson), Spanish Humanities and Social Sciences Research Board, and Stonehenge Advisory Panel, English Heritage (Barrett), F.R.S.-FNRS and Greek Ministry of Education (Doonan, Halstead). Since 2008 staff have reviewed **grant proposals** for >30 funding agencies, including NSF (7 staff), AHRC (6), National Geographic (6), ERC (5), Wellcome (4), NERC (3), SSHRC (3), Leverhulme (3), BA (2), Nuffield (1), and bodies from Australia, Canada, Finland, Israel, Kazakhstan, South Africa, Sweden, USA and European partners.

Staff have served on **editorial boards** of >20 prestigious international publications including

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Early Medieval Europe (Hadley, editor), *Annual of the British School at Athens* (Sherratt, editor; Halstead), *Post-Medieval Archaeology* (Willmott, associate editor), *Journal of World Prehistory* (Pettitt, advisory editor), *Journal of Archaeological Science* (Jones), *Environmental Archaeology* (Albarella, Jones), *Anthropozoologica* (Albarella), *Oxford Journal of Archaeology* (Sherratt, Bennet), *Cambridge Classical Journal* (Bennet). Ayala was guest editor of *Geoarchaeology* (2010).

Staff elected to professional bodies and learned societies include Fellows of the British Academy (Dennell [2012], Jones [2013]), Society of Antiquaries (Hadley, Carroll, Willmott, Jackson, Sherratt, Pettitt) and IfA (Merrony, Willmott, Johnston). Further **markers of esteem** include Archaeologist of the Year (*Current Archaeology*, 2010) and AIA Samuel H. Kress Lectureship in Ancient Art (for distinguished foreign scholars) to Parker Pearson, and Archaeological Book of the Year nomination (2010) for Pettitt's 'Britain's Oldest Art'. All staff hold positions in professional associations and learned societies (>20), including the International Council of Archaeozoology (Albarella, Secretary), History of Glass (Jackson, President), Society for Medieval Archaeology (Hadley, Secretary), International Workgroup for Palaeoethnobotany (Jones, Steering Committee), Society for the Study of Human Biology (Kuykendall, Programme Secretary), Post-Medieval Archaeology (Willmott, Membership Secretary; Crewe, Newsletter Editor), Prehistoric Society (Johnston, conservation coordinator), Mediterranean Archaeological Trust (Bennet, Trustee), Knossos Trust (Bennet), British School at Athens (Halstead, Bennet, Sherratt, Jones), Historical Metallurgy Society (Doonan), Comité International Permanent des Études Mycéniennes (Bennet, UK representative). Staff are active in **interdisciplinary centres**: Jones leads the Sheffield Centre for Archaeobotany and Landuse; 8 staff are members of the Sheffield Centre for Historical Archaeology; 5 of the Sheffield Centre for Drylands Research; 10 of SCAA; Rempel and Carroll are members of Sheffield Classical Association; Crewe of the University Centre for Visual Studies; Hemer and Craig-Atkins of Medical Humanities; and Moreland is on the management committee of the Sheffield Centre for Early Modern Studies (SCEMS).

Sheffield staff regularly present their research at national and international venues (e.g. AIA, Archaeometry, American Association of Physical Anthropologists, QRA, Viking Congress, SAA). Their 131 **invited** lectures include: 20 **keynote/plenary** lectures, e.g. at the Quaternary Research Association (Jones), Netherlands Institute for Heritage (Parker Pearson), International Congress on Medieval Studies (Hadley), Netherlands-Flemish Institute Cairo (Sherratt); 9 invited lectures to the University of Catania (Halstead); and numerous invited lectures by Parker Pearson on Stonehenge (REF3b). Staff have held **visiting positions** at prestigious overseas institutions: Carroll (ET Salmon Visiting Professor, McMaster), Barrett (one of 20 invited speakers at opening of Linnaeus University), Bennet (Visiting Professor, Göteborg), Parker Pearson (Visiting Professor Aarhus), Halstead (Santa Fe Institute interdisciplinary working group on post-Neolithic Europe). We have **organised more than 30 national and international conferences**, sessions, workshops and day-schools on a range of themes: European Meeting for Ancient Ceramics (Day), Ancient World Systems (Barrett, Bennet, Sherratt), Society for Medieval Archaeology conference (Hadley), 'Personal Ethics, Social Justice' at WAC (Albarella), Clothing and Identity (Carroll), pXRF and petrology workshops (Day, Doonan), Bronze Age Forum (Johnston), Archaeologies of the Everyday (Moreland), Dressing the Dead (Carroll, Rempel). Our 2013 50th anniversary lecture series showcased former staff and students who have made major contributions to archaeology, including G. Barker (Disney Prof., Cambridge), Lord C. Renfrew of Kaimsthorn (Disney Prof., Emeritus, Cambridge), M. Heyworth (Head CBA) and J. Winters (editor *Internet Archaeology*). We host the annual international SCAA themed round table (led by Bennet) published as an edited volume. The Department is committed to enhancing the public profile of, and research-user engagement with, the discipline by providing **methodological training** to the next generation of researchers; Doonan (pXRF) 2 courses for >20 attendees, Day (ceramic petrography) 2 courses for 10 attendees, Jackson (glass) 2 courses with 8 and 20 attendees for EU training networks, Albarella (archaeozoology) 4 courses with 80 attendees p.a.

Our staff have served on **external professorial promotion panels**: Thrace (Bennet, Halstead), Cyprus (Bennet), Leicester (Halstead), UCL, Bristol, Copenhagen, Pennsylvania, Brown, Field Museum Chicago (Bennet), Teeside, York, Lampeter, Birmingham, Toronto (Chamberlain), Dublin (Moreland), UCL, Exeter (Jones). We **examined** >50 external PhDs at 18 UK and 19 overseas universities including: Durham, Cambridge, Southampton, UCL, York; VU Amsterdam, Budapest, Cape Town, Clermont Ferrand, UCD, Florence, Göteborg, Montpellier, Macquarie, Paris-X Nanterre, Stockholm, Sydney, Tarragona, Witwatersrand.