

<b>Institution: ROYAL HOLLOWAY UNIVERSITY OF LONDON (RHUL)</b>
<b>Unit of Assessment: 14: GEOGRAPHY AND ENVIRONMENTAL STUDIES</b>
<p><b>1. Unit Context and Structure, Research and Impact Strategy</b></p> <p><b>1.1 Unit Context and Structure</b></p> <p>The Department of Geography is a thriving research-led unit, located since 2019 within the new School of Life Sciences and the Environment. At the census date the Department had 35 Category A staff: 28 on permanent Teaching and Research contracts and 7 national academy / UKRI-funded postdoctoral fellows. A significant body of doctoral students play a vital role in our research culture; we supervised 95.08 FTE students to completion in the assessment period. Since 2014 we have benefitted from the appointment of 10 new permanent staff members and the contributions of 15 well-integrated postdoctoral fellowships (5 British Academy, 3 Leverhulme ECF, 3 UKRI, 2 EU MSCA-IF, 1 Royal Society, 1 Swiss National Science Foundation). Our work has been underpinned by £5.8M research grant spend and targeted investment in laboratory and field infrastructure (£1.1M). A particular feature of our scholarly output since 2014 has been the publication of 23 monographs, both for research and wider readerships. Our aim has been to build on established strengths to provide an innovative, supportive and well-resourced environment, enabling the crafting of world-leading research outputs and significant societal benefits in the UK and globally.</p> <p>The Department is committed to focused excellence across Geography's span of the natural sciences, social sciences and the arts and humanities. This commitment is driven through our three research groups:</p> <ul style="list-style-type: none"> <li>• <b>The Centre for Quaternary Research</b> (11 Category A staff at census) brings together palaeoclimatic, palaeoenvironmental, geochronological and archaeological expertise in order to address past landscape and biological responses to climate change, and to apply this knowledge to contemporary environmental policy and management.</li> <li>• <b>The Geopolitics, Development, Security and Justice Research Group</b> (13 Category A staff at census) researches the complex yet everyday power geometries of territory re/making, im/mobility, in/security and environmental change, across both majority and minority worlds.</li> <li>• <b>The Social, Cultural and Historical Geography Research Group</b> (11 Category A staff at census) explores creative and experimental geographies; urban cultures and materialities; geographical imaginations past, present and future; and the interrelated circulations of objects, ideas and people. In 2016 the Group launched the interdisciplinary <b>Royal Holloway Centre for the GeoHumanities</b>.</li> </ul> <p>Central to our research management, the groups also embed permanent staff, postdocs and postgraduates in vibrant research communities. Regular events enrich intellectual dialogue: the Social, Cultural and Historical Group's fortnightly 'Landscape Surgery' meetings and annual Cosgrove Lecture in the GeoHumanities; the Geopolitics, Development, Security and Justice Group's monthly meetings on works in progress, termly 'theme day' workshops, and annual writing retreats; and the Centre for Quaternary Research's Epoch Seminar Series and annual London Quaternary Lectures. Regular group management meetings ensure strong information exchange and collective endeavour. Research Group Directors link our broader strategic goals into group</p>

and personal research planning. The Department's Research Leadership Team co-ordinates across and beyond the groups, headed by the Department Research Lead and comprising Research Group / Centre Directors, the Department Impact Lead, the Postgraduate Research Student Lead, the Laboratory, Infrastructure and Field Lead, an ECR staff member, and the Head of Department. The Department Research Lead is a member of the School Research and Knowledge Exchange Committee and works closely with the School Director of Research, the Senior Vice Principal Academic Strategy and Research, and Research & Innovation staff, ensuring alignment between departmental, school and college research strategies and support.

## 1.2 Strategic Research Objectives 2014-20

Our research strategy is based on five broad objectives:

- Energise distinctive research groups of critical mass which advance Geography's contributions to the natural sciences, social sciences, and arts and humanities;
- Produce research that is genuinely agenda setting and of the highest quality in terms of both precision and imagination;
- Enrich the intellectual imaginations and skills of our research staff and students, thereby helping to shape our discipline and interdisciplinary fields;
- Exchange knowledge and co-produce research with organisations and people beyond the academy, to enhance our research and to maximise its public benefits;
- Deliver on our goals through a collegial, diverse and inclusive environment that supports researchers across all levels in pursuing their aspirations.

Within this strategic framing, and building from the strong base recognised through our REF2014 submission (41% assessed world leading, 45% internationally excellent), our research groups advanced more substantive aims.

The **Centre for Quaternary Research** had four principal research ambitions. First, **to reconstruct abrupt climatic events and their environmental impacts**. A particular achievement has been the generation and analysis of highly resolved, precisely dated, lake records in both high and low latitudes, helping to demonstrate the importance of reconstructing past abrupt climatic events for better understanding contemporary climate change. Second, **to investigate the complex relations between climate change and glacial systems**. In particular, this involved a Southern Hemispheric focus on the Antarctic Peninsula and Patagonia, deploying modelling, remote sensing geomorphology, analysis of annually laminated sediments and high-precision geochronology to deepen understanding of past glacial dynamics, to quantify ice-sheet and ice-shelf history, and thereby to advance understanding of the implications of glacial loading and unloading of land masses for relative sea levels. Third, **to explore biological response to long-term and short-term climate change**. A key contribution has been research on hominin and faunal evolution and behaviour, where we have dated critical archaeological sites in Africa and Eurasia, linking them to important climatic and environmental records. This research has tested key concepts on the drivers, patterns and character of past human and faunal dispersals and advanced understanding of resilience to fluctuating climates. Our palaeoecological work addressed the impact of not only climate changes but also anthropogenic activities, fire and other disturbances on Quaternary ecosystems. Fourth, we have **applied Quaternary Science to contemporary environmental management and policy development**, including: monitoring peatland carbon accumulation and erosion for improved long-term management of these and

other wetlands; and, through research on climate change and glacial systems, contributing to better understanding of the importance and vulnerability of 'mountain water towers' globally (published in *Nature*, 2020). The Centre's strategic objectives were matched to, and supported by, **four postdoctoral fellowships** and **the appointment of four new permanent staff members**, strengthening our profile in palaeoecology (Colombaroli [L], Milner [L, SL]), glaciology (Davies [L, SL]) and palaeoclimatology (Martin Puertas [Royal Society Fellow; L from 2022]).

The **Geopolitics, Development, Security and Justice Research Group**, evolving from the Politics, Development and Sustainability group of our REF2014 submission, had four main foci. First, **to advance critical approaches to geopolitics**, through developing understanding of popular, media, feminist, everyday and elemental geopolitics; attending to neglected spaces of territorialisation such as no-man's land, the subterranean and the subaquatic; and interrogating diverse sites of profound geopolitical contention, from the polar regions to Pakistan. Second, the Group explored **the power geometries of im/mobility**. In particular, staff have improved understanding of how displacement is lived, governed and mediated through research on emergency evacuations, diasporic exiles and Holocaust escapees, land dispossessions and evictions, journeys to escape domestic violence, and climate induced labour precarity and migration. Reflecting this shared focus, seven Group staff co-edited the first interdisciplinary *Handbook of Displacement* (Palgrave Macmillan, 2020). Third, we progressed research on **the geographies of in/security, justice and rights**. Theoretically informed ethnographic work examined embodied and gendered insecurities in the domestic sphere. Indigenous rights, and the intermeshing of collective social memories with forms of environmental governance, territorialisation and participatory research, were a particular theme. And, assisted by a strong country focus on Cambodia, research investigated the relations of neo-liberal economic growth, authoritarian geolegalities, human rights and intersecting socio-environmental vulnerabilities. Fourth, cross-cutting these agendas, we set out **to explore the everyday politics of living with environmental change**, achieved by interrogating a range of pressing challenges from new agendas for urban sustainability, to the involvement of Indigenous communities in environmental conservation and fire management, and the forms of citizenship enacted in the wake of environmental disasters. The Group's successful pursuit of these objectives was supported by **five postdoctoral fellowships** and **four permanent staff appointments**, focused on Indigenous knowledges (Eades [L]), the intersections of politics and environment (Parsons [British Academy PDF; L from 2021], Siddiqi [Category B: L, SL, moved to Cambridge in 2020]) and feminist geopolitics (Squire [L]).

The **Social, Cultural and Historical Geography Research Group** focused on contributions in four areas. First, it **advanced and enriched the field of creative and experimental geographies**. Central here has been the substantive development, and critical analysis, of creative and practice-based research methods, engaging the 'creative turn' in Geography with the 'research turn' in arts practice. These methodologies offered innovative understanding of issues ranging from atmospheric sensing to the role of socially engaged art in the contemporary city. The Group also delivered key work on **the geographies of creativity**, for instance critiquing the dominant 'creative city' paradigm and analysing a wider palette of urban creativities from the subcultural to the sacred. Second, staff advanced research on **urban cultures and materialities**, centring on architectural geographies, the contested politics of digitally mediated cities and 'smart' urbanisms, affordances for urban subversion, and the material forms and practices of sacred space in an 'infrasecular' age. Third, our research has demonstrated **the power of diverse geographical imaginations** in shaping our worlds. Deep historical scholarship provided a window

on the distinct perceptions of space and nature in Byzantine culture and the Orthodox Christian Enlightenment. Research on travel writing, print culture and visual archives elucidated the material forms and consequences of geographical imaginaries in the past, and we explored the potential of the creative arts to re-imagine environmental futures. Fourth, the Group has explored the **interlinked circulations of objects, ideas and people**. Key foci were museum and heritage collections, and how their movements create new forms of knowledge and knowledge exchange, the circulation of ideas through the 'fluid objects' of print culture, and the theorisation of commodity biographies. The Group's achievement of its objectives was **supported by two permanent staff appointments**, focused on the geohumanities (Engelmann, L) and the geographies of creativity (Mould, L), and **six postdoctoral fellowships**. Additionally, the Group enriched its own research agendas, as well those of the Department and University more broadly, through establishing the UK's first interdisciplinary Centre for the GeoHumanities (section 1.3).

### 1.3: Strategic Approach to Interdisciplinary Research

We are committed to Geography as an intellectual pursuit that challenges modern disciplinary divisions. We embrace the value of interdisciplinarity in addressing the so-called 'wicked problems' that orient contemporary research challenges. Interdisciplinarity is therefore central to much of our research activity, developed since 2014 in three main ways.

First, funded studentships, projects and centres are explicitly designed to **create interdisciplinary research teams** where this best meets their research objectives. Reflecting a strong and growing emphasis on designing interdisciplinarity into researcher development, 10% of our completed PGR students were supervised in interdisciplinary teams as are 28% of our current PGRs.

Second, we led development of **RHUL's interdisciplinary research environment**. Focused on the interdisciplinary orientation of next generation researchers, key roles included Director of the Leverhulme's Magna Carta Doctoral Centre on Freedoms and Rights of the Individual in the Digital Age, where all studentships were cross-departmental (Dodds, 2014-17); Deputy Director of the AHRC *technē* Doctoral Training Partnership, emphasising interdisciplinary training and project design (Hawkins, 2017-20; Director from 2021); Management Board and Institutional Lead for the NERC London Doctoral Training Partnership, which provides an initial year of cross-disciplinary and cross-institutional training (Schreve, 2014-); and Co-PI / Management Committee for RHUL's EPSRC Doctoral Training Centre in Cybersecurity and the Everyday, promoting innovative interdisciplinary projects across the information and social sciences (Adey, 2014-). Other notable roles included: Global Challenges Research Strategy Sustainable Development Cluster Lead (Adey, 2018-) and Steering Group (Siddiqi, 2018-19, Parsons 2020-); Core Members of the Centre for Research into Sustainability, which is directed from the School of Business and Management (Brickell & Adey, 2014-; Cole, 2018-; Kleine 2014-16); the UNESCO Chair in ICT4D (Emeritus Unwin, renewed in 2015 and 2019); Deputy Director of RHUL's Humanities and Arts Research Institute (HARI) (Hawkins, 2015-17) and a HARI Fellowship on 'wild geographies' (Schreve, with Drama and Theatre, 2017-18); and participation in the AHRC funded StoryFutures Creative Cluster (Mould, lead for strand on creative economy work experience; Pinkerton, StoryFutures Fellowship on citizen heritage storytelling, 2020-). Looking ahead, Geography staff are leading on the development of RHUL's new interdisciplinary 'research catalyst' on Sustainable Living (cf. REF5a).

Third, in 2016 we launched the interdisciplinary **Royal Holloway Centre for the GeoHumanities**, comprised of 90 RHUL members, from 11 departments, including 25 interdisciplinary PhD students. The Centre's remit is to bring together scholars and practitioners from across the arts and humanities with interests in environment, landscape, place and space. Since 2016, the Centre's intellectual activity has had three main foci. First, *Environmental GeoHumanities*, where key concerns are intersecting creative arts practices with research on environmental change (e.g. Hawkins, AHRC *Creating Earth Futures* Leadership Fellowship, 2016-18) and developing new agendas for the humanities, especially around 'plant humanities'. Second, *Spatial GeoHumanities*, where questions of mobility, circulation and volume are to the fore, supported by new strategic partnerships with the University of Padua's Mobility & Humanities Centre, the Konkuk (South Korea) Academy of Mobility Humanities, the University of Taipei Global Futures programme, and the University of Neuchatel and its Centre of Expertise on Mobility and Migration. Third, *Public GeoHumanities*, where, for example, the Centre's innovative 'creative commissions' programme has funded two rounds of international collaborations between artists and scholars, focused on themes of 'earth futures' and 'im/mobilities'.

#### 1.4: Strategic Approach to Enabling Impact

The Department is committed to developing research that benefits communities and environments around the world. Leadership is provided by the Department's Director of Impact (Mistry), who works with RHUL's Vice-Principal for Impact, the School Director of External Engagement, and Impact Officers in the Research & Innovation Department. Together, they offer tailored advice on knowledge exchange and training programmes to share best practice and inspire staff and PGR students. RHUL's Research Strategy Fund prioritises impact activities for its small grants (8 projects, £40K funded in Geography); RHUL's Global Challenges Research Strategy supports impact-related activities in DAC countries (8 projects, £45K); and RHUL QR funds support scoping work on strategic knowledge exchange partnerships (£29K for 'Plant Humanities Initiative').

Since 2014, we have deepened our approach to enabling impact around seven key foci:

- **Co-designing and co-producing research with communities, beneficiaries, and intermediaries.** We are committed to building long-term collaborations with external partners, based on established relationships of trust leading to positive public benefits over time. Indicatively, in our three Impact Case Studies these relationships are decadal in length.
- **Expert advisor roles** that serve governments, policy agencies, NGOs and cultural institutions, and expert testimony to parliamentary committees, inquiries and legal proceedings.
- **Commissioned research** that delivered in-depth investigations addressed to specific research user needs, including those of human rights organisations, local government, and private companies and public bodies concerned with the management of cultural and natural heritage.
- **Staff secondments** that provide consolidated time for both research impact delivery and the development of research agendas with an understanding of stakeholder needs. Destinations included UK Government, Parliament and the Mistra Urban Futures Centre. Our research students also benefitted from secondments via Collaborative Studentships (21 in period), the UKRI policy internship scheme (5 in period) and other placements.

- **Embedding expertise from outside the academy in our research groups** via Honorary Research Associates and Fellowships (21 at census date; for example, six bringing expertise from the museums and cultural heritage sector) and collaborations with external advisors (for instance with legal partners to progress the impact of our research related to human rights abuses).
- **Engaging wide and diverse publics.** We address non-academic audiences via open access policy briefs (including in local languages), project reports, exhibitions, popular books, and non-written media. Our digital communication strategy encourages active use of social media accounts, blogs and research project websites. We produce participatory films and VR experiences. Our academics contribute their expertise to national and international news outlets and media. We share our research in educational resources, and actively seek creative ways to engage people in our research via collaborations with the arts and cultural sector.
- **Critical reflection on enabling beneficial impacts.** For instance, we have advanced understanding of the nuanced politics and practice of research collaboration and participatory methodologies.

Our three **Impact Case Studies** combine these multiple approaches to enabling impact. ‘Amplifying Indigenous knowledge’ (Mistry) demonstrates our approach to collaborative, participatory research that enables marginalised voices to be recognised, leading to better, community-owned policy solutions. ‘Advancing polar geopolitics’ (Dodds) was supported by roles as expert advisor in foreign and security policy and strengthened by a commitment to public engagement through educational resources. ‘Challenging human rights abuses in Cambodia’ (Brickell and Parsons) brings together community co-design, advising policy-makers and key stakeholders, legal interventions, and targeted public engagement through briefs, reports and an exhibition.

### 1.5: An Open Research Environment

The Department has developed its ethos and practice of open scholarship. Three key initiatives were developed since 2014, supported by dedicated professional service staff focused on open access and research data management. First, staff now publish in open access format for all UKRI-funded research and use the institutional Pure repository to ensure that all author accepted manuscripts of journal articles are publicly available. Second, RHUL developed its institutional data repository (via Figshare for Institutions), as well as associated training on data expectations and deposit, ensuring data with an acknowledged long-term value is preserved and remains accessible and useable for future research. Third, as part of our approach to impact, additional training was provided in the production of open access project briefings and reports, and in wide research communication more generally. Across our School, deeper engagement with the UK Reproducibility Network is in process, with the establishment of a local network in 2017.

### 1.6: Research Ethics and Integrity

The Department is committed to upholding the highest standards of research governance, integrity and ethics. RHUL ensures that research is conducted in accordance with the *Concordat to Support Research Integrity*, discussion of which forms part of the induction processes for all new academic staff. The RHUL Ethics Committee reviews all PGR and staff research, in parallel with risk assessment processes. Compulsory training in research ethics and integrity is embedded into our

PGR training programmes and successful engagement in ethical approval processes is monitored by the formal annual review process. New staff receive ethics training through the Advance Researcher Development Programme. Other specialist training is provided bespoke (e.g. in 2019 on due diligence and GCRF grant reporting). Department staff have worked with learned societies such as the British Academy and the RGS-IBG to advise on their ethical frameworks (Driver and Willis respectively).

### 1.7 Research and Impact Strategy 2021-26

Building on strong foundations and momentum (£3.1M contracted grant awards 2019-20), the Department's strategy for the next five years combines support for our full spectrum of research excellence with further development through four initiatives.

Our **Environmental Futures Initiative**, supported by RHUL's strategic investment in a new Research Catalyst for 'Living Sustainably' (cf. REF5a), will weave together strands of work from across our research groups on three main fronts. First, set within the new Catalyst's emphasis on supporting knowledge exchange, we will extend our application of Quaternary Science by embedding a new cross-disciplinary group on *Palaeo-Evidence for Policy*. Emphasising research co-production with relevant policy makers and stakeholders, this group will champion the value of understanding past climate and environmental change for future planning. For example, we will work in partnership with stakeholder climate scientists (e.g. Met Office), climate modellers and resilience teams (e.g. DEFRA, BEIS) to develop better constrained decadal scale predictions of NW European atmospheric dynamics, precipitation and flood events. Second, our Human Geography research will include a particular focus on how climate change operates in the context of *compounding crises*, demanding a grasp of cross-cutting environmental, political, development and socio-cultural geographies. For instance, our leading role in the Leverhulme Research Centre for Wildfires, Environment and Society (Mistry Associate Director, Colombaroli Research Supervisor, 2019-29) will analyse the relations between climate change, fire regimes, diverse identities and knowledges, and the politics of environmental governance in the Tropics. Elsewhere we will further explore the relationship of climate change with the intimate violences of everyday life. Indicative of our plans is our recently initiated 'Depleted by Debt?' project (PI Brickell, CI Parsons; UKRI GCRF, 2019-21; £821K) which connects environmental change in the Global South to the gendered dynamics of household financial precarity, credit markets and (mal)nutrition. Third, we will extend our research on the *elemental politics* of our environmental futures. For instance, the 'Think Deep' project (PI Hawkins; ERC Consolidator Grant; 2020-25; £1.6M) will explore the role of the subterranean in environmental sensing, imagination and speculation. Threading together concerns of geoscience, heritage, and urban studies, with partners ranging from the British Geological Survey to UNESCO Global GeoParks and urban planners in Singapore, this project resonates across our research groups, focusing attention on new ways of understanding our environmental futures.

Second, we will extend our **Creative Geographies Initiative**. We plan a wider integration of creative practices into our research in the majority as well as minority world. Indicative activities include: collaborations with visual artists, especially photographers, within social research projects in the Global South, to open up new imaginaries of people and place (e.g. the collaborations with Chinar Shah and Sophal Neak in the 'Depleted by Debt?' project); 'Climates of Listening', using creative sonic methods to understand changing Indigenous Pacific human-environmental relations (Kanngieser; EU MSCA-IF; 2021-25; c. £200K); 'Dancing in/between cities', a recently initiated

performance project exploring dance's role in intercultural encounters and circulations in Latin America (Narbed; British Academy; 2020-22; £294K); and an extension of Engelmann's creative practice based research on sensing atmospheres to engage issues of air quality and inequality, including in Latin America. We will also progress our participatory research approaches through engagement with new forms of creative immersive storytelling, supported by the expertise of RHUL's AHRC StoryFutures creative hub (£80K pilot project investment 2020-22). Across this work, and through the 'Think Deep' project, we will develop our interrogation of the role of creative practice-led research, contesting a narrow focus on the arts solely as a means to disseminate scientific research findings.

Third, our **Plant Humanities Initiative** will be directed at creating an interdisciplinary space for innovative research collaborations and public education on plants, plant-based knowledge, and the vital role of plants within human health and wellbeing. Centred on key scientific collections in botanic gardens in the UK and internationally, it will bring together arts and humanities scholars and practitioners with researchers in the social sciences, plant sciences and biomedical sciences. Initial strategic knowledge exchange work between RHUL and Royal Botanic Gardens, Kew was undertaken in the assessment period, and will be extended to national and international level scoping via an AHRC 'Where Next?' Development Grant (PI Driver; £109K; 2020-21), in partnership with Kew Gardens, Dumbarton Oaks, Harvard University Herbaria and University of Padua, as a basis for initiating larger funded research collaborations.

Fourth, the **Dating Our Pasts Initiative** will extend the reach and purpose of our Quaternary Science geochronology. The second phase of the Research Council of Norway's SapienCE Centre of Excellence funding (Co-PI Armitage; 2022-27) will provide ongoing investment here, demonstrating the centrality of innovative geochronology to interdisciplinary understanding of human evolution and behaviour. Developing existing collaborations, our research on past abrupt climate change will be geographically extended to the best resolved archives across Eurasia, from the Arctic North, to the Mediterranean and from the Atlantic zone to Siberia. And we plan to examine a key issue of hominin and faunal dispersal, the crossing of biogeographic thresholds, with a particular focus on when, where and how early humans crossed the monsoonal threshold into South Asia, thereby also extending the purview of our expertise into South Asian Palaeolithic environments and archaeology.

## 2. People

### 2.1 Staffing Strategy

The Department aims for a collaborative, inclusive and vibrant environment for its staff. Our commitment to gender equality was recognised in two successful Athena SWAN applications (Bronze award 2014, Silver award 2018). At census date, our 35 Category A staff comprised 15 Professors, 2 Readers, 5 Senior Lecturers, 5 Lecturers, 1 Research Officer and 7 Postdoctoral Fellows. They work alongside: 5 teaching focused colleagues (3 permanent SL staff; 2 fixed term L staff funded through external research income); 3 active emeriti; 6 FTE permanent technical staff; 8 fixed-term postdoctoral research assistants; and our graduate school of (currently) 72 research students. We have submitted outputs from 2 Category B staff who left the Department in 2020: Siddiqi (L, SL; to Cambridge) and Lawreniuk (Leverhulme ECF; to permanent post at Nottingham).



We made 10 permanent Category A Lecturer **appointments** in the assessment period (6 women, 4 men), matched to our research and impact objectives (see section 1.2). With 3 retirements and 5 departures (one anticipated by the Professorial appointment of della Dora in 2013), our strategy was targeted growth and renewal through the development of a dynamic group of ECR staff that will sustain the Department over the next decade. 15 **postdoctoral fellowships** (1 Royal Society, 5 British Academy, 3 Leverhulme ECF, 2 EU MSCA-IF, 2 ESRC, 1 AHRC Cultural Engagement Fellowship, 1 Swiss National Science Foundation) underlined this commitment to the development of ECR staff. Six of the eight completed fellowships led to permanent academic posts elsewhere.

## 2.2 Staff Development

The **reward and recognition** of staff through promotion is central to our strategy. All non-professorial academic staff submit their CVs annually to our Promotion Review Group for feedback and advice, and further guidance is provided via annual workshops on the promotions process and the 'Enabling Women in the Academic Promotion Process' programme. Since 2014 this has yielded 22 promotions (11 for women, 11 for men): 7 to Professor, 7 to Reader, 8 to Senior Lecturer. 7 staff have been promoted at least twice. RHUL's assessment of promotion cases has been improved through more transparent guidance and criteria in relation to research, teaching, external engagement and impact, and leadership and enhancement. The University is committed to the *Concordat to Support the Career Development of Researchers* and was a founding signatory of the *Technician Commitment*, which prioritises the visibility, recognition and career development of technical staff.

A rich culture of **mentoring** is central to delivering on these commitments. Our postdocs and probationary academic staff have designated advisors; quarterly formal meetings focus on work plans, CV development and more general issues of wellbeing; and regular reports are made to the School's Probationary Sub-Group. New staff undertake a full induction and training programme, including not only facilities and operational matters but research structures, opportunities for interdisciplinary collaboration, and career development. For all staff, the research group structure plays a key role in successful mentoring, embedding them in collective cultures that foster role modelling, peer learning, and intellectual belief and vision. Research Group Directors, a nominated senior colleague or Head of Department are the trained appraisers for our Performance Development Review process. This sets annual objectives framed by longer-term career goals and identifies training needs. In parallel, we annually update publication plans and three-year grant income and research plans, at individual, group and departmental levels. All grant applications are rigorously peer reviewed by the relevant Research Group Director or an expert nominee, assisted by the Department Impact Lead. Colleagues can access RHUL's cross-disciplinary mentoring scheme, as well as coaching support for specific career dilemmas. Career development **training programmes** include: Advance Researcher Development (enhancing skills in grant writing, research ethics management, project and impact management, and public engagement); the Aurora and Mandala leadership diversification programmes (focused on developing women and BAME leaders respectively); Future Leaders (for ECRs) and Strategic Leadership (for more established staff). All new teaching staff (and to assist their career development, most postdoctoral fellows) complete the Postgraduate Certificate in Academic Practice in Teaching and Learning, which qualifies for a HEA Fellowship. Over 50% of staff accessed these programmes in the assessment period; a priority of our current Athena SWAN Silver Award action plan is to improve on this take up.

Our collectively agreed **workload principles** support early career staff, those managing large research grants, those with large PGR supervision loads, those heavily engaged in impact work, and staff returning from career breaks (e.g. parental leave). Workload allocations are transparent, discussed annually at full Department Meetings. Staff **wellbeing** is addressed through an emphasis on realistic and empowering objectives, with a range of professional support accessible via RHUL's Employee Wellbeing Programme. Work-life balance is assisted through our flexible working and core working hours policies, email / communication etiquettes, and active encouragement to take entitled leave. All permanent academic staff are eligible to apply for a one term period of **sabbatical leave** for nine terms of service. Plans are carefully reviewed and supported by the Department's Research Leadership team. In 2014-20 43 periods of leave were approved and successfully completed. Since 2018 staff returning from maternity leave or shared parental leave are eligible to apply for formal sabbatical leave to assist in re-initiating their research trajectories. Heads of Department can apply for twelve months leave at the completion of their term of office. **Secondments** are developed to deliver dedicated time for supporting research impacts. Examples include: Milner's NERC Policy Placement Secondment (2014-15) and subsequent periodic 0.4 FTE secondments (2015-20) to the Office of DEFRA's Chief Scientific Advisor; Simon's 0.8 FTE secondment as Director of Mistra Urban Futures (2014-19); and Siddiqi's 0.5 FTE placement to the AHRC (2018-19), as their national academic lead for engagement of AHRC-GCRF research with the UK Parliament International Development Committee.

### 2.3 Research Students

Doctoral students are at the heart of our research culture. Our 95.08 FTE completions marked a 14% per annum increase from our REF2014 submission and a 90% increase from RAE2008. Evidencing the attraction of global talent, non-UK PGRs were 30% of our completing cohort. For 'home' students, across the assessment period competitively awarded UKRI funding supported 104 students (41 AHRC, 34 ESRC, 19 NERC, 10 EPSRC). 21 of those awards were Collaborative Studentships, with partners ranging from Kew Gardens and the Science Museum to Ordnance Survey and Dublin City Council. A further 45 students held Leverhulme or RHUL awards. PGR research was published in leading journals, from *Transactions of the IBG* to *Antipode*, *Cultural Geographies*, *Environment and Planning D*, *Earth-Science Reviews*, *Nature Ecology & Evolution* and *Quaternary Science Reviews*. Completed students progressed to postdoctoral fellowships and lecturing posts in the UK and globally (e.g. Canada, China, Japan, Singapore) as well as research careers in government, NGOs, business and the cultural sectors.

Our **supervision and mentoring** of PGR students are overseen by the Department PGR Lead and supported by the RHUL Doctoral School. In line with RHUL's Code of Good Practice for Research Supervision, all students are assigned one or two supervisors and at least one advisor. Students with collaborative studentships also have supervisors from partner organisations, with supervisory arrangements and facility access agreed in advance. Supervisors meet fortnightly with students to review progress and update goals / action points. Advisors meet with them at least termly and monitor overall progress and relationships between supervisor and supervisee. Formal annual review is supplemented by a rigorous upgrading process. Staff new to PhD supervision are provided with training and all staff benefit from the Doctoral School's 'supervision master classes' on issues ranging from helping with 'writer's block' to supporting career planning. Our Research Group structure is designed to ensure the integration of PGR students with staff and student groups beyond their supervisory teams. PGR students receive generous access to labs

and technical support, dedicated workspace, ICT provision, and research libraries within RHUL, the University of London and national facilities (e.g. British Library). Department funds and travel awards support research and dissemination activities, especially for those without access to UKRI research budgets.

**Training and expert support** are provided via the Doctoral School's extensive Researcher Development Programme, our Doctoral Training Partnerships, and the Department. In 2017 we developed a RHUL Teaching Prize-winning workshop series focused on PGR wellbeing, since taken forward into the Doctoral School's 'From surviving to thriving' support programme. To aid career development, mentored teaching opportunities are available and matched to Higher Education Academy accredited training in pedagogy. All PGR students maintain training logs, which form part of annual review submissions. Wider skills development is also addressed through promotion of the UKRI policy internship scheme, international placement and overseas institutional visit schemes, and links to our partner organisations. Indicatively, since 2014 destinations have included CUNY, DCMS, DWP, Waste and Resources Action Programme, RBG Kew, British Library, Library of Congress, Ordnance Survey, the Wellcome Collection, and the Weltmuseum Vienna, where a student co-curated an exhibition on colonial objects.

## 2.4 Equality and Diversity

Since 2014 our Athena SWAN Bronze and Silver Award action plans have focused on improving **gender equality and inclusivity**. Key priorities included: the promotion of women as leaders and role models (at the census date all our research groups and centres were directed by women); targeted encouragement and supportive clarity around promotion and leadership ambitions (including through accessing the 'Women's Enhancement' and Aurora programmes); unconscious bias training for all on selection and promotion panels; and establishing working practices that promote work-life balance and support diverse identities within and beyond working life. That work is ongoing, but progress has been made. In our REF2014 submission 25% of our Professors were women and 30% of our academic staff; in 2020 women comprise 40% of our Professoriate, 46% of our Category A staff, 57% of our Technical staff and 60% of our PGR completions. Since 2014, women gained 50% of academic staff promotions. Women are the allocated author for 46% of our submitted outputs, matching our Category A staff balance.

Our **Equality, Diversity and Inclusion Team** (led by Desai) includes staff and student representatives and reports to School and College committees. Supported by RHUL's membership of the Stonewall Diversity Champion programme, the Department has engaged with the LGBT+ Staff Network, 'safe zone' training in LGBTQ+ identities and allyship, and training in Trans awareness, allyship and RHUL's Transgender Equality and Transitioning at Work Guidance. Active Bystander training is addressing responses to discriminatory behaviour. We developed a suite of 'key tips' for leadership roles in the Department to contest forms of unconscious bias, an approach mirrored in the RHUL Equality & Diversity Top Tip Guides for staff. Desai played a key role in RHUL's successful 2019 Race Equality Charter submission and has contributed to the wider debate on UK Geography's institutional whiteness (Area, 2017). Only 2 of our Category A staff at census self-identify in BAME categorisations. Moreover, whilst RHUL data records c.18% of Geography PGR students 2013-19 as other ethnicities than 'White', just 4% of students self-identified as 'Black' and another 4% as 'Mixed'. In that context, the Department plans to institute a programme of dedicated College PGR studentships for British BAME applicants to run from

2022; and a positive action statement for BAME applications to be applied to all job advertisements.

### 3. Income, Infrastructure and Facilities

#### 3.1 Investment through Research Income

Since 2014 we have deployed a diverse ecology of grant income to support our research objectives. We have focused on enabling excellence in six ways.

First, leadership within **major interdisciplinary research centres**. Exemplary are the *Leverhulme Centre for Wildfires, Environment and Society* (Mistry Associate Director; with Imperial College London, King's College London and Reading; 2019-29; total award £10M), which explores the intersection of physical, ecological and social processes in wildfire past, present and future; and the RCN-funded *SapienCE Centre of Excellence*, which brings together expertise in archaeology, Quaternary Science and cognitive science to examine the drivers and character of change in early human behaviour (Armitage Co-PI and Geochronology Lead; with Bergen, Bordeaux, Norce, Tübingen, Witwatersrand; 2017-27; total award c. £12M).

Second, **'challenge-led' research projects**. For example, *Blood Bricks*, winner of THE's 2020 Research Project of the Year (Arts, Humanities and Social Sciences) for its innovation and far-reaching impact, delivered interventionist research on the relations between climate change and modern slavery in the Cambodian construction industry (PI Brickell, CI Parsons; ESRC-DFID; 2017-19; £247K). *The Next Frontier of Climate Policy* extends this research into the international brick trade (PI Parsons, CI Brickell; ESRC-FCDO; 2020-21; £123K). *Living in the Mobility Transition* (Adey Co-PI; with Northeastern; SNCF Forum Vies Mobile; 2015-18; £300K to RHUL) worked globally on the policies and politics of transitions to decarbonized mobilities, developing a framework for 'commoning' mobility futures. *After Disaster Strikes* interrogated the confluence of climatic disasters and conflict situations through a participatory story-telling methodology focused on Mindanao, Philippines (PI Siddiqi; AHRC-GCRF-PaCCS, Newton Fund; 2017-19; £159K). We lead social science contributions to two interdisciplinary projects on *Meat Production and Anti-Microbial Resistance in India* (CI Cole; with Cambridge and Liverpool; ESRC; 2018-21; £428K to RHUL). And *Depleted by Debt?* has brought together geographers, micro-finance economists and nutritionists to provide a gendered lens on the household use of credit to enable climate change resilience (PI Brickell, CI Parsons; ESRC-GCRF Equitable Resilience; 2019-21; £821K).

Third, **'investigator-led' research projects**. Exemplary is *The Mobile Museum* which, in collaboration with Royal Botanic Gardens, Kew, advanced understanding of the geographies of scientific collections by mapping, for the first time, the circulation of biocultural specimens and objects in and out of Kew's globally important Economic Botany Collection (PI Driver; AHRC; 2017-19; £812K). We progressed the mapping and dating of early humans' global dispersal through Leverhulme Trust projects on *Unravelling the Patterns, Impacts and Drivers of Early Modern Human Dispersals from Africa* (PI Blockley, CI Armitage; with Max Planck Institute for the Science of Human History and Natural History Museum; 2017-20; £467K) and *Pleistocene Archaeology, Geochronology and Environment of the Southern Caucasus (PAGES)* (with Winchester and Connecticut; 2016-19; £107K to RHUL). *Making Suburban Faith* explored faith communities' creative re-fashioning of suburban space (CI Gilbert; with UCL; AHRC; 2015-18; £103K to RHUL). *Music, Migration and Mobility* is examining the legacy of migrant musicians from Nazi-Europe in

Britain from a spatial humanities perspective (CI Adey; with Royal College of Music and University of Salzburg; AHRC; 2019-23; £251K to RHUL). Looking ahead, *Think Deep* (PI Hawkins; ERC; 2020-25; £1.6M) is a major investigator-led initiative creating a new research collective of scholars and artists to explore subterranean environmental futures.

Fourth, individual **research fellowships and prizes** provide the consolidated time for major developments in research trajectories, impact work and scholarly outputs. Notably, 15 *postdoctoral fellowships* (c. £2.5M awarded) across all our research groups have allowed ECRs to pursue innovative research agendas, supported by their strong match to our strategic objectives. Two staff were awarded *Philip Leverhulme Prizes* (Brickell, Hawkins; £200K). A *Leverhulme Major Research Fellowship* (Dodds; 2016-20; £182K) focused on the global geopolitics of the Arctic and their policy implications. An *AHRC Leadership Fellowship* (Hawkins; 2016-18; £200K) explored geohumanities approaches to global environment change. A *British Academy / Leverhulme Senior Research Fellowship* (della Dora; 2017-18; £54K) allowed completion of a major new monograph on mantle as metaphor for imagining the Earth (to be published 2021).

Fifth, other research income is directly targeted at **supporting our impact and public engagement work**. Exemplary is Mistry's FCDO funding for the inclusive development and delivery of a *national climate change plan in Venezuela* (2016-18; £32K), and from DEFRA-Darwin Initiative for *Integrating Traditional Knowledge into Guyana's Policy Making and Practice* (2017-21; £88K). Sachs Olsen's British Academy Rising Star Engagement Award (2018-19; £15K) focused on *listening and public engagement in urban futures*. An RGS-IBG award (Pinkerton, with Durham; £4K), associated in-kind support from Jaguar Land Rover and Google Arts and Culture (c.£50K), and RHUL Impact Acceleration Award (£10K) focused on enhancing public understanding of *the geopolitics of no man's land*. External investment from the British Society for Geomorphology, Geologists' Association and International Association of Sedimentologists has supported the on-going development of the publicly focused website *AntarcticGlaciers.org* (Davies; 2018-22; £16K).

Finally, we use **focused smaller awards** to initiate and experiment, and to support research on key field sites. Internally, RHUL's Research Strategy Fund invested £55K in twelve pilot and impact projects. External awards included: an *Akademie Schloss Solitude Fellowship*, a prestigious art-science award delivering studio space and support for Engelmann's arts-practice led research on environmental sensing (2020-21; £10K plus residence); the high-resolution analysis of annual *lake records from Diss Mere* (Martin Puertas; Royal Society; 2017-21; £87K); the investigation of *Lateglacial and early Holocene sediments at Wykeham Quarry* (PI Matthews; Hanson Quarry Products; 2013-16; £95K); *palaeoecological research in Mendips caves* (Schreve; 2014-; £63K in grants and private donations); and work on *Indigenous fire-burning and its integration into a participatory and sustainable fire management policy* (Mistry; Aliança da Terra & Corpo do Bombeiros, and British Academy; 2014-16 and 2016-17; £25K and £30K). The last of these illustrates how our mixed funding ecology knits together different forms and levels of research income, having initiated research that is now being extended over the next decade through the £10M investment in the Leverhulme Research Centre on Wildfires, Environment and Society.

### 3.2 Investment in Infrastructure and Facilities

Since 2014 we have invested £1.1M to enhance our **laboratories and field equipment**. The Department manages a suite of Quaternary Science facilities. Specialist micromorphology, luminescence, tephrochronology, palaeoecology and environmental chemistry laboratories enable geochronological and palaeoenvironmental research of the highest quality, supplemented by access to the isotope labs of the Earth Sciences Department and relevant national facilities (e.g. NERC National Environmental Isotope and Radiocarbon Facilities; £50K in kind). Investment has focused on a deep lake coring platform, upgrading our thin section suite, developing a new imaging suite including optical 3-D geometric morphometrics for our mammalian work, and our OSL Readers. We opened a new GeoVisual Methods Lab (£109K investment) providing both improved GIS facilities and the audio-visual hardware and software for our participatory and creative research in Human Geography. Our **scholarly infrastructure** has significantly benefitted from RHUL's investment (£57m) in a new state-of-the-art library and exhibition space, with 24/7 access, dedicated research facilities and special collections. The refurbishment of RHUL's Bloomsbury estate has further enhanced spaces for research group and public events in central London. The **strategic planning** of our research infrastructure is undertaken by our Laboratory, Infrastructure and Field Leadership Team, whose Lead is a member of our Research Leadership Team. Our Technical Staff team is led by the Technical Operations Manager, who is also the Department's Health and Safety Lead, overseeing robust risk assessment processes and health and safety auditing.

### 3.3 The COVID-19 Pandemic and Research Recovery

We have sought to mitigate the impacts of the COVID-19 pandemic on our research environment, including via controlled access to laboratories and equipment loans that have facilitated analytical work from home. A supportive process ensured staff clinical vulnerabilities were appropriately addressed to enable safe working in diverse circumstances. We actively supported PGR students with UKRI extensions where possible, and RHUL matched these for College-funded students. Extensions for our research grants and fellowships were gained as appropriate. Field research, though significantly impacted, is being supported by a clear institutional policy facilitating case by case risk assessment and planning. Staff sabbatical leave eligibility was postponed by a year to support the introduction of our flexible-education delivery in 2020-21 but re-starts from 2021-22. Staff and PGR wellbeing have been supported through the RHUL Wellbeing Hub, investment in home working infrastructure where needed, and the collective culture of the Department and its research groups, as adapted to online working.

Looking ahead, we are committed to research that enhances post-COVID futures. For example, three UKRI rapid response projects have been initiated: *the effectiveness of mutual-aid groups and their lessons for post-crisis community care* (PI Mould, CI Cole; AHRC; 2020-22; £263K); *'building back better' in the Cambodian global garment industry* (PI Brickell; GCRF-Newton Fund; 2020-22; £249K); and *Covid-19 impacts on Indigenous food sovereignty, livelihoods and biodiversity, Guyana* (PI Mistry; DEFRA-Darwin Initiative; 2021; £31K).

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

### 4.1 Collaborations

**Within the academy** our research projects have involved collaborations with over 50 HEIs, 60% located outside the UK. We further promote academic mobility and knowledge exchange through

funded schemes including EU MSCA-IF (2 fellowships in period; 1 to run 2021-25), British Academy IPM (Dodds with NUS on Asian states and the Arctic Council; 2016-17; £30K) and UKRI seminar series (Willis; unaccompanied children seeking asylum; ESRC; 2013-16; £30K). We have international collaboration agreements (e.g. GFZ German Research Centre for Geosciences, Niels Bohr Centre for Ice and Climate, Lanzhou, Konkuk, Neuchatel and Padua); we run shared collaborative programmes (e.g. research training masterclasses with SYSU, Guangzhou, 2017-19); and staff have had visiting fellowships, professional placements and residencies in the UK, Australia, Canada, Germany, Greece, Italy, Sweden, Taiwan and USA. We play key roles in cross-institutional subdisciplinary groups (e.g. the renowned London Group of Historical Geographers) and international networks (e.g. Blockley, Steering Group, INTIMATE; Driver, Chair, International Conference of Historical Geographers).

**Collaboration beyond the academy** enhances both our research and its societal benefits. The Department is one of the UK's leading centres for UKRI collaborative research training in Geography, with 41 Collaborative Studentships since 2001 and 21 active during the assessment period (13 AHRC, 7 ESRC, 1 EPSRC). Across our entire research portfolio, the main types of **collaborating organisations** included:

- Government departments, national authorities and independent offices with responsibilities in our key research areas (e.g. British Antarctic Survey, DEFRA, DFID/FCO/FCDO, the Defence Science and Technology Laboratory [Dstl], the Met Office, Natural England, the Office of the Independent Anti-Slavery Commissioner, Ordnance Survey and RBG Kew);
- Not for profit organisations, charities, NGOs and international bodies focused on social and environmental benefits globally and locally (e.g. IIC Guyana, the International Labour Organisation, Solidarity Center, UN-Habitat, UN-Women, WaterAid);
- Civil society organisations enabling collaboration and research co-production with communities and their representatives (e.g. North Rupununi District Development Board, Guyana);
- Independent 'think tanks' focused on global affairs and development (e.g. ODI, RUSI);
- Businesses and trade associations engaged with the politics of global trade (e.g. The Brick Development Association, The Body Shop, H&M) or the management of environmental heritage (e.g. Hanson Quarry Products);
- Museums and archives, both national (e.g. British Library, Natural History Museum, RGS-IBG, Royal Museums Greenwich, Science Museum) and local (e.g. Museum of London);
- Arts organisations interested in environment and place (e.g. The Arts Catalyst, Furtherfield, Peckham Platform, Studio Saraceno).

As part of our development of 'creative and experimental geographies' we also have a track record of **artistic collaborations**. We directly fund the Centre for the GeoHumanities' 'creative commissions' for researcher-artist collaborations. We embed researchers within arts projects (e.g. Engelmann in Studio Saraceno); and we embed artists as researchers in multiple ways (from the sensory conceptualisation prioritised in Hawkins' 'Think Deep' project to the 'critical realism' of Thomas Cristofolletti's documentary photography in the 'Blood Bricks' project). We engage artist-in-residence schemes (Parrott, Leverhulme Artist in Residence 2016) and creative sector collaboration funding (e.g. AHRC Creativeworks awards to Hawkins; AHRC Clore Fellowship for Fiona Wotton with Mould, 2019). We collaborate with artists in public engagement projects (e.g. Schreve's collaboration with Sean Harris and his site-specific animations of her Mendip cave

research). And we develop artist-geographers through our creative practice-led doctoral pathway, which since 2014 has supported PhD completions for professionally prize-winning creative practitioners in photography, 'experience design', live art and poetry.

#### 4.2 Contributions to Society and Environment

Our research and collaborations have contributed to wider societal benefit in six main ways.

First, we advanced **community participation in processes of environmental and spatial management**. Our Impact Case Study on 'Amplifying Indigenous knowledge within environmental management and governance in South America' (Mistry) exemplifies a wider range of participatory research practice and community 'capacity building'. For example, Siddiqi's research on 'disaster risk reduction' in conflict zones, and its associated ODI research report (2019), emphasised a more community-based vision to strengthen underlying social contracts and build trust. In the Global North, Sachs Olsen's critical advocacy of participatory art in urban planning has shaped wider discourse on urban spatial democracy and sustainable architecture, including through co-curation of the 2019 Oslo Architecture Triennale, with its 174 events and associated publications, and her judging of the 2020 RIBA MacEwen Award. The 'Making Suburban Faith' project (Gilbert, with UCL) used collaborative research with sixth-formers of different faiths and an international architecture company to design a new multi-faith space for Ealing, West London, engaging young people and faith communities with local planners. And Mould successfully worked with the Long Live Southbank campaign in London to re-shape the planned Undercroft development in recognition of the area's value to the skateboarding community.

Second, we sought to advance the delivery of **human rights**. Our Impact Case Study on 'Challenging human rights abuses in Cambodia' presents key contributions, but sits within a broader suite of work. Bowstead's research on women's and children's journeys to escape domestic violence in the UK has delivered briefing papers to improve relevant support agencies' understanding of relocations and associated needs, supported by a UK Data Service Data Impact Fellowship. Brickell's commissioned research for Dublin City Council produced recommendations on rapid build housing as a solution to housing precarity (2017-18; £10K). And Willis' ESRC seminar series and co-edited collection on unaccompanied young migrants to the UK (2019) was given added impact through a parliamentary launch hosted by Lord Dubs and a Policy Press Briefing setting out a dozen policy and immigration law recommendations.

Third, our research **informed foreign and security policy and understanding**. As well as Dodds' contributions on the polar regions and to strategic insight in NATO and the MoD (e.g. NATO Strategic Foresight Analysis [2017], MoD Strategic Trends Review [2016]), Pinkerton provided expert advice to the UK's overseas territories (e.g. a commissioned report for Gibraltar's government on the International Island Games, 2019); Davies has provided expert advice to FCDO and the Scientific Committee on Antarctic Research (SCAR), and is a member of the Antarctic Placenames Committee; Squire provided input to the Government Office for Science's Foresight report 'Future of the Sea' (2018); and ESRC/Dstl-funded research (2013-15, £327K) delivered policy recommendations to the MoD on military personnel and families' social media use (Adey and Pinkerton, 2015).

Fourth, our research **enhanced professional heritage practice**. In the museum and archives sector our research project collaborations contribute significantly to the curation and exhibition of



national and local scientific and cultural collections. *The Mobile Museum* project with RBG Kew (Driver, Cornish) was a particular focus, involving the co-production of Kew learning resources for schools (including a handbook for creating school museums), an Open House London event, project exhibition and outreach activities. Staff also held numerous advisory roles to institutions: Museum of London Academic Advisory Panel (Gilbert); Natural History Museum, Centre for Arts and Humanities Research Advisory Board (Driver); RGS-IBG Collections Advisory Group Founding Chair (Driver); Royal Museums Greenwich, Trustees Collections & Research Committee (Driver). We also provided expert input for specific projects and exhibitions: British Library, *Lines in the Ice*, 2014-15 (Dodds); Leeds and Wells Museums, specialist advice on mammal collections, 2015-16 (Schreve); Natural History Museum, *One Million Years of the Human Story*, 2014 (Schreve); RBG Kew, advisor on Decolonising Kew project led by Kew's Director of Science, 2019- (Cornish). Additionally, we provided expert advice to Natural England on two Geological Conservation Reviews of the Palaeolithic and Quaternary vertebrate sites in Britain (Candy, Schreve), to Highways England as Palaeolithic and Pleistocene expert for Stonehenge/A303 project work (Schreve), and on site-specific heritage management (e.g. Matthews, Hanson Quarry Products, Wykeham Quarry).

Fifth, our research **promoted more sustainable environmental futures**. Mistry's work has improved conservation and fire management in the globally significant Guiana Shield region, through participatory integration of local communities in the design, application and control of climate change strategies. With a similar ethos of capacity building for knowledge exchange, Milner's secondment with DEFRA improved the environmental science / policy interface in the UK by developing practice in scientific evidence synthesis across DEFRA, BEIS and the Government Office for Science. Milner developed an 'evidence statement' methodology, now adopted by DEFRA's Office of the Chief Scientific Advisor. She also supervised UKRI PGR placement research delivering evidence statements on issues ranging from the impact of nitrogen deposition on semi-natural ecosystems to the socio-ecological impacts of uplands farming, the benefits of pasture-based farming systems, and anti-microbial resistance in the environment (informing the UK Government's five-year strategy on AMR, 2019-24). Building on his work on the Scientific Steering Committee of the International Human Dimensions Programme's Urbanization and Global Environmental Change project, Simon was seconded as Director of Mistra Urban Futures. Specific contributions included a cross-national data set on cities' responses to the Sustainable Development Goals, informing UN statistical monitoring; co-authorship of UN-Habitat's World Cities Report 2020; and a suite of open access policy briefs, reports and research collections directed at policy audiences, available through the Mistra Urban Futures website and publishers like Policy Press.

Sixth, our research **enhanced public understanding of geography**. We published work reaching beyond academic audiences, through primers (e.g. Dodds' co-authored *The Arctic: what everyone needs to know* [OUP, 2019]), polemics (e.g. Mould's widely reviewed and discussed *Against Creativity* [Verso, 2018]), or imaginative engagements with a geographical topic (e.g. Reaktion Earth Series volumes on *Air* [2014], *Ice* [2018] and *Mountain* [2016] by Adey, Dodds and della Dora respectively; Reaktion volume on *Levitation* [2017] by Adey; Reaktion and Science Museum volume on *Radio* [2019] by Pinkerton). Research outputs for public audiences extend to a variety of non-written media, including participatory film (e.g. Mistry's work in Guyana; Kleine's ESRC-CONFAP-Newton funded project [2015-16, £90K] on young people's views on sustainable food futures in Rio de Janeiro and London) and VR digital media (e.g. Pinkerton, with Durham, *Portraits of No Man's Land*, the first academic project developed on Google's Arts and Culture platform).

We curate project specific exhibitions to publicise research findings, the *Blood Bricks* exhibition at the Building Centre in London (2018) being exemplary. And publics are engaged through high-profile arts and activist projects, including Engelmann's curation for *Aerocene* of workshops at Palais de Tokyo (2018) and editing of their Exhibition Road Commission reader (2016).

In addition to our own social media accounts (5.7k Department Twitter followers, c. 50k for 'top 10' staff accounts), blogs and websites, commonly used media platforms for public engagement include *The Guardian: Cities, Nature, Geographical Magazine* (where Dodds' monthly column on geopolitics had over 50,000 monthly readers) and *The Conversation* (where our writing attracted more than 750,000 readers since 2014). Our educational resources for the teaching community have been recognised by the Geographical Association (highly commended for resources on globalization and governance, 2018; and a teaching award for excellence in leading Geography for Willis, 2014) and are being enhanced into a new digital TeacherHub from 2021. Davies' *AntarcticGlaciers.org*, with 1.2M unique visitors, was awarded the 2020 Curry Fund Certificate of Excellence for Geological Education. Other public engagement forums include RHUL's Associate status with Tate Exchange, offering dedicated gallery space for an annual week of public engagement activities (including Centre for GeoHumanities programming 2017-19 on environmental encounters, transcultural dance and the making of sacred space).

#### 4.3 Contributions to the Research Base

We are committed to leadership that makes a positive contribution to our discipline and the wider research base, notably through our work for **professional associations**. For the RGS-IBG this included Council membership (Dodds and Willis [Vice President Expeditions and Fieldwork]), the Collections Advisory Group (Driver, Founding Chair), Committee Member of the National Review of Physical Geography (Schreve), and leading roles in the Research Groups for Climate Change (Parsons), Gender and Feminist Geographies (Brickell, Hawkins), Historical Geography (Hawkins, Keighren), Participatory Geographies (Bowstead), Political Geography (Pinkerton, Squire), Race, Culture and Equality (Desai), Social and Cultural Geography (Adey, Hawkins, Narbed), Urban Geography (Mould), and the Postgraduate Forum (e.g. Willment, Chair) and other PGR representation (e.g. Badger, Lowe, Digital Geographies). Beyond the RGS-IBG leading roles included: British Academy (Chair of Geography & Anthropology Section: Driver), British Science Association (Geography Section Recorder: Cole), British Society for Geomorphology (Working Groups on the Anthropocene and Visualising Geomorphology: Thorndycraft), INQUA (Chair of International Focus Group CELL-50k: Blockley), INTIMATE Steering Group (Blockley), PAGES Working Groups (Global Palaeofire: Colombaroli; Varves: Martin Puertas, Palmer), Planetary Health Alliance (Leader of North European Hub: Cole), and the Quaternary Research Association (Vice-President: Schreve; Executive Committee: Candy; co-founder of Peatland Ecosystems and Time Research Group: Milner).

We contribute to **UKRI Panel and Peer Review Colleges** for the AHRC (Cornish, della Dora, Hawkins [strategic reviewer and panel chair]), ESRC (Brickell, Pinkerton), NERC (Armitage, Blockley, Davies [Cosmogenic Isotope Analysis Facility Steering Committee]) and the UKRI FLF Core Panel (Hawkins). As outlined in section 1.3, we have led **Doctoral Training Partnerships** for AHRC, EPSRC, NERC and the Leverhulme Trust at Director or Board level. We shape our fields through **editorial roles**. Staff edited 12 journals in the period: *Cultural Geographies* (Hawkins); *Earth-Science Reviews* (Candy); *Gender, Place and Culture* (Brickell); *Geographical Journal* (Dodds); *Geography* (Willis); *GeoHumanities* (Hawkins); *History Workshop Journal*

(Driver); *Journal of Historical Geography* (Driver); *Mobilities* (Adey); *Proceedings of the Geologists' Association* (Rose); *Quaternary Science Reviews* (Schreve); *Territory, Politics and Governance* (Dodds); *The Cartographic Journal* (Eades). In addition, we held 48 editorial board memberships and have edited Handbooks in key areas of research concern (*Mobilities*: Adey; *Contemporary Cambodia*; Brickell; *Displacement: Geopolitics, Development, Security and Justice* Group staff collectively).

**Recognition** of our contribution includes **election to Fellowships of scholarly societies**: British Academy (della Dora, Driver); Academy of the Social Sciences (Crang, Dodds, Driver and Simon); Royal Canadian Geographical Society College of Fellows (Dodds, Simon); Royal Historical Society (Driver, Keighren); Society of Antiquaries (Schreve). Honorary Fellowships and Research Associates include British Antarctic Survey (Dodds) and Royal Botanic Gardens, Kew (Cornish, Driver). **Medals, prizes and awards** were received from the RGS-IBG (Busk Medal: Mistry, 2015; Gill Memorial Award: Brickell and Hawkins, 2014 and 2016), the Geologists' Association (Halstead Prize: Davies, 2016), the Geographical Association (Excellence in Leading: Willis, 2014), the Leverhulme Trust (Philip Leverhulme Prizes: Brickell and Hawkins, 2016), the Quaternary Research Association (Lewis Penny Medal: Davies, 2014), Times Higher Education (Research Project of the Year, AHSS: Brickell and Parsons, 2020) and the UK Data Service (Data Impact Fellowship: Bowstead, 2019).