

Institution: University of the Highlands and Islands
Unit of Assessment: 15
<p>1. Unit context and structure, research and impact strategy</p> <p>The 2014-21 REF cycle has been a transformational period for Archaeology within the University of the Highlands and Islands (UHI). In REF2014 the formation of an institute was stated as the major objective – one that was achieved the following year in November 2015. The Archaeology Institute (https://www.uhi.ac.uk/en/archaeology-institute/), was funded by capacity-growth grants totalling £536k over three years from Highlands and Islands Enterprise (HIE), Orkney Islands Council (OIC), Robertson Trust and UHI Executive Office (EO). The capacity growth provided support posts (operations and administration) and specific tailored appointments (Marketing and Promotion, and Outreach and Lifelong Learning) to support and boost the research, knowledge exchange and dissemination activities of the Institute, with the aim of enhancing the research activities, outputs and impact. Indicators such as increased research income, research outputs (including three monographs in the new <i>UHI Archaeology Institute Research Series</i>), reach and impact detailed in this submission clearly demonstrate the success of this strategy.</p> <p>The Mission Statement of the UHI Archaeology Institute encapsulates its achievements to date and its research and impact strategy:</p> <p><i>“The UHI Archaeology Institute is a world-class teaching and research organisation dedicated to advancing our understanding of the historic environment through the creation, interpretation and dissemination of archaeological knowledge. The Institute commits to providing a locus for innovative research, university education and lifelong learning in outstanding heritage environments. We support local, regional and global communities to explore and promote their heritage and development through our expertise in consultancy and research. Our forward thinking and interdisciplinary approaches to archaeological and heritage research, and our worldwide links and collaborations, create in the UHI Archaeology Institute a vibrant international centre of excellence.”</i></p> <p>In this the Archaeology Institute (AI) epitomises the UHI Vision: ‘We will be locally based, regional in structure and have national and international reach’ and importantly the UHI Mission: ‘to have a transformational impact on the prospects of our region, its economy, its people and its communities’ (UHI Strategic Vision and Plan 2015-2020). The creation of the Institute was supported with development funding because of the recognition in OIC and HIE of the ‘situated research’ potential of archaeology in regeneration including strategies to help reverse rural depopulation, and to boost the local economy through heritage tourism growth. Both our Impact Case Studies (ICS) demonstrate success in these aims. The overall impact that the Institute development has had on economic sustainability in the region over the last REF cycle is shown by a recent Economic Impact Report (Brian Burns Associates 2020) which calculates a contribution to the Orkney economy of £2,134,851 expenditure impacts and the support of 79.3 jobs for the year 2019-20 through the activities of the AI: given the impact of Covid-19 on tourism and fragile rural economies we recognise our role to be even more crucial over the next REF cycle.</p> <p>The university is a unique institution in having a dispersed partnership structure of 13 regional colleges and research units across the Highlands and Islands of Scotland. The Archaeology Institute is based in the Orkney College (OC) campus. Our goal for the next REF period is to oversee a further transformational step in the development of the Institute to a distributed and regionalised Institute led from Orkney with capacity and specialisms at other UHI campuses – which it is intended will replicate the economic and social impact of the existing Archaeology Institute activity in Orkney - drawing on existing research expertise and UHI facilities but also responding to UK and Scottish government demands both for upskilling and research innovation within the region (e.g. <i>Scottish Islands Growth Deal</i>) and for the internationalisation of research (e.g. through the Scottish Government’s <i>Arctic Connections</i></p>

policy framework and the launch of the *Ireland-Scotland Joint Bilateral Review 2021-25*). Digital heritage and a focus on the Tourism sector are objectives as part of our contribution to the region's and our own Covid-19 recovery and resilience.

The additional funding for the creation of the Archaeology Institute in 2015 catalysed a substantial expansion of Archaeology academic staff within this REF cycle. From the core UHI Archaeology Department academic staff of Professor Jane Downes, Ingrid Mainland, James Moore, Scott Timpany and Nick Card, a further six academic posts have been created: Professor Colin Richards, Sarah Jane Gibbon, Jen Harland, Daniel Lee, Ragnhild Ljosland, Antonia Thomas, with Anne Bevan, Head of Orkney College Art and Design, joining the UoA, and augmented by a number of visiting appointments: Visiting Readers Hugo Anderson-Whymark, Gerry Bigelow, Olwyn Owen, and Visiting Professors Mark Edmonds, Leslie King, Astrid Ogilvie.

Research Strategy

In REF2014 our UoA17 interdisciplinary submission jointly with Geography and Environmental Studies was encapsulated by two broad overarching research areas: 'Sustainability' and 'Landscape & Culture' with research strengths identified as: *Scottish Prehistory; Heritage Management*, and *Marine and Coastal archaeology*, with emerging expertise and objectives for development within *Environmental Archaeology* and *Historical and Modern Archaeology*.

The new staff appointments together with an ongoing review of our research strengths and clusters, a process undertaken collaboratively through UHI Research Area Revalidation (2018) and refined through regular research 'away-days', has clarified new and emerging research priorities, and led to a restructuring of research themes which staff can cross between.

Sustainability is an overarching concept and provides a framework for our research and impact activities and strategy, enveloping the themes: **Landscape, Seascape and Place; Prehistories; Cultural Heritage; Environmental Archaeology; North Atlantic Communities with Islands and Coastal** and **Climate Change** themes of growing importance and **Art/ Archaeology** as growth success within our **Interdisciplinary** portfolio,.

Sustainability All staff across the AI are embraced within this paradigm, and **Sustainability** is a cross-cutting strength that has been and will continue to be fundamental to the AI. The sustainability of communities and practices in the past and the present (see Impact case Studies) is a focus of the AI research activities and includes a specific focus on Learning for Sustainability (Downes, Mainland, Richards), Heritage Management (e.g. World Heritage) (Downes, Moore, Richards, Thomas, Lee) and on societal resilience (Gibbon, Ljosland, Lee) and adaptation to environmental change in island and coastal regions (Harland, Mainland, Timpany), with active research projects in Orkney, Shetland and the Western Isles (All), Scottish Highlands (Timpany, Lee), Ireland (Richards, Timpany), Norway, Iceland and Greenland (Mainland, Gibson, Ljosland), Rapa Nui (Easter Island) and the Cook Islands (Richards, Downes), and now Africa (Downes).

Landscape, Seascape and Place (Bevan, Card, Downes, Gibbon, Lee, Moore, Edmonds) Our research within this cluster is concerned with developing methodologies for terrestrial and marine survey and also innovative approaches for conceptualising landscapes and seascapes. Publication of the *Heart of Neolithic Orkney WHS Geophysics* survey culminates over a decade of work on these important landscapes (Card, Downes, Moore, Edmonds). New appointments Gibbon, Lee and Ljosland apply concepts of place and identity to reconceptualise historical land- and seascapes through belief systems: pilgrimage in *Magnus 900: St Magnus Way* (NHLF), animism in *Landscapes of Change Rousay* (OIC, Historic Environment Scotland (HES)), witches in *Witchcraft Memorial Project* (OIC/Orkney Heritage Society) respectively. A place-based perspective also underpins Gibbon's contribution to the *Thing Project* (NPP), Bevan and Downes' *Wilder Being* (AHRC/University of London SAAS) and Bevan's *Orkney: Beside the Ocean of Time* (AHRC) which draws on interdisciplinary approaches within a deep-time perspective to map future uses of land and sea.

Prehistories (Card, Downes, Richards, Thomas, Timpany, Anderson-Whymark, Edmonds)

Scottish prehistory continues to be a major strength with the increased scale of research at the *Ness of Brodgar* (Card; OIC, National Lottery Heritage Fund (NLHF), EU Leader, various) having wide reaching impacts on understanding of Late Neolithic society as well as making significant contributions to economic development and outreach (Impact Case Study Neolithic (ICS Neo)). This area has been further strengthened by new appointments, with major monographs arising from Richards' *Cuween-Wideford* and the *Stonehenge Environs* projects and Thomas' innovative research on art and architecture in Neolithic Orkney. Our world-leading research on prehistoric societies has widened to include Polynesian societies, with the GCRF-funded *Pacific Islands Tangible Cultural Heritage (PITCH)* project in the Cook Islands (Richards, Downes 2018-2022).

Cultural Heritage (Downes, Gibbon, Ljosland, Thomas)

Our research on the Heart of Neolithic Orkney World Heritage Site (HONO WHS) is an exemplar of cultural heritage as a vehicle for sustainable development (ISC_Neo), a model which we are now applying elsewhere (e.g. Gibbon, Lee; Leader, NHLF), including internationally (Richards, Downes; GCRF). Likewise, our work on climate change mitigation and heritage futures has expanded from a primary expertise on sea level rises and coastal erosion in Scotland (c.f. Downes, [Climate Risk Assessment for the Heart of Neolithic Orkney World Heritage Site \(historicalenvironment.scot\)](https://historicalenvironment.scot/)) to encompass an international arena of climate impacts more widely in *Values-based Climate Change Risk Assessment: Piloting the Climate Vulnerability Index for Cultural Heritage in Africa (CVI-Africa)* (Downes GCRF AHRC/DCMS 2020-21) and IOC/COMS/CyArk and Google Arts and Culture *Heritage on the Edge* (Downes <https://artsandculture.google.com/project/heritage-on-the-edge-rapa-nui>).

Currently, the AI is poised for leadership in the area of *Climate Change and Heritage* with activities already well established, and a strategic objective is to develop the emerging expertise and leadership of the AI in sustainability relating to climate change and heritage. Heritage tourism, digital heritage, and critical heritage are also research objectives, as well as heritage foods such as whiskey and cereals (Downes, Timpany), heritage animal breeds (Mainland) and the heritage of belief (Gibbon, Ljosland).

Environmental Archaeology (Harland, Mainland, Timpany, Bigelow, Ogilvie)

Identified for growth in REF2014, Mainland has applied stable isotopes and dental microwear to explore herd resilience and mobility in the Northern Isles and has advanced understanding of the impact of seaweed use/consumption on stable isotope values. Harland is pioneering methodologies for identification of fish paleopathologies and is contributing to understanding of the process of domestication in fish. Timpany's work on early Holocene inter-tidal deposits across Scotland is furthering understanding of post-glacial palaeoenvironmental and climate change and significantly has revealed new evidence of the presence of Mesolithic communities in Orkney (*Addressing Critical Changes in the Orcadian Landscape*; Carnegie) while his research on charcoal and other plant remains in Irish burnt mounds is challenging received interpretation of these sites. The objective in this theme is the development of further archaeological sciences to complement existing strengths (e.g. in geoarchaeology, osteoarchaeology).

North Atlantic Communities (Harland, Gibbon, Lee, Ljosland, Mainland, King, Ogilvie, Owen)

Our research here is providing new perspectives on early Medieval through to early 20th century N. Atlantic societies applying novel approaches such as the archaeologies of commensality (Mainland; British Academy) and pilgrimage (Gibbon; EU Leader; NLHF). Runology and historical sociolinguistics (Ljosland) is a further strength. Research is underpinned by fieldwork at the Viking to early modern farmstead, Skail farm (Mainland, Lee, Harland, Gibbon; NLHF, OIC, Rousay Egilsay Wyre (REW) Development Trust), and post-excavation analysis of the Late Norse site at *Tuquoy*, Orkney (Owen, Mainland, Gibbon, Harland, Timpany; HES). A significant achievement is the 2020-23 joint AHRC-German Research Foundation (DFG) (Gibbon/Mainland/Harland) *Looking in from the Edge (LIFTE)* project on the impact of international commercialisation on the North Sea region in the 15-17th centuries AD.

Island and Coastal Archaeology (Downes, Richards, Timpany, King, Ogilvie)

This emerging theme supports UHI priorities within its UHI Islands Strategy (www.uhi.ac.uk/en/t4-media/one-web/university/about-uhi/facts-and-figures/publications/pdfs/UHI_IS_ENGLISH_2020.pdf), and poises us to influence and maximise the Islands Deal UK Government funding. Strategically, the international AI Inaugural Conference in 2017, *Our Islands, Our Past* connected with the new Scottish Government's 'Islands Bill' focussed on islands research and formed the spring-board for the collaboration between UHI Archaeology Institute and the Local Authority Archaeologists from Orkney, Shetland and the Western Islands to create a *Regional Framework for Scottish Islands' Archaeology (SIRFA)* (<https://www.sirfa.co.uk/>), funded by HES 2019-2022, as part of Scotland's Archaeology Strategy ([SAS-Delivery-Plan-16Jan2017.pdf](#) (archaeologystrategy.scot)). Combining archaeological research with small islands development issues in an international context is the 2018-22 GCRF *PITCH: Cook Islands* entailing co-producing tourism development, education and research tools with archaeological heritage assets (Downes, Richards). In Orkney the NLHF/OIC/HES-funded *Northern Isles Landscape Partnership Scheme (NILPS)* has been shaped by our Historic Environment Assessment for the programme and resulted in collaborative projects (Downes, Richards, Lee, Gibbon) *Tombs o' the North* and *Oral Traditions*.

Interdisciplinarity Running through all our research activities is a strong commitment to interdisciplinary research. The role of Downes and Mainland as UK representatives for the Humanities for the Environment (HfE) Circumpolar Observatory (<https://hfe-observatories.org/observatories/circumpolar-observatory/>), a network of researchers and institutions across the arctic and subarctic open new research avenues of considerable potential in *Environmental Humanities*. We are also project lead (Lee) in 'Orkney Energy Landscapes' project (2020-21) which offers fresh interdisciplinary perspectives. A new research network focussing on Scottish diet (*The Taste of the Nation*) was also established in 2019-20 (Mainland, Worthington (UHI Centre for History) and McRury (UHI Centre for Rural Health) in conjunction with universities of Aberdeen and Bradford and NHS Scotland provides an important future interdisciplinary focus.

Art/Archaeology (Bevan, Thomas, Lee, Moore, Downes)

This has been a key interdisciplinary growth area in our research portfolio, with cross-disciplinary output *Ocean of Time* (Bevan) and being the subject of our impact case study Art/Archaeology (ICS A/A). Ongoing projects and collaborations include Bevan's Co-I role in the *Creative Landscapes Futures Network* (AHRC) is an example of interdisciplinarity across Arts and Humanities, which also involves a wide range of stakeholders. Similarly, Thomas's and Lee's roles in the Royal Society of Edinburgh (RSE) *#3M_DO_2019 Network* exemplify cross-disciplinarity. Other examples the 'Festival of Deep Time' (Bevan; AHRC) and *YAARP* (Moore; OIC Culture Fund).

Approach to impact

The Impact objectives set out in our previous REF submission have all been met successfully, firstly; through the establishment of the University Innovation-funded UHI Knowledge Exchange Team, which has provided support to staff to engage with potential users of research outputs, has helped foster links with private and public sector users of research, and secondly, provided knowledge exchange and public engagement opportunities through sectoral groups, of which AI staff play active roles in Creative Industry and Tourism. The marked success of the UHI KE strategy (see IES) is evidenced in the awarding of two SCF Standard Innovation Vouchers - *Discovering Prehistoric Staffin* (2015 match-funded Staffin Community Trust, Lee) which has been followed through with a Student Placement Innovation Voucher 2020 -2021 funding an MRes studentship matched by the same partner (Timpany), and *Viking Village* in partnership with Robert Gordon University for Kyle & Lochalsh Community Trust (Lee).

The second main impact objective was the creation of new operational units – the objective example given as the Aracheology Institute - explicitly oriented to maximising the impact of our interdisciplinary research which, as evidenced in this submission, is being fully realised.

It is prehistoric, Neolithic, research findings that underpin the two impact case studies presented. Our impact case study '*Neolithic archaeology: contributions to the growth in heritage and tourism in Orkney and beyond*' is the outcome of sustained research within and around the Heart of Neolithic Orkney World Heritage Site and the '*Art/ Archaeology: Inspiring design and changing practice in Orkney's creative industries*' case study based upon research directly benefitting creative industry. These case studies exemplify our approach to achieving impact through:

- *aligning to key sectors in the regional and national economy*
- *our signature use of archaeology and heritage as a tool for sustainable development*

Our wider non-ICS contributions to economy and society are detailed in Section 4. Our strategy for Impact will in future align to the United Nations 17 *Sustainable Development Goals* ([THE 17 GOALS | Sustainable Development \(un.org\)](https://www.un.org/sustainabledevelopment/)) with the aim of promoting a culture of research and impact integrity wherein equality and justice are fundamental.

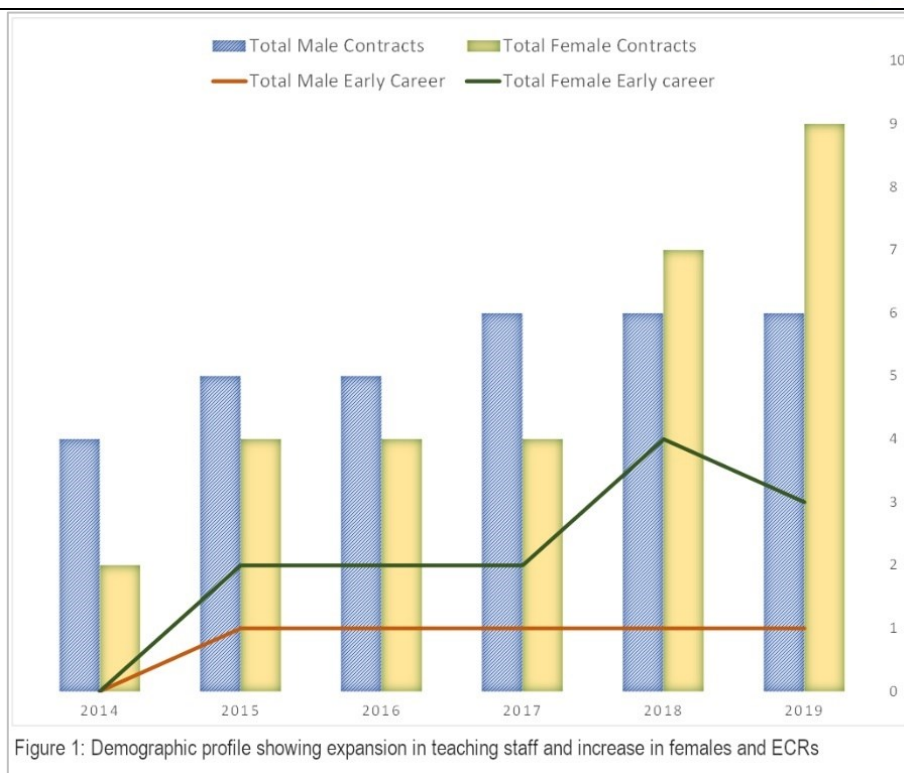
Open research environment and standards

Blended learning is a hallmark of the UHI, and it provides a ready-made vehicle for a 'virtual research environment' in which our research can be readily accessed. This has proved to be of exceptional value during the Covid-19 restrictions of 2020-1. An example of this practice is the availability on the web of text versions of particular VC seminars (e.g. the UHI HARC/SILK Research Cluster seminars: <https://idruhi.wordpress.com/>), and their recordings (<https://www.uhi.ac.uk/en/research-enterprise/res-themes/interdisciplinary-research-programmes/the-edge-call-for-contributions/recorded-seminars/>). Within the UoA monthly seminars showcasing our research (together with invited speakers) are accessible across the university network and have been opened to the public. The broader promotion of research programmes through, international, national and local lectures, knowledge exchange and public access to projects in the field and post-fieldwork, were recognised as important from the inception of the Institute (and the university), and therefore determine our areas of impact planning. Our virtual research profile for the UoA with global reach, and work with social media and the press is seen as a model for other HEIs. Openness of environment includes making research publicly available through the HES national record *Canmore*, and through entries in *Discovery and Excavation Scotland* (and therefore with Archaeology Data Service's OASIS). We conform to discipline requirements and best practice for the dissemination and storing of records and data. ORCA is a Chartered Institute for Archaeologists (ClfA) Registered Organisation and the Institute's professional frameworks and standards are informed through this association and staff ClfA members. A related objective is to increase the staff membership of, and engagement with, ClfA.

2. People

Staffing

Increasing staff numbers through the REF cycle both testifies to the dynamism of the Archaeology Institute and provides a broad range of expertise which allows a diversity of research (and attracts rising numbers of postgraduate students). Research (and teaching) strategies have created a staffing policy which balances an expansion of our range of expertise with providing depth in ongoing research themes (see Section 1). Current Institute staff include two Professors (Downes and Richards), a senior lecturer (Mainland), full time lecturer (Timpany), and five part-time lecturers (Gibbon, Harland, Ljosland, Moore, and Thomas). Additional staff include a lifelong learning and outreach archaeologist (Lee) and senior researcher Card. Together with a fully functioning commercial archaeology and consultancy unit (ORCA), and with the UHI Art department head (Bevan) this provides a broad and vibrant spectrum of research. Enhancing our research environment, the AI Visiting Readers and Professors actively participate in all areas, including research collaborations, seminars, lecturing and mentoring. The AI is directed by Downes with Mainland as curriculum leader and Richards as head of research; together with Higgins of ORCA these form the AI executive committee.



The Institute has a well-balanced age and gender profile with, from 2018, females forming the majority of academic staff (Figure 1). New staff appointments have targeted ECR (Thomas, Moore) and junior lecturers (Harland, Gibbon, Timpany) to ensure long term sustainability. We have a commitment to ensure continuity of service with four staff progressing from fixed-term to permanent contracts during this cycle. Career development is supported through initiatives such as the Advance HE Aurora leadership to address the under-representation of women in leadership positions in the sector, undertaken by Thomas in 2018. All lecturing staff are encouraged to seek professional recognition through the UHI ALPINE scheme which allows the university to award Fellowship of the UK Higher Education Academy. Since 2014, five Institute staff have gained Fellowship of the HEA (Timpany, Gibbon, Thomas, Moore, Ljosland) and one Senior Fellowship (Mainland).

Staff development and mentoring

The principles of the Concordat for Research Development are enshrined in the UHI research strategy and policy, and implemented via support processes and opportunities for staff. Research mentorship exists at the university and Institute levels, (<https://www.uhi.ac.uk/en/learning-and-teaching-academy/prof-devt/mentoring/research/>) providing peer-support for research staff at all career stages. Institute staff are appraised annually through Performance Development Review in parallel with short and long research planning and identifying opportunities for research training. This latter is provided internally by established researchers in the Institute, through the UHI Research Clusters (e.g. at the biennial UHI Research Conference, well attended by Institute staff) and externally through the Vitae scheme. All Institute staff are eligible to apply for UHI funded research leave with an internal rota in place to ensure equity of access. During the current REF cycle nine have successfully applied for a UHI sabbatical, with outputs including a monograph (Richards), a World Archaeology article (Mainland) and presentations at international conferences (e.g. Gibbon - EEA, Vilnius; Lee – CHAT, Arhus) leading to outputs. All staff are encouraged to apply for external funding to support research leave, with Mainland awarded a prestigious *British Academy Mid-Career Fellowship* in 2014, enabling a 12-month sabbatical. Through our individual research planning and newly-formed AI Research and Knowledge Exchange Committee we will focus on training and mentoring junior staff to increase research outputs through the new cycle.

An additional layer of support for all staff and students is via the UHI Knowledge Exchange team and sector groups ([Helping businesses innovate - Research specialisms \(uhi.ac.uk\)](https://www.uhi.ac.uk/helping-businesses-innovate-research-specialisms)) which provide innovation training for researchers and facilitate exchange between academia and business. We are systematically made aware of all relevant national KE initiatives, such as the Innovation Scotland, Interface, and relevant SFC innovation centres. This has led to several successful collaborations with SME and other enterprises (e.g. Innovation Vouchers and ICS A/A).

The staff and research of the AI contributes strongly to the networked virtual research environment of the university, and this in turn adds to the vitality of the Institute. An example being the UHI HARC/SILK research clusters (co-chaired by Richards and Mainland respectively) whose activities include the above-mentioned seminars and conferences. We also host monthly Institute Research seminars, again by VC, with international and UK-based speakers and offer a monthly VC-based journal club for staff and students where recently published articles are discussed and reviewed. During Covid-19 pandemic these virtual events have helped maintain our community of practice and have additionally served to widen our reach as the use of VC in this way has become normalised outwith the UHI (e.g. a recent seminar by our Visiting Reader Bigelow attracted and the launch of the *LIFTE* project attracted 102 and 93 attendees respectively).

Equality and diversity

In recognition of high occupational segregation both in local populations and in in professional and academic sectors, the UHI is taking targeted action to increase the number of women applying to senior roles. Orkney College UHI is pro-actively involved in UHI's Athena SWAN Bronze Institutional reapproval (November 2021), and are looking to submit a departmental application for Archaeology. Additionally, we will work to increase visibility of role models through UHI STEM Femmes student champions programme. The opportunity to work part-time has enabled several members of staff the necessary flexibility around child-care or other commitments to return to research. All staff involved in the REF process adhere to the UHI REF21 Code of Practice which provide a framework for transparency and equity attended relevant training, including for unconscious bias.

Research Students

Postgraduate research recruitment has increased significantly since 2014 (Figure 2). Three postgraduate research (PGR) students based at the UHI Centre for History and Lochs and Rivers Institute are co-supervised by Institute staff, underlining the inter-disciplinary nature of our research. University funding through the European Strategic Infrastructure Fund has supported 4 PGR students (including 1 with History). In 2018 the UHI became a full member of the Scottish Graduate School for the Arts and Humanities (SGSAH) AHRC Doctoral Training Partnership, bringing access to fully funded UKRI studentships and training opportunities, and in 2019 we were awarded our first SGSAH Applied Research Collaborative Studentship (with Heriot-Watt University and Orkney Museum). The development of an MRes Archaeology from 2017 has enabled a supported and structured route into research level study, including PhD, which is proving attractive and adds to the vibrancy of the research student body.

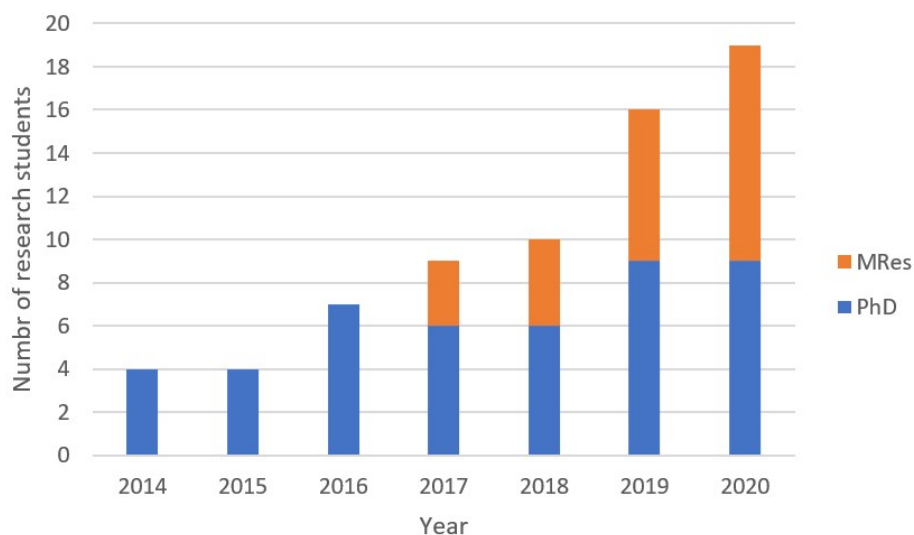


Figure 2: Showing the total number of research students supervised by UoA15 staff (includes three students co-supervised with Centre for History). Six students have completed in the current REF cycle, with two further having passed, award pending.

Our approach to postgraduate recruitment is based on research expertise, but additionally on capacity and on staff development. Supervisory teams juxtapose experienced staff who are able to provide a mentoring role and new supervisors, and where appropriate include staff from other UHI centres (e.g. Centre for History, Environmental Research Institute, Institute of Northern Studies), supervisors from external universities (e.g. Glasgow, York, Aberdeen) and non-HEI research organisations (e.g. HES). Through this mentoring process, and with new appointments, the number of potential lead supervisors has grown during this REF cycle from two (Mainland, Downes) to five, with three further being mentored. This growth in capacity is mirrored by an increase in student numbers. All new supervisors are required to attend supervisory training sessions run by the Graduate School and refreshers courses at regular intervals subsequently, and all supervisors of SGSAAH-funded students have mandatory training. Quality of supervisor training is evidenced by Ljosland receiving the *UHI Student Association Award, 2017: Best Research Supervisor*.

The UHI Graduate School co-ordinates activities relating to PGR student support and training (see Institutional Environment Statement (IES)) and students' support needs are assessed through a Personal Learning Support Plan and provided through Orkney College. The biennial UHI postgraduate and staff research conference permits students to present to, and interact with, research-active staff from across the UHI and to develop their networking skills. Employability skills of graduate students are further enhanced through opportunities to gain teaching experience as postgraduate demonstrators and tutors. PGR students are encouraged to attend and present at the monthly Institute research seminars, UHI Cluster seminars, and are active participants of research teams with, e.g. supervisory roles in field projects and similar activities. To ensure that research students receive a high-quality educational experience all postgraduate research provision at the UHI is monitored by a 5-year cycle of academic area approval. This process is led by the UHI Graduate School and involves a panel comprising external and internal academics and research students. Archaeology was successfully revalidated as a research area in 2018; a future objective is for validation of interdisciplinary Arts and Humanities area/s to support anticipated growth in Art/Creative Practice and Archaeology PhDs.

PGR students based in Orkney are provided with their desk-space and IT facilities in a dedicated postgraduate room. Financial support towards costs associated with one conference and one training event per annum is provided by the UHI Graduate School (e.g. Blanz the *Future*

Perspectives for Island Society conference in Japan, 2017). PGRs are also encouraged to apply for external funding, with examples including to Forestry Scotland for C14 dates (Sybenga).

The supportive research environment of the UHI is indicated by the UK-wide Postgraduate Researcher Experience Survey (see IES). UHI was comparable or out-performed UK in all but Research Skills, and Research Culture. The Institute has contributed with effect to the UHI strategy for improvement by strengthening the research culture through leading research activities within the UHI Clusters, by increasing supervisory capacity, and engaging with SGSAH. Membership of SGSAH brings support to all students registered for PhDs irrespective of funding source. Our sustained record of PhD completions and the destination of these is a further measure of our success in these areas – two went directly onto UKRI/EU funded PDRAs (at the U. of York and U. of Vienna) and four now have posts within HE institutions. A further indication is the numerous accolades received by our students – e.g. Blanz best student presentation at the AEA conference in Aarhus; Renwick and Johnson, UHI PG students of the year in 2017 and 2019, respectively; Ackerman, Robertson medal for the most outstanding Carnegie PhD scholarship applicant in 2019.

3. Income, infrastructure and facilities

The transition from UHI Department of Archaeology to the UHI Archaeology Institute in 2015 involved considerable restructuring, new facilities and forward planning. Its success to date has depended on the fully integrated structure research, teaching and commercial/consultancy and on financial sustainability which has been predicated on carefully staged development. The ambitious aim the future regionalisation of the Institute will be realised through careful planning and support from UHI for Archaeology as a priority for development.

Research Income

Research income for the UoA 2014-20 totals **£2,625,396**. Since 2014, research funding has increased and continues to rise annually with income for 2020 approaching **£600,000**, a significant achievement for a relatively modest research staff base. (Figure 3). Funders include: Research Councils (e.g. AHRC, British Academy, Royal Society of Edinburgh, local government (e.g. OIC) and national bodies (e.g. HES), Learned Societies (e.g. Society of Antiquaries of Scotland), UK-based charities (e.g. Carnegie, NLHF) and due to strong research impact, business/industry grants (e.g. Road Transport Scotland A9 Academy). Additionally, over the REF period there has been a steady stream of EU funding. Maintaining this diversity in funding source is seen as key to long term sustainability.

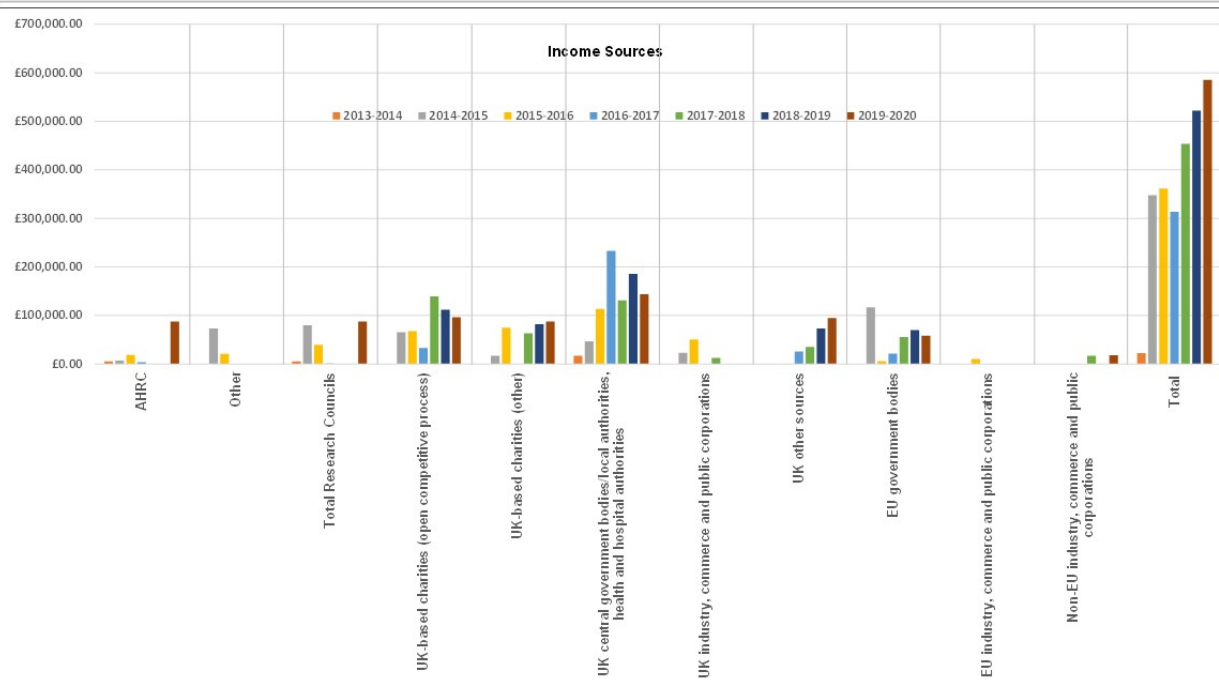


Figure 3: UoA income totalling £2,625,396. Note increases in income post Institute establishment in years 2017-20.

Investment in staffing and mentoring for new researchers has led to an increase in successful funding bids to UKRI and EU, both as lead partners and through collaborations. Examples include the joint AHRC/DFG *LIFTE* project (1st Feb 2020 onwards, AHRC value £355k, total value £779k; Gibbon, Mainland, Harland) and ongoing research under the GCRF *PITCH Cook Islands* (£35.5k) (Downes, Richards). The Carnegie Trust and the British Academy have been a further significant source of funding (e.g. Timpany, £29k, *Bay of Ireland Palaeolandscapes*; Mainland, £84k. *Herding economies, sustainability and resilience in Viking/Norse Orkney*). A key objective for the next REF cycle will be to increase the proportion of income generated through further successful UKRI funding.

Income generation for primary research through fieldwork has largely been pump-primed through small grant applications (e.g. to bodies such as OIC, Orkney Archaeological Society, Royal Society Edinburgh, NLHF) but which has none-the-less generated significant funding and activity over the census period. The 'pilot' work seeded by these and other 'prime-pump' funding sources is now enabling larger UKRI funding applications, such as the *LIFTE* project, and further larger grant applications are underway (e.g. for Ness of Brodgar; Skail; Cook Islands). KE activities feature prominently in our research, a strength which draws on collaboration with our commercial archaeology wing, ORCA. Here, funding sources include HES, Scottish Forestry and NLHF - during the REF period, we have had six successful NLHF projects as partners and one as project lead (e.g. *Northern Isles Landscape Partnership Tombs o' the North* - £59k; *Kirkwall Townscape Heritage Initiative (THI)*, £30k). The *Ness of Brodgar* project is a significant source of research income, totalling £651k. This has largely been funded by charitable and personal donations but has latterly (2018) attracted EU Leader funding for a future development strategy. Future objectives are to capitalise on the opportunity for impact generated by KE activities to replace EU funding through, e.g. greater participation in Innovation and Challenge funding schemes relating to catalysing impact income.

We have success in competitive funding for PGR students. This includes a SGS AHRC CDA (Rivers) and Carnegie (Ackermann) PhD studentships with a further Carnegie studentship co-supervised with UHI History (Worth). EU funding has provided studentships through ESF bursaries (Keir, Blanz, Bratt) while industry funding has supported a further PhD (Sybenga; Forestry Scotland) and an MRes (Pavilionyte, Road Transport Scotland). Securing funding for PhDs is a challenge post-Brexit and remains a strategic objective.

Infrastructure and facilities

The UHI Archaeology Institute is a self-contained unit within a fully accessible purpose built wing of Orkney College UHI. An upgrade of facilities enabled by the creation of the Institute added to an already existing well-equipped resource. Facilities include artefact storage and handling laboratory, vehicles (four-wheel drive vehicle, crew bus and minibus), geophysical survey equipment (magnetometers, resistivity, GPR, EM, Magnetic Susceptibility), and relevant software), sub-bottom profiler for marine survey, laser scanner and EDMs, excavation equipment sufficient for large field investigations and mobile site hut. New facilities and equipment added subsequently are laboratories, finds processing rooms and an environmental support unit, and a new minibus. Institute researchers additionally have access to the resources (from equipment through to expertise/field knowledge) at other specialist centres within the wider UHI network (e.g. Environmental Research Institute (ERI) – specialist microscopy; facilities for biomolecular analysis; Scottish terrestrial and marine ecosystems); Agronomy Institute (facilities for field-trials; N. Atlantic agronomy); Rivers and Lochs Institute (facilities for molecular genetics; aquatic ecosystems). We continue to invest annually through use of BEIS funding and other sources for example the recent REG Covid-19 uplift funding will be used to furnish a new laboratory space for zooarchaeology and provide additional provision for working with volunteers.

Environmental archaeology has grown to be an important area of our research profile; the Institute now has two dedicated laboratories, housing modern reference collections for zooarchaeology/archaeobotanical research, microscopy and image analysis facilities, and with additional environmental processing and materials processing facilities. UHI Investment in this area, though the Institute start-up funds and other sources (e.g. BEIS) underpins projects such as the *Bay of Ireland* (Timpany, Carnegie) and *LIFTE* (Mainland/Harland, AHRC/DFG). Further expansion in this area is a strategic aim, to fill current gaps in archaeological science capability (e.g. soil science, biomolecules, osteoarchaeology) and to strengthen existing interdisciplinary collaborations with the UHI centres named above with a view to establishing specialist hubs for science-based archaeology across the UHI. These intra-institutional collaborations add significantly to our research capacity, e.g. currently supporting three research students (with Mainland, Timpany, Harland) and a KE project on heritage cereals/beer production (Timpany), and contribute to the overall resilience of the UoA.

Art and archaeology is another growth area. Here Institute researchers benefit from the art and creative practice facilities within the Art and Design Department in Orkney College, including open plan studio, workshop and technical facilities for printmaking, photography and textiles.

The Orkney Historic Environment Record is located within the Institute (as is the Regional Archaeologist), which is an outstanding research resource for staff and students. As an adjunct, we also hold an extensive aerial photographic archive for the north of Scotland. The UHI has invested heavily in online library resources, which has supported staff and students well in the Covid-19 crisis. Each UHI campus has its own physical library and staff and students can borrow books swiftly from the intra-UHI network which gives access therefore to collections which support the research of different disciplines and regions. The UHI Orkney College library has an excellent and wide-ranging archaeology collection built up to complement the exceptional holdings in the Orkney Library and Archives. The Archaeology Institute library collections have grown through steady flow of prominent bequests, which attests to our rising research profile. Work is ongoing with staff, research students and volunteers to catalogue these collections to integrate them into the UHI Library holdings and this affords a novel form of training and knowledge exchange.

Orkney College policy on Equity and Diversity ensures that reasonable adjustments will be made to accommodate specific learning needs and other forms of support, e.g. through assistive technology and specialist equipment according to need, assessed by the College Learning Support Officer. This support can extend to fieldwork and other off-site contexts, such as excavation or standing building survey, with access to both these areas having been supported in this UoA.

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

Collaborative research and contribution to the discipline

Collaborative research has been of vital importance in the development and growth of the Archaeology Institute and is a key part of our research planning objectives. An example is Downes' membership of ICOMOS *Climate Change and Heritage Working Group (CCHWG)* leading directly to international collaboration with lead investigators from Queen's University Belfast, HES, African World Heritage Fund, local partner organisations Tanzanian Ministry of Natural Resources and Tourism, and Nigerian National Commission for Museums and Monuments, and other international partner organisations including ICOMOS, Historic England, the International National Trust Organisation and the Union of Concerned Scientists on the *CVI-Africa* project (AHRC/DCMS-funded, December 2020-21). In addition, we have used the rich archaeological heritage of our region strategically to create opportunities for new collaborations, e.g., through initiatives such as the RSE-funded *Landmarks* workshop (Mainland, Edmonds) which brought 20 plus academics specialising in landscape archaeology to Orkney in 2015, facilitating a Memorandum of Understanding (2017) with the Deutsches Archäologisches Institut Römisch-Germanische Kommission (DAI) and ongoing geophysical survey projects with DAI and UC Dublin as part of the *Landscapes of Change Rousay* project (Moore; Lee). A MoU is also in place with the University of Willamette, here enabling international research connections between the US and the *Ness of Brodgar* (Card). Our *Gateway to the Atlantic: Climate change threats to heritage and island sustainability in the Northern Isles of Scotland* joint with Bradford University is part of a larger umbrella program *North Atlantic Encounters* sponsored by the *North Atlantic Biocultural Organization* (www.nabohome.org) (of which AI staff have long been a part) and the *HfE Circumpolar Observatory* which has been endorsed (2020) by the *UNESCO BRIDGES* (Broadening the Application of the Sustainability Science Approach) coalition (Mainland, Downes).

Overall, Archaeology Institute UoA staff are involved as PIs or CO-Is on **30** national and international collaborative projects and all submitted staff are participants in one or more international collaborations. These include several large internationally funded projects, such as *LIFTE* (AHRC/DFG) with the German Maritime Museum and the U. of Lincoln, research (Mainland) on the National Science Foundation (NSF)-funded (£779K) *Assessing the Distribution and Variability of Marine Mammals through Archaeology, Ancient DNA, and History in the North Atlantic* led by Western Carolina University, and the EU COST project *Ocean Past Northern Seas* (Harland). Nationally our staff are collaborating with colleagues at more than 19 UK institutions. Notable examples here include Richard's role in the *Stones of Stonehenge* project (University College London, Bournemouth) and Timpany's Carnegie/HES-funded *Scottish Intertidal Archaeology* projects (Birmingham, St Andrews, Aberdeen).

Audiences, research users and beneficiaries, and reach

The UHI AI has experience designing and delivering outreach and learning at a range of scales and locations, and the Archaeology Institute is an approved outreach and engagement supplier for HES. Our approach to engagement in Orkney encompasses engagement with our target audiences of primary and secondary schools, archaeology and heritage societies (e.g. Orkney Archaeology Society), youth organisations (e.g. Orkney Youth Café, Orkney Connect and Orkney Young Archaeologists Club), development Trusts (e.g. REW Development Trust) along with adult education (evening classes and short courses) and volunteer training opportunities in the field and laboratory, plus contributions to Further Education access and training courses at Orkney College (e.g. Pathways to Independence, School Link courses). The figures below for the volunteer activities and number of volunteers days and hours worked at Ness of Brodgar over the years show the huge scale of volunteer effort:

Ness of Brodgar 2012-19			
Volunteer Type	Volunteers		
	No. of People	Total Days Worked	Total Hours Worked

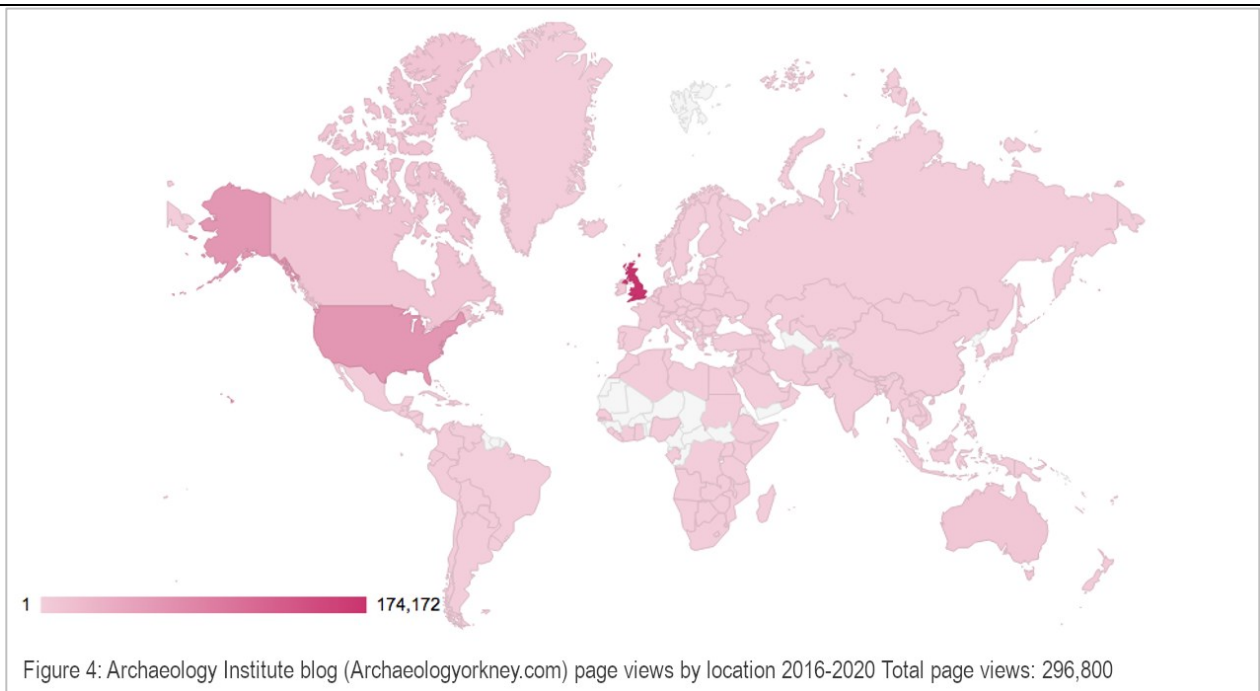
1. Fieldwork	592	11,840	82,880
2. Finds Team	142	2,840	19,880
3. Meeters & Greeters	86	2,408	16,856
4. Open Day	180	360	2,520
Total	1,000	17,448	122,136

Our engagement with heritage organisations extends to supporting grant applications, partnering on projects and providing opportunities for members to participate (e.g. Orkney Archaeology Society, Stromness Museum, REW Development Trust).

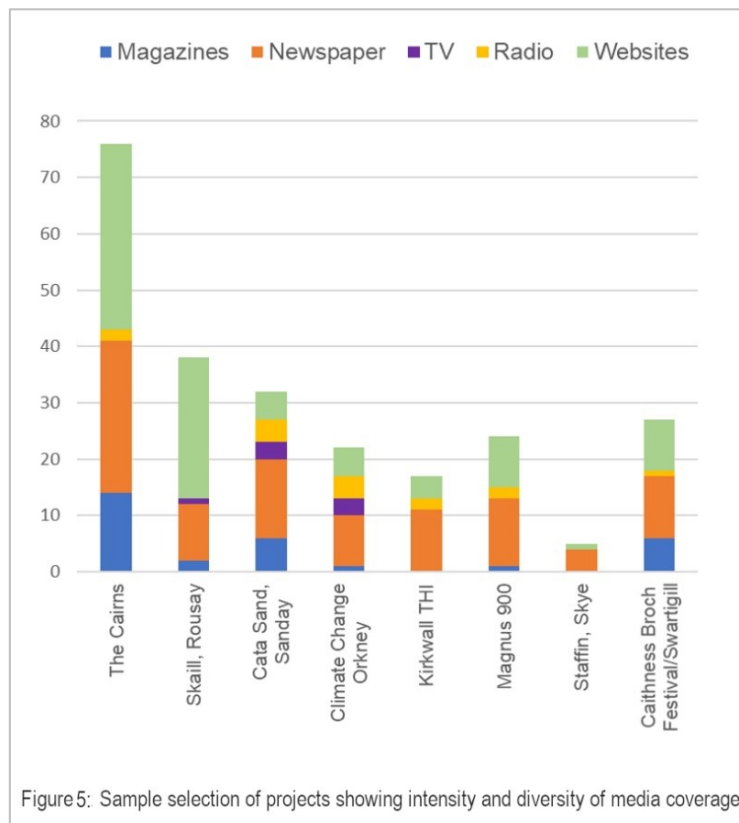
Lifelong Learning and Outreach: Activity and Participant Numbers		
Year	No. of Activities	No. of Participants
2015	37	652
2016	53	1,391
2017	61	1,238
2018	44	784
2019	47	1,141
Total	242	5,206

The number of participants engaging in our activities is significant, as shown above. The *Kirkwall THI* project 2016 used school classroom and then field based workshops to take 105 Kirkwall Grammar School S3 pupils through geophysical survey and excavation at a site in Kirkwall town centre (additional visits from 183 pupils). Similar school programmes were run for the *Caithness Broch Project* 2017-18 (280 Pupils from six schools in Caithness) and during the *Mapping Magnus* project. Other examples of community projects are the *HONO WHS Fieldwalking* projects (2016-19, 164 participants) and St Magnus Graffiti Project (2018-19, 66 participants) with Orkney Archaeology Society, and “*Archaeology Plus*” with Orkney Blide Trust mental health charity (2018, 20 participants). The *HONO WHS Community Map* 2016 was delivered using a series of workshops at the local primary school, day care centre and for the local community (HES-funded, 81 participants) – this is a good example of our intergenerational approach.

During the REF period we have developed a global media platform for sharing our research and activities widely. We have developed a highly successful range of social media output using Facebook, Twitter, Instagram which is used to share research, outreach activities, and to recruit students and volunteers, and points readers including the press to the AI blog (<https://archaeologyorkney.com/>) which is used to host details stories, host research and promote outreach activities. Our YouTube channel is used to share public talks, project related videos and training support material. News media in UK and around the world draw upon the Archaeology Institute output as a source of ground-breaking discoveries and viewpoints. The exceptional reach of our research blogs can be seen in Figure 4.



This successful strategy in the use of social media can be seen in the follow-through of unusually high amounts of appearances of our research in news outlets and popular magazines. Figure 5 shows a selection of sites and the media follow up. Across the REF period our research was featured in magazines at least **63** times of which **11** features were in international magazines.



We have taken the skills developed in inclusivity using digital media with us into our *PITCH* research in the Cook Islands; in conjunction with the Cook Islands Govt Ministry of Culture our Facebook page www.facebook.com/archaeologyci was utilised to live stream interviews and fieldwork progress and was accessed interactively by Cooks Islands Maoris both in the diaspora

and in New Zealand and Australia. Our research has also featured each year in Cook Islands' newspaper articles and radio and TV broadcast.

Staff have contributed to popular and innovative format books over the period, examples of which are *Conversations with Magic Stones* 2017 (Edmonds, Anderson-Whymark, Thomas), *Orkney Book of Runes* 2019 (Ljosland), *Pathways to the Cosmos* 2020 (Downes) and *Ness of Brodgar: Digging Deeper* (Card) of which 8,000 were printed in 2015 and 10,000 re-printed in 2017.

Wider contributions to economy and society

Of our wider impacts not captured in the ICSs, we would select some highlights. Within impacts on **Creativity, culture and society**, we have presented a number of museum and gallery exhibitions including: *The Listening to the Piers* project (Lee) exhibition (Stromness Museum, 2016) based around a series of innovative art-science workshops on a 'piers day' in Stromness, Orkney (210 participants); *HONO WHS Field Walking* project (Lee) culminated in an exhibition at Orkney Museum curated by the participants (Dec 2016-April 2017, 4799 visitors), with one visitor commenting "This is real learning"; *Orkney: Beside the Ocean of Time* (Bevan, AHRC) exhibition 2017 in the Pier Arts Centre, Stromness; the Stromness Museum exhibition *Distant Shores: Orkney to Oceania* (2020-21, [What's on at Stromness Museum | Stromness Museum](#)) features the GCRF *PITCH Cook Islands* and AHRC *Rapa Nui* research of Richards and Downes. New cultural artefacts include film: Bevan, Downes, Jenkins et al 2014 *Wilder Being- art, Archaeology and Environment* (<https://vimeo.com/112154339>) and digital exhibits were created in *Heritage on the Edge* (Downes) ([Heritage on the Edge — Google Arts & Culture](#)).

In **Public Policy** Our researchers are at the vanguard of mitigation policy for climate change impacts on heritage: Downes is leading the application and implementation of climatic vulnerability indices as a panel member of ICOMOS CCHWG, authored *Sustainable Development Goals* and co-authored *High Ambition* sections of ICOMOS *The Future of Our Pasts* report (Future of Our Pasts: Engaging Cultural Heritage in Climate Action. July 1 2019. Paris: ICOMOS). In 2020 the 20th ICOMOS Triennial General Assembly adopted Resolution 20GA/15, the resolution CCHWG collectively put forward on *Cultural Heritage and the Climate Emergency*.

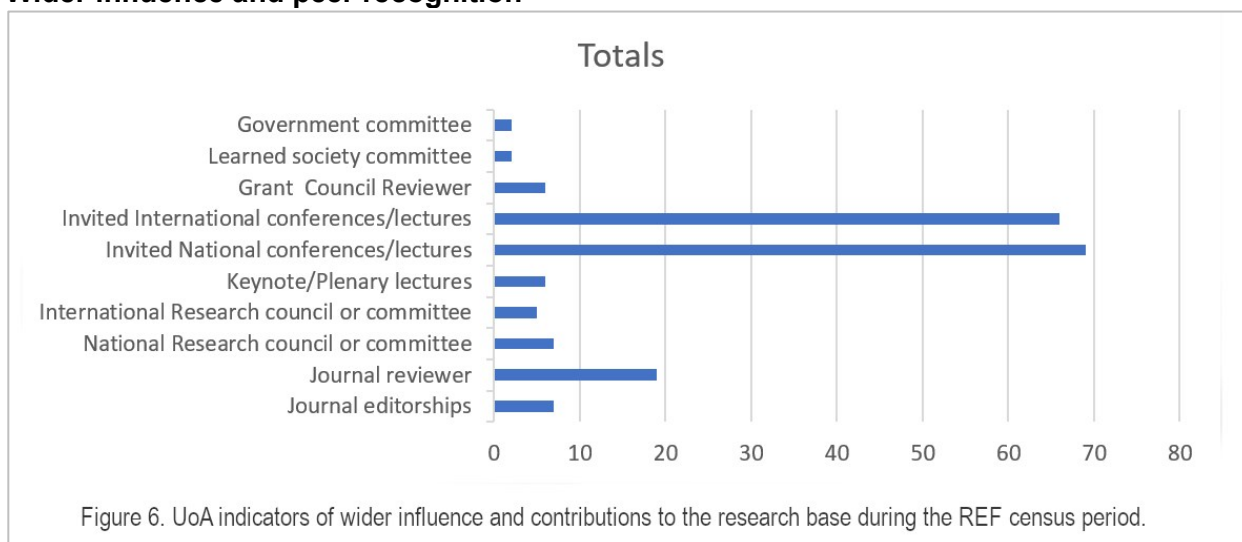
For the **Environment** with respect to Climate Change new methods and techniques that have led to benefits through Climate Vulnerability Index, first employed in a Cultural WHS context in HONO 2019 (Downes in *Climate Risk Assessment for the Heart of Neolithic Orkney World Heritage Site*. The subsequent *Values-based Climate Change Risk Assessment: Piloting the Climate Vulnerability Index for Cultural Heritage in Africa* (Downes) project will work with the UK Department for Digital, Culture, Media and Sport (DCMS) and other similar projects to develop a longer term and sustainable Overseas Development Assistance funded workstream, to respond effectively to climate change impacts on cultural heritage focused on developing countries.

In **Understanding, learning and participation** our strong commitment to participatory community archaeology is underpinned by educational initiatives such as Learning for Sustainability education and citizen science in including Downes/Keir/Richards research and output on Rapa Nui. Timpany's research with the HE/HLF CITIZAN project has worked with volunteers providing training in and understanding of environmental change and climatic impacts in coastally inundated areas of England.

We have two impact examples which contribute to processes of **commemoration, memorialisation and reconciliation**: *Magnus 900* celebratory year in Orkney (2017), commemorating the 900th anniversary of the martyrdom of St Magnus comprised two elements: *Mapping Magnus* (Lee/Gibbon, Leader, OIC) comprising community archaeology, research and training project engaged local residents, school children and tourists providing hands-on training in research and fieldwork activities. Participant numbers (total 394) greatly exceeded the project targets, including 69 volunteers for field activities and 166 school pupils from six primary schools. The project blogs attracted 12,500 world-wide views. Key outputs were two public talks

(total no.110), a technical project report, contributions to Canmore, and two new information boards in Birsay. The AI's research underpinned the second element, *St Magnus Way* (Gibbon), a new 58-mile-long distance pilgrimage route created for *Magnus 900* (with Orkney Pilgrimage). Historical research, grant support and volunteer opportunities resulted in the *St Magnus Way* website and also academic outputs (Gibbon, Moore). *Commemorating the victims of the Orkney witchcraft trials* resulted in the creation of a permanent memorial in Kirkwall 2018-20 (Ljosland, with Gibbon and Lee, OIC, Orkney Heritage Society). Events leading up to the installation of the monument comprised a Creative Day of intergenerational workshops (40 people); Memorial Inauguration Day and Conference (audience 100) and New Orkney Antiquarian Journal special edition launch virtual seminar (audience 90 worldwide).

Wider influence and peer recognition



Examples to highlight include the number of international lectures and presentations. This includes keynote papers at the World Archaeological Congress (Kyoto- Card), 42 World Heritage Committee session (Manama Bahrain, Downes), Card's award of the Kress Travelling Lectureship from the Archaeological Institute of America (2016-17), following on from his lecture tour in Texas USA in 2015.

Colleagues are regularly invited to present and offer sessions at major international conferences (Figure 6, e.g. Timpany - INQUA Dublin; Thomas - International Symposium on Cultural Heritage Renmin University China; Gibbon - Viking Congress, Copenhagen. Downes has been invited to deliver the Dalrymple Lecture Series 2020-21 *Archaeology and Sustainability: Island Perspectives 2020* (postponed to 2021 due to Covid-19) (*Scottish Archaeological Journal*, 42(1), pp. v–vi [Dalrymple Lecture Series 2020–1 | Scottish Archaeological Journal \(uhi.ac.uk\)](https://doi.org/10.1080/00439862.2020.1811111)). We have hosted conferences for learned societies, such as Contemporary and Historical Archaeology in Theory (CHAT) 'Rurality' 2016 (Lee, Downes, Thomas) and the Association of Environmental Archaeologists' Spring Conference 'Isolation and Connectivity' (Harland) 2016, followed by Archaeomalacology ICAZ (International Council for Zooarchaeology) Meeting, all attracting significant number of overseas delegates. We act as reviewers for a substantial number of academic journals, both in the UK and abroad (Downes, Gibbon, Harland, Ljosland, Mainland, Richards, Thomas), and for grant council applications (Downes, Ljosland, Mainland, Richards). Downes is on the review panel for the AHRC SGSAH studentships. A number of staff are journal editors (Downes, Gibbon, Mainland, Ljosland, Thomas), and editors of journal special editions (Ljosland and Thomas). Downes has been granted funding to be visiting researcher at Uppsala University Campus Gotland to engage with the *Interdisciplinary Island and Seascape Research Cluster* and the *Sustainable Heritage Research Forum* and Downes has been invited to DAI as Visiting Researcher (both postponed to 2021 due to Covid-19). We have representation on Government and national body committees (e.g. Strategic Historic Environment Forum HES-led Climate Change committee, Downes) and international committees (Downes- ICOMOS CCHWG, Mainland – Viking Congress). Staff also advise government agencies and public bodies on the management and interpretation of WHS where research flows into public

engagement e.g. Richards 2016- International member of Comité scientifique for WHS bid for *Carnac megalithic landscape*, Morbihan, France; 2020 - Heritage practice advisor for WHS bid *The passage tomb landscape of Sligo, Ireland*.

Finally, the *Ness of Brodgar* was Awarded the Shanghai Archaeology Forum Field Discovery Award in 2019, which was followed by a Motion in Scottish Parliament lodged by MSP Liam McArthur (S5M-19892) of congratulations thanking the AI team for '*furthering knowledge and awareness of Neolithic life in Orkney through their outstanding and innovative efforts*'