

Institution: University of Sussex
Unit of Assessment: 14 Geography and Environmental Studies
<p>1. Unit context and structure, research, and impact strategy</p> <p>1.1 Introduction</p> <p>The submission to Geography and Environmental Science comes exclusively from the Department of Geography. The Department includes 33 members of faculty (32 FTE). Since REF2014, it has grown by a third, a net growth of 8 FTE. This growth builds on research strengths and develops strategic aims to enhance both research excellence and impact. The department maintains a critical, engaged approach and a broad commitment to applied work and genuine real-world impact. Research within the department is structured into five research clusters: 1. <i>Geographies of Migration</i>; 2. <i>Climate Science and Society</i>; 3. <i>Geomorphology</i>; 4. <i>Politics, Governance and Development</i>; and 5. <i>Histories, Cultures, Networks</i>. These five research clusters have remained stable since REF2014. Although the Department remains our central organisational unit, the research clusters take a lot of the strain of research management and they structure much of this statement. The increase in members of faculty has been shared across four of the clusters, with significant strategic investments in <i>Climate Science and Society</i> (Alcamo; Hook; Lazenzy; Menton; Shamsudduha) and in <i>Histories, Cultures, Networks</i> (Tolia-Kelly; Dussart; Kennedy). The department has a firmly international research agenda, with much of the research in all clusters focused on the Global South.</p> <p>Associated with the significant growth in size in this REF period, the department has performed strongly across all of the key targets in our research plan. The outstanding recognition in Impact (recognised as 80% 4*) was one of our major successes in REF2014. We have sought to maintain the impact focus with significant emphasis on collaboration beyond academia throughout the research process. Even beyond the three Impact Case Studies submitted, research in the department has been used around the world from the radical grassroots to multiple UN organisations. Successful impact is a result of excellent research as well as a collaborative approach. In this REF period, we have published 391 articles in peer reviewed journals, covering all of the major journals in Geography and Environmental Science. A total of 190 (49%) of these 391 articles are co-authored with international collaborators, a key metric for the department and up from less than a third in the previous REF period. We have supervised 51 doctoral researchers to successful completion, almost double the total of 28 for REF2014. Most dramatically our research income has more than tripled, from £4.3 million in the previous REF period to £13.4 million.</p> <p>This successful, strategically planned growth highlights an intensification of research activity over this REF period and an increasingly dynamic research environment across all research clusters. Our engaged research and critical pedagogy, aims to address the most pressing global issues of our times – global inequalities and global justice, climate and environmental change, war and peace, global health and finance crises, intolerance and discrimination, and the legacies of colonialism and conflict. Our mission is to generate knowledge and understanding that can make a difference, for a fairer, safer, more sustainable and more inclusive world, via conceptually-sophisticated yet purposive geographies.</p> <p>1.2 Unit Context and Structure</p> <p>Geography is located in the inter-disciplinary School of Global Studies, along with Anthropology, International Relations and International Development. The School of Global Studies brings together just over 100 academic FTE. The School was created just before REF2014 and has remained institutionally stable. School meetings are held every term, key administrative tasks and events are located at School level and the School occupies a single building, including a large resource centre, a range of meeting rooms and a café. The organisational and physical environment are therefore ideally suited to interdisciplinary collaboration.</p>

Research is managed at School level through three key director posts, all of whom have been geographers since at least 2017: the Director of Research and Knowledge Exchange (DRKE), the Director of Doctoral Studies, and the Research Impact Lead (Collyer, Walsh and Ockwell, respectively). They are supported by 2.2FTE professional services staff who manage organisational and communications support for research and doctoral issues within the School, in addition to central University level administration.

The overall commitment of the University of Sussex to research is expressed through the PVC Research, who is responsible for the university's overall strategic plan. The central university bureaucracy covers support for pre- and post-awards, contracts, procurement, finance and communications. The PVC Research manages strategic support for research across the University, as detailed in our Institutional Environment Template. This allows support for recognised University Research Centres (see below for Geography's involvement in these), regular calls for support through the university's Research Development Fund and some larger strategic investments. In the current REF period, strategic investment has involved over £10 million to support a Strategic Research Programme of four new research centres, two of which have involved Geographers: the Digital Humanities Lab and the Sussex Sustainability Research Programme (SSRP). The University recruited a leading international specialist (Alcamo) to lead the SSRP, former chief scientist at the UN Environment Programme and now Professor of Geography.

Development Studies is one of the major strengths of the entire university– Sussex is ranked first in the world in the current QS World Rankings and has been in every year but one since the last REF. Geographers make a major contribution to this reputation: the current Head of International Development (Carswell) is a Geographer. Geography also accounts for more than half of the University's income from the Global Challenges Research Fund and a substantial share of FCDO (formerly DFID) funding.

Research clusters are the basis for the department's research successes since 2013. They have remained stable during the REF period, structure the life of the Department and form the basis for future research objectives. Clusters are integrated into all stages of research. All members of faculty are formally members of one, and sometimes two research clusters. PhD students are invited to attend meetings of appropriate clusters. Clusters take it in turns to organise weekly departmental seminars. Each cluster develops a term's programme of speakers. These include work in progress seminars for colleagues in the department to polish developing ideas and national and international visitors whose visits maintain networks and collaborations and ensure the department retains access to cutting edge research in our core areas of expertise. Cluster leaders meet once a term in the Departmental Research Committee, chaired by the Department Research Lead.

Clusters hold regular informal meetings to discuss research ideas and plan collective projects. The £2.9m ESRC GCRF project Protracted Displacement Economies, which began at the end of this REF cycle, is a good example of this. It involves four members of the Geographies of Migration cluster (Collyer, Deshingkar, Oeppen, Zaman) and the initial idea was developed through discussions in cluster meetings and was peer-reviewed by other members of the cluster. In this way, clusters provide a forum for informal discussion of research ideas to help form them into fundable projects.

Peer review of all grant applications and journal articles is also organised through clusters. This is the basis for the significant expansion that the department has achieved in both peer reviewed publications and research grant income in this REF period. Both of these measures indicate our success in generating world-leading research. The department has received ten NERC awards, nine ESRC awards and six AHRC awards with substantial additional funding coming from the European Commission, UK government departments and charitable trusts, including two Leverhulme trust awards. A total of nine research funded studentships contributed to the growth in PhD numbers. The Department's research clusters develop research focused around UKRI research priorities across a range of Research Councils. This includes the focus on climate

change and climate science identified by NERC and ESRC and the legacy of colonialism, recognised as a priority by AHRC. These themes demand a strong disciplinary grounding, provided through the research clusters themselves.

UKRI also prioritises interdisciplinary engagement which comes from connections to the wide range of research centres established in the School of Global Studies, where Geography sits and linking research in the School to other Schools in the University. The University recognises two types of research centre: University Research Centres bring together researchers in two or more of the 11 Schools at the university, and can call on central university funding, whereas School Research Centres are supported by the budget of an individual school.

All five research clusters in the Department of Geography have engaged in significant interdisciplinary work with other departments in Global Studies and across campus. The *Geographies of Migration* cluster, for example, forms the core of the Sussex Centre for Migration Research which leads interdisciplinary research at University level with members in 14 different departments, although both the director (Statham) and deputy-director (Zaman) are Geographers. The *Climate Science and Society* cluster is central to the Climate@Sussex network, which has established strong links across campus and with The Institute for Development Studies, pioneering a combination of cutting-edge natural and social science approaches to climate. The *History, Networks, Cultures* cluster has led the Centre for Colonial and Postcolonial Studies, which is at the forefront of decolonization initiatives at University level. The University also supports three regional research centres on Africa, Asia and the Middle East and North Africa. Geographers are involved in all three centres and the interdisciplinary Sussex Africa Centre was established and directed by a Geographer (McGregor).

1.3 Achievement of research objectives outlined in REF2014

The overall aim of the Department outlined in REF2014 was to generate world-leading understanding of global demographic, environmental, socio-economic and cultural transformations and to be at the forefront of advising and producing innovative solutions to pressing problems such as global migration and climate change. The existing five research clusters were central to the reorientation of the Department's research strategy that took place in advance of REF2014 with the aim of achieving that goal. The structure of these research clusters has continued to inform the recruitment of new staff, contributions to research centres, research applications and the strategic direction of all research in the Department. Each research cluster has developed particular responses to these central research objectives. Overall, we are confident that the objectives provided a clear strategic direction for the Department's research and supported the considerable successes of the last seven years.

Our claim to have successfully met the objective of generating world leading understanding of key global challenges in this REF period draws significantly on the record of highly-cited research published in peer reviewed journals and substantial growth of research income. The tripling of research income, to £13.4million covers all major research funders, including 24 UKRI awards, as mentioned above. According to the most recent HESA data (for 18/19) the Geography Department's income was just over £100,000 per FTE, placing us 6th amongst more than 60 geography departments in the country included in that measure. All of those placed above us are very substantially larger, in terms of FTE, so Sussex Geography punches well above its weight. The Department has produced 391 peer reviewed journal articles, 15 books, seven edited books and five journal special issues. The Department's Field Weighted Citation Impact (FWCI) for the entire REF period is 2.52 (generated by SciVal). For the second half of the REF period (Jan 2017 to August 2020) the FWCI rises to 3.2.

1.4 Enabling and Achieving Impact

To enable the development of research impact within the School a Research Impact Strategy was developed in 2016 by the Impact Lead (a Geographer), Director of Research and Knowledge Exchange (also a Geographer) and Research Impact and Engagement Manager. The strategy emphasises the role of research as part of a broader normative commitment to

effecting positive change. Impact arises from continual and ongoing engagement and relationship building beyond academia and beyond the context of any particular research project. The strategy seeks to foster a culture which sees impact not as the outcome of research but its fundamental justification. This School Research and Impact Strategy sets out a commitment to co-producing knowledge with research users, mainstreaming training in research impact from early career stages onwards, situating research in its social and cultural context, ensuring that research carried out at all levels in the School conforms to the highest ethical standards and developing and maintaining a sustainable research environment based on people, culture, infrastructure and research funding that facilitates research of the highest quality. More detailed examples of the variety of impact of the department's research come from the five research clusters.

The *Geographies of Migration* research cluster (Collyer, Deshingkar, King, McGregor, Oeppen, Rogaly, Statham, Walsh, Zaman) remains a centre of internationally recognized expertise. The cluster has a particular interest in the circumstances in which migration can most effectively reduce poverty. This has been achieved through two further extensions to the DFID-funded Migrating out of Poverty Research Programme Consortium (RPC), which came to an end in September 2019. The RPC ran for ten years, located within Geography and led by Deshingkar for the duration. It has already had direct influence on policy work, particularly on national policy in Ghana. In a link with the *Climate, Science and Society* cluster, research has also sought to develop the Human Dimensions of Climate Change theme investigating the relationship between climate change and migration, such as Kniveton's work on the Lancet Commission. Work with refugees remains a priority of this cluster. The cluster has been centrally involved in two major EU funded research programmes focused on refugee movement and has just completed the largest survey ever undertaken on refugee resettlement in the UK, funded by the ESRC. The cluster has also made critical interventions into the terms of contemporary public debates on immigration (Rogaly).

The strongly interdisciplinary *Climate and Society* cluster (Alcamo, Antonarakis, Frogley, Hook, Kniveton, Lazenby, Murton, Ockwell, Rowhani, Shamsudduha, Todd, Wang) aims to improve understanding of the climate systems, the impacts on our 'life support systems' and how to manage those risks to build climate resilience. At the heart of this portfolio are a number of major consortium projects (total funding in excess of £2M) funded through UKRI/DFID programmes which aim to build climate resilience in Africa, namely: The Science for Humanitarian Emergencies and Resilience (SHEAR), Future Climate for Africa (FCFA) and Unlocking the Potential of Groundwater for Poverty Alleviation (UpGro). All these projects combine pure and applied research and involve consortia of UK and African researchers with mandated national and international agencies responsible for risk and resources management in Africa (see our climate risk management Impact case study by Todd, Kniveton Rowhani and Shamsudduha). By pioneering new, interdisciplinary approaches to co-producing knowledge with potential users in Sub-Saharan Africa, this research, augmented by Sussex's leading role in multiple other related research projects, has had a significant impact in changing the way in which climate forecast information is produced and used across East Africa, and hence enhancing climate reliance in Africa more broadly.

Another strand of research in this cluster explores low carbon energy transitions in developing countries, working closely with the Sussex Energy Group. A recent project is supported by a £500,000 share of the new £15 million DFID programmatic funding in this area. Converting new theoretical thinking into practical policy impacts has been a particular character of this low carbon energy and development work, with impacts from the level of UN global climate policy and finance to national policy and practice in Sub Saharan Africa (see Ockwell impact case study). The cluster also has significant success in doctoral research grants, e.g. the successful award of three NERC studentships in this field represents national level recognition of the quality of research.

The *Geomorphology* research cluster (Barlow, Frogley, Murton) is closely related to the *Climate, Science and Society* cluster. Much research in this cluster explores past climates and

geomorphic processes. Murton's research, published in *Nature*, investigating periglacial environments and particularly his editorship of the most recognised journal in the field – *Permafrost and Periglacial Processes* – has cemented his reputation in this field. This links closely with Frogley's work on paleo-environments, for which he has recently been awarded funding jointly with Canadian colleagues. Barlow has also had strong industrial links in terms of applied geomorphology with Jacobs through honorary Professor Roger Moore, leading to successful PhD co-supervision. Finally, the active involvement of Murton with the Engineering Group of the Geological Society led to publication of a 950-page special publication in 2017 on the *Engineering Geology and Geomorphology of Glaciated and Periglaciated Terrains*, which represents the international benchmark for ground investigations in former cold regions.

The *Politics, Governance and Development* cluster (Carswell, Haberly, Laing, Raleigh) has pioneered work around the monitoring and analysis of violent conflict, particularly through the Armed Conflict Location Event Database (ACLED) (see Raleigh's impact case study). This work has now been funded through two ERC awards and has developed an exceptionally strong global reputation, generating data that is used in major international media outlets and government departments. Another strand of work in this cluster has explored the structure and governance of global finance and taxation, including agenda-setting work on FDI (including offshore shell companies) and networks of corporate control researched in collaboration with the NGO Tax Justice, and funded by the ESRC and a DFID Global Integrity Award (Haberly). Cutting edge methodologies draw on leaked data (Panama Papers, Paradise Papers, and Offshore Leaks) to analyse the impact of changing offshore regulatory and enforcement landscape used to launder and store the proceeds of corruption. ESRC-IAA (SSSIF) funds enable the building of the most comprehensive database to date of the true origins of offshore FDI in the world's major economies. A strong strand of work in this cluster is on citizenship, local governance and social movements in African, South Asian and Latin American contexts, published in leading geography disciplinary journals (Carswell, McGregor, Laing). This intersects with work on governance, livelihoods and displacement in the *Geographies of Migration* cluster.

Finally, the *Histories, Cultures, Networks* cluster (Dussart, Griffin, Kennedy, Lester, McGregor, Rogaly, Rycroft, Tolia-Kelly, Walsh) has become one of the largest groups of historical cultural geographers in the UK and has produced a huge range of stand-out research achievements, not least in terms of six scholarly monographs. Decolonisation draws most researchers in this cluster together, with funding from the AHRC's Creative Interruptions project, The Leverhulme Trust and the EU. A strong strand of work relates to decolonising heritage (Tolia-Kelly, McGregor), co-produced with artists, African 'source communities' and partner institutions including African diaspora groups and African museums, universities and heritage organizations. Lester's work on the Australian Research Council funded Minutes of Evidence project, brought Aboriginal experiences and perspectives to bear in a play performed across the country, including at the Sydney Opera House, and in an addition to the History curriculum in Victorian schools. McGregor's AHRC work researched options for decolonizing UK regional museums' colonial-era African collections leading to interventions in national UK policy and professional fora for debates over repatriation and digitization, including the Museums Association, the Museum Ethnographers Group, the Arts Council Working Group on Restitution and Repatriation of Cultural Property, the British Council. Co-production with artists has also been central to Rogaly's series of AHRC Connected Communities projects including the films *Alone Together: The Social Life of Benches* (2015) and *Workers* (2018). Both films involved collaborations with grassroots community organisations in London and in Peterborough respectively.

The Research Impact Strategy is reinforced by an array of targeted support at all stages of research. The globally engaged research culture supported by the wealth of research centres at University and School level ensures quality and relevance of research. The research centres support regular contacts and engagement, through policy events or invited speakers to allow ongoing awareness of the current state of the art in key areas. Planning for impact is incorporated into research applications from the very beginning with a dedicated impact advisor.

User engagement is encouraged and supported through regular organised visits of research users to campus, in addition to research centres, this is organised through the Global Impact Advisory Board. Ongoing policy engagement is facilitated through the dedicated Policy@sussex team (see below and Institutional Environment Template).

Geography has attracted three successful applications for Fast Track impact funding at £3,000 each, through the University's Impact Accelerator Award, as well as larger impact funds, for example Ockwell was recently awarded £22K to run a training course with East African climate policy makers around using their national commitments under the Paris Climate Agreement. Progress on this and all other activities is benchmarked by the Global Impact Advisory Board (see section 4).

1.5 Future objectives

We are very happy with the current organisation of the department which has demonstrated its strengths during the current REF period. New growth will focus on enhancing the five established research clusters. These have achieved a track record of research excellence, demonstrated by growing citations and research income and impact success, earning an international reputation for a particular Sussex perspective on key global issues. Priorities for the next seven-year period build on these successes. The department will continue to grow, generate new collaborations in established areas of research and support emerging research ideas in each cluster. The research clusters provide focus for the well-established international reputation of the department in the fields of international development, migration, conflict, climate science, geomorphology and postcolonial studies. They also provide a framework for areas of research developed over the last REF period that will only gain in relevance in coming years, including low carbon futures, geographies of finance and corruption, heritage and museum studies. Three clear aims will provide strategic direction to the department over the next seven years:

A growing centre for critical, global geographical scholarship.

Our first aim is to continue doing what we have done well over the last REF period. We will continue to work within the interdisciplinary context of the School of Global Studies, contributing to the world leading reputation for development. In each research cluster, some areas now bring together sizeable groups of researchers, benefit from strong international reputations and have picked up multiple, major research grants. These areas, including work on migration and development, climate change, conflict, legacies of empire and 'decolonizing' public heritage/knowledge institutions will be deepened. Each cluster also has research areas that are new and show great promise, where the Department is at the forefront of a cutting-edge international research agenda, around museums and heritage, finance and corruption, displacement and the evolving humanitarian environment and the impacts of the pandemic on our relationship with home. These areas are the priority and further collective work will be prioritised through joint publications, research applications and the strategic use of research leave. Success in these areas will be measured in key metrics of new publications, research income and the wider impact of this research.

Implementing the decolonising agenda across all of our research clusters.

Historical and Cultural Geography is a long-standing research current in the department, and a strong post-colonial strand has been influenced by the subaltern studies group that flourished at Sussex in the 1980s. This has been extended, for example Lester and Dussart's 2014 book, Lester's 2020 book and ongoing research interests in developing critical geographies of British imperialism to inform gaps and biases in public historical understanding. Decolonisation has been further reinforced by the strategic appointment of Tolia-Kelly as Chair of Geography and Heritage studies who brings agenda setting expertise on decolonising research on race and heritage to the department. McGregor's ongoing AHRC project actively furthers debates over the decolonisation of the UK museum sector through a focus on regional museums and African colonial era collections, expanding debates that have raged nationally to regional museums. This established expertise is concentrated in one of our five research clusters. Over the next seven years these insights about the wider context of knowledge will be implemented in all other

research clusters. This includes our physical geography clusters where our work on Climate Resilience in Africa is strongly focused on equitable partnerships with African institutions. This department wide focus will be reflected in the themes of new research and the nature of wider collaborations. We are proud of the growing international co-authorships in the department. We aim to increase this to at least half but more importantly to ensure that a decolonial approach is reflected in the way we do research as well as in the research themes we explore.

Research that is socially engaged and locally relevant.

Reflecting the diversity of society and enabling transformations towards equity and justice are central to our final aim too. The wider impact of research has always been a central concern in the department, and new research is always planned with a view to the changes it will result in. Much of our research is international, including all three of our impact case studies in this REF and our principle areas of research benefit from global reputations for excellence. We want to continue this global level engagement, while at the same time continuing to do socially engaged work at the national level. For example, through Rogaly's series of Connected Communities projects in Brighton, London, and Peterborough. The Geomorphology cluster aspires to meet a national strategic need to investigate frost-disturbed ground for major infrastructure projects such as HS2 and the Lower Thames Crossing. Many areas of current research also have closely related implications for our local area of Sussex and there are opportunities and benefits to make connections locally. To an extent, this is already happening, for example Barlow's role on Lewes Council's Advisory Group on Climate Change, McGregor's work with Sussex and Kent Museums or Collyer's role supporting Brighton & Hove City Council's International Migrant Needs Assessment. Members of the department are well networked with local government and local activist groups – relating to refugees, sustainability, and community building. This is a trend that we will encourage and support over the next seven years since it enhances the potential for long-term collaborative work, supports our climate obligations and helps overcome wider social barriers.

2. People

2.1 Staffing strategy

The ideal, in any department, is that everyone should feel engaged, inspired, and valued for what they do, from newly arrived PhDs to emeritus faculty, enabling the department to be more than the sum of the many individual research achievements. This is our aspiration and there is plenty of evidence of success, from our mentorship system, numerous promotions in this REF period, widespread support for EDI measures, frequent informal meetings, regular research seminars and involvement of colleagues at all levels of seniority. Yet there are areas for improvement and the pandemic, in particular has inevitably caused damage in some areas that will require sustained attention to fix. The end of the pandemic restrictions offers an ideal time to examine the inclusiveness of both structured and informal institutions in the department, to ensure that equalities measures are fully understood, everyone in the Department has access to the support they need at Department, School and University level and newly arrived PhDs are fully involved. As the Department continues to grow, we will work towards better reflecting the society in which it is located.

The Department currently consists of 2 independent postdoctoral fellows, 6 lecturers, 5 senior lecturers, 5 readers and 15 professors. Since 2014 the Department has grown from 24 to 33 members of staff (32 FTE) a net growth of eight FTE. This growth has also helped to improve the gender and ethnic imbalance of the Department. Of the 33 members of the Department, 11, are women. There remains work to be done here, but it is nonetheless a substantial improvement on the previous REF when only 22% of the Department were women. Just over 20% of the current Department are BAME, again a significant increase from under 10% at the last REF. Since we have recruited predominantly at Lecturer level, the cohort of professors does not yet fully reflect these changes, so this requires continued sustained attention, particularly regarding promotions, but the overall diversity of the Department is improving. Our staffing profile has been broadly stable. Of those returned in the last REF, only two have left, both

professors and during the REF period we recruited two temporary lecturers who moved onto permanent positions elsewhere.

This stability has made long term strategic planning much easier during this REF period. We have focused on three strategic staffing priorities. The first has been to recruit primarily at early career level, eight of the ten appointments in this REF period have been made at lecturer or postdoctoral researcher. This has revitalised the research culture of the Department. All six of those currently at Lecturer level were recruited since the last REF, in addition to two independent postdoctoral researchers. These eight positions bring in specific expertise to strengthen our research clusters. Four are located in the *Climate Science and Society* cluster (Hook; Lazenby; Menton; Shamsudduha), two in *Histories, Cultures, Networks* (Dussart; Kennedy) and one each in *Geographies of Migration* (Zaman) and *Politics, Governance and Development* (Laing).

Second, we have made two high-profile senior appointments at Professorial level to boost our profile in strategic areas. Alcamo was previously Chief Scientist at the UN Environment Programme; he was recruited to direct the Sussex Sustainability Research Programme and is now Professor of Geography and a senior member of the *Climate Science and Society* research cluster. Tolia-Kelly was recruited for her outstanding work in post-colonial and decolonial work, she is leading EDI work in the School with BAME colleagues and, as Professor of Geography and Heritage Studies is a vital addition to the *Histories, Cultures, Networks* research cluster.

A third priority for the Department has been to maintain continuity, provide intellectual and organisational leadership to our research clusters, and build upon our performance in REF 2014. Central to achieving this, has been to enhance the vibrancy, professionalism, and collegiality of our research environment; and at the same time, to recognise and reward excellence through internal promotions. There has been substantial promotion of existing faculty. Since the last REF three members of staff has been promoted to Senior Lecturer, four to Reader and four to Professor. The promotions process is managed centrally at University level with national and international involvement for promotions to Reader and Professor.

2.2 Career progression and appraisal

Our focus on early career recruitment, combined with a relatively stable senior staff base, mean that supporting staff development has needed to be one of our priorities – at all levels. The Department has clear and consistent staff development policies. Every member is appraised annually by trained senior Geography faculty or the Head of School. All faculty have a mentor within their research cluster. Mentors share research interests with their mentee and meet to discuss prioritisation of research goals, identifying and discussing grants, reading drafts of publications, and providing wider career advice. Early-career researchers have School and University-level induction programmes, Departmental mentoring and annual probation-track meetings and receive a 25-per-cent-lighter teaching load.

We employ a policy of co-supervision for all PhD students and pair early-career researchers with experienced supervisors to give them mentored experience of doctoral supervision. All faculty are entitled to apply for study leave every sixth semester, subject to the approval of a research plan. Leave applications are approved first by the Head of Department, then by the Head of School and finally confirmed by University HR. Strategic study leave is also occasionally granted to support faculty in meeting research deadlines – a policy applied particularly generously in respect of early-career researchers. Staff are actively encouraged to apply for promotion and supported in their applications by the Head of Department.

2.3 Recognising and rewarding research and impact achievement

Across the School of Global Studies, there is a positive encouragement of research, particularly for impact. New research grants covering a researcher's time automatically lead to a proportional reduction in teaching and administrative duties regardless of the size of the allocation, so even small grants are recognised in broader workload planning. Research clusters

are thoroughly involved in support and peer review for new research applications which creates a sense of shared success when new research grants are successful and a collegial support to examine feedback when applications are rejected. This process has a demonstrable impact on overall research income, demonstrated by the tripling of overall income over this research period. The University has created an annual event to recognise impact across the University, including awards across three categories. Members of the Geography Department have received three impact awards in the four years that this scheme has operated.

2.4 Research students

The Department has awarded 51 PhDs since the last REF (see annual detail in table below). This is a very substantial increase over the 28 awarded in the last REF period. In addition, members of the Department have been involved as one supervisor of an additional 20 doctoral researchers in closely related disciplines, particularly International Development but also Anthropology, Politics, SPRU (Science Policy Research Unit) and Law. The department is an increasingly popular place for doctoral researchers, with 771 applications received over the whole period.

Academic year	'13-'14	'14-'15	'15-'16	'16-'17	'17-'18	'18-'19	'19-'20
PhDs Awarded	9	4	2	7	12	12	5

In total 26 doctoral researchers in Geography have received funding since 2014. Since 2017, Sussex has formed part of the ESRC South East Network for Social Sciences (SeNSS) Doctoral Training Partnership, a network of 10 universities. The SeNSS DTP has made a total of ten awards in Human Geography in its first four years and the Department has received four of these awards. Other funding sources include five from the previous ESRC Doctoral Training Consortium, which involved Sussex alone, but also three NERC studentships, six studentships through various European Union funded projects and an additional ten different sources of public and private funding (both national and international), including three alumni funded scholarships through the Pete Carpenter African Climate Scholarships programme. The Department has now reached a target of 75 percent of all PGRs submitting within the maximum period of 4 years.

We view regular, engaged supervision as crucial to the doctoral research process and to the overall vitality of our research community. Supervisors are tasked both with providing expert guidance on research design, theory, and the substantive content of doctoral projects, and with mentoring and supporting the career development of their researchers. All doctoral researchers have two supervisors; in the large majority of cases these are joint supervisors who attend all supervision meetings and comment equally on written work.

All doctoral researchers go through an annual review process every summer, in which both researchers and supervisors give written feedback on progress, and each researcher meets individually with the Department's Doctoral Programme Convenor. Beyond this, all first-year researchers are required to produce an extended research plan, which is first presented to the Department's research community, and is then revised, submitted, assessed by an independent member of faculty, and then often revised once more, with progression to the second year being conditional upon satisfactory work. Progress is overseen by the Convenor working with a dedicated Doctoral Programme administrator, the School Director of Doctoral Studies, and the University Doctoral School.

Doctoral researchers are treated as full members of the Department's research community. All first-year doctoral researchers present their work to the Department each spring, in dedicated doctoral workshops which all faculty not on leave are expected to attend. Doctoral researchers are, like faculty, expected to attend weekly departmental seminars. Each new researcher is also required to join one of our research clusters and participate in its activities. To facilitate all of this, faculty and doctoral research offices are co-located, with all doctoral researchers having shared office space plus access to School and central University computing facilities (including the University Library's Research Hive, a dedicated area for researchers used primarily by doctoral

researchers), and common room. All doctoral researchers receive financial support to attend one UK or international conference per year.

Once they have graduated, our doctoral researchers take up a wide range of professions, all around the world. We do not systematically collect data on these varied destinations, but we are in continual contact with a large majority of the 51 awarded PhDs awarded over the last seven years. As befits the exceptionally international nature of our doctoral researchers, a number have returned to their countries of citizenship to take up government roles, including Cemre Erciyes, who graduated in 2014 and now works as a researcher for the Abkhazian government, Marlon Bristol (2017) is a senior civil servant in Guyana, Abdifatah Tahir (2017) is an MP in the Somali Parliament and Joniada Barjaba (2018) works for the Albanian Diaspora Ministry. Others have senior non-governmental roles, such as Lorena Guzman Elizalde (2017), a researcher with the Mexican Red Cross or Bashair Ahmed (2020) who directs the diaspora organisation Shabaka, in London. It is perhaps unsurprising that the large majority remain in academia. At least 20 are in postdoctoral researcher roles, in the UK and internationally, including five who have gone on to Marie Skłodowska Curie fellowships elsewhere in Europe. A slightly smaller number have secured lectureships at universities in Austria, Germany, Finland, India, and Chile and in the UK at UEA, OU, KCL, Kingston and of course, Sussex. Many are already making a significant contribution, developing their research, editing journals, and producing widely cited publications.

2.5 Equality, diversity, and wellbeing

Members of the School of Global Studies actively challenge racism, sexism, homophobia, transphobia, ableism, and oppression in all its forms. We strive to be an inclusive and supportive space for all of our staff and students and all staff have equality and diversity training. Academics, students, and professional service staff promote equality, diversity, and inclusion across the range of our work and knowledge transfers with the communities that we work with. In practical terms this involves targeted training for mentoring and support at School level and mentoring for all new staff. The University has a high level, public commitment to supporting equality and diversity through the Equality, Diversity, and Inclusion policy. The School has supported this with key, senior level appointments to support inclusion in priority areas including BAME recruitment, retention, and progression at all levels of research, LGBTQ+ students and staff, the Gender pay gap and mental health. We have both BAME and women's mentoring networks to ensure regular support and channel advice at strategic development, such as around promotions. These networks meet regularly on an informal basis over coffee or a meal, in addition to more formal one-to-one support. In October 2017, the School launched Mind the Gap (MTG) – a BAME Student Support and Mentoring Pilot project to enhance the BAME experience at Sussex, through the provision of pastoral and academic support and mentoring to increase overall levels of achievement, under the leadership of Geographer, Tolia-Kelly.

Within Geography, full account is taken wherever possible of the different challenges and circumstances people face in seeking to conduct their research and all staff are required to undertake training on 'diversity in the workplace', while those involved in recruitment must also follow equalities and diversities training on unconscious bias. We also have a BAME champion at department level. Other concrete measures include adjusting the timing of research seminars for those with caring responsibilities, provision for flexible working to recognise those with caring duties and support for remote working. In our weekly seminars, we are also attentive to dynamics around seniority and gender among presenters and have made conscious efforts to invite more scholars of colour to present their work. Beyond this, our recruitment strategy is aimed at diversifying faculty, achieving a balance on hiring committees and new positions are framed to increase the likelihood of attracting diversity of thought and background. The Department's research committee seeks to achieve a balance around gender and seniority to address issues of unconscious bias that may arise in selecting REF outputs and providing feedback to colleagues. To this end, we regularly audit study leave and have conducted an EDI audit of all REF outputs.

Addressing gender inequities is also of the utmost importance to the Department and the School. The University median gender pay gap for 2019 is 18.2%. We work closely with the Centre for Gender Studies at the University of Sussex to challenge university cultures on equality and diversity and actively participate in their programme of events with staff to raise awareness of these issues. The University holds an Athena Swan bronze award. The Department also wholeheartedly subscribes to the University's 'Trans and Non-Binary Equality Policy Statement' which prohibits discrimination against people on the grounds of their gender identity or gender expression, supports the University of Sussex LGBT+ Staff Network and works closely with the Centre for the Study of Sexual Dissidence given the overlap with our own work on sexuality and sexual difference. In addition, the School of Global Studies has a set of guiding principles to deal with issues of bullying, prejudice and harassment in the workplace and members of the Department have actively participated in events and provided support to work raising awareness of mental health issues.

3. Income, infrastructure, and facilities

3.1 Enhancing and diversifying income

Research income in the Geography Department over the last REF period was £4.3 million. In the current REF period this has more than tripled to £13.4m over a time when the number of staff has only increased by a third (from 24 to 32). At a time when competition for research funding is increasing, this marks a major achievement for the department that has supported the significant expansion over the REF period. It has been achieved through the focused, strategic, collective approach organised through the department's five research clusters. Peer review of all grants is facilitated through the research clusters, as discussed above, and monitored at school level. In addition, targeted support is offered for grants in excess of £500,000 involving rapid review by expert reviewers recruited from across the University.

These grants have been spread across all our research clusters, exhibiting a wide diversity of sources and a very broad-based support across the Department. The total £13.4m is made up of 87 separate grants, a mean of just over £150,000 per grant. Of the four over the £1m mark only one was an individual achievement: Raleigh's £1.3m ERC Consolidator Grant, her second ERC award of the REF period, both in the *Politics, Governance, Development* research cluster. The other three large grants were very much collective efforts with at least three investigators in the department, including those at Lecturer and Senior Lecturer level: the £2.5m DFID funded *Migrating out of Poverty*, led by Deshingkar with an interdisciplinary team, the £2.3m ESRC GCRF funded *Protracted Displacement Economies* project, from the *Geographies of Migration* research cluster and the £1m NERC/ESRC/DFID funded *Forecast Based Preparedness Action (ForPac)* project, from the *Climate Science and Society* cluster. We have three other grants between £500,000 and £1m, including Ockwell's DFID funded work on modern energy cooking services in the Global South.

The clusters arrangement is not so rigid as to prevent other forms of research developing. The relatively small size of the department allows for cross-cutting approaches, that are often experimental and interdisciplinary. The large majority of our research projects fall under half a million and account for almost half of our total research funding, where such risk taking is more encouraged. There are examples of really cutting edge interdisciplinarity here that our research systems are keen to foster. These may occur within the Department, such as the NERC project on the impacts of cliff erosion in Thailand that involves representatives of three clusters: *Geomorphology* (Barlow), *Climate Science and Society* (Wang) and *Geographies of Migration* (Statham). An even broader approach, going beyond the Department, considers the history of human environment interaction around the Indian Ocean, led by a historian and involving physical geographers in both the *Geomorphology* (Frogley) and *Climate Science and Society* (Kniveton & Wang) research clusters for a string of successful applications with McGill University, in Canada. We encourage and support the involvement of early career colleagues at every level and Lecturers and Senior Lecturers are as involved in externally funded research as more senior colleagues.

The university also operates four internal funding schemes which provided significant resources to the department in addition to the external funding. Over the last seven years, these have provided a total of £416,340 to 22 members of the Department to support 29 separate projects. These schemes are all competitively allocated with funding distributed through internal selection procedures; they have been used to seed fund external applications, to develop impact from existing projects and to generate initial funding for early career researchers. Beyond the funding, they generate new networks across the university supporting further interdisciplinarity. The largest share of internal funding has come from the Sussex Sustainability Research Programme. Since 2017, SSRP has supported interdisciplinary projects addressing connections between the Sustainable Development Goals: 14 members of the Department have been involved in this scheme and three projects led by members of the Department allocated £100,000 each. Second, the Research Development Fund (RDF) has operated throughout the REF period, with almost annual calls covering all areas of research. The Department has seen 12 projects funded through the RDF for a total £103,840, including McGregor's initial work with local museums in 2014 that supported her successful AHRC application. Third, the university has held ESRC Impact Accelerator Accounts (IAA) centrally, distributing small sums of funding on a fast turnaround, rolling basis; four awards worth £28,000 have been granted to Geographers. Finally, and most recently, some of the University's GCRF QR money has been distributed competitively, supporting two projects in Geography with £84,500 in funding.

The research organisation of the Department supports all of these schemes, both external and internal. The research clusters, as the fundamental building blocks of the Department's research culture, are central to organising the response. As the number of cross-cluster and interdisciplinary projects demonstrate, the research clusters are just the start. Interdisciplinarity is strongly encouraged by The Departmental Research Committee (DRC), chaired by the Department's Research Lead at which cluster leads are represented. The DRC provides central oversight supporting strategic research planning at the Departmental level. In turn, the Department's Research Lead sits on the School Research Committee, which is chaired by the School's Director of Research and Knowledge Exchange. This structure ensures a fast, informed, and collective response to external opportunities and feeds cluster ideas into Department and School responses. In parallel to the DRC, the department has operated a REF committee with representation from Physical and Human Geography at varying career levels. The REF Committee has engaged with External Research Advisors in each of Physical and Human Geography to support and advise on the selection of outputs, impact case studies and environment statement.

3.2 Scholarly infrastructure

Beyond the Department, facilities at the School and University level provide substantial additional support to increase the quality of grant applications, to ensure that opportunities for impact of ongoing research are maximised and to prepare for external forms of assessment. We are extremely lucky with the physical infrastructure of the university – the beautiful campus location, on the edge of the South Downs National Park is, as we tell our students, ideal for studying geography. The campus includes all of our key physical infrastructure. The School of Global Studies is located in a single building with all Human Geography colleagues. Physical Geography is co-located near the Natural Sciences, a five-minute walk away. This allows Physical Geographers to benefit from co-location with relevant labs. There is also an attractive shared common room for Physical Geography, where the entire Department meets informally for periodic discussions over coffee. The research of many Physical Geographers in the Climate Science and Society research cluster is supported by access to the university's High-Performance Computing, which is managed centrally. Additionally, Physical Geography hosts the Sussex Permafrost Laboratory, a unique facility in the UK for conducting physical modelling experiments on freeze–thaw processes and focus for visiting international researchers (e.g., from Germany and China). The Permafrost Lab has produced a steady stream of high-quality publications, and since 2018 has focused on pilot work preparing for an EPSRC grant application by Murton, Barlow, and Moore in the Geomorphology research cluster with the Clinical Imaging Sciences Centre at Sussex.

Impact is managed at School level, with significant commitment. Implementation of the School Impact Strategy is overseen and implemented by a dedicated School Impact Lead (a senior academic with expertise and a track record in national and international research impact, based in the Geography Department) and Research Impact and Engagement Manager (a professional services appointment with explicit experience of supporting research impact and research communication to non-academic audiences). We work with a Global Impact Advisory Board, a group of expert external potential research users, detailed in the following section, which provides an important means of benchmarking and facilitating impact achievement.

At University level, we also benefit from a range of centralised support. The University's Research Dashboard provides up-to-date research management information and Sussex Research Online (SRO), supported by the University Library, provides the institutional repository for outputs. The recently implemented Symplectic Elements platform enables researchers to capture, collate and showcase research activities and enhance open access compliance. Significantly enhanced central support for research impact, provided centrally through the Research Quality and Impact team with dedicated Research Impact Officer, includes an online Research Impact Toolkit, training impact pathway guidance for individual bids, and an annual Impact Day and Impact Awards.

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

4.1 Collaboration with research users and beneficiaries

The department is closely aligned with other departments in the school and has been particularly engaged in the *Policy@Sussex* network through the school's Research Impact and Engagement Manager linking social science Schools at the University of Sussex. Policy@Sussex is a network of professional services staff across the 5 main social science schools at Sussex who support academics in pursuing policy impact. Between 2016-2019, the team supported over 50 individual academics, including written responses to 11 Parliamentary inquiries and 6 Governmental consultations.

Impact is built into research projects from the beginning. Researchers meet and work with end users on a regular basis in a variety of ways, both official and informal, particularly through local connections and networks, as described above. These include recognised roles in governmental advisory committees, working as trustees with NGOs or through more informal activist networks. The Department's research agenda is responsive to real world developments, in addition to the theoretical context of relevant sub-disciplines. New research projects are often specifically tailored around end-user involvement and larger projects involve advisory boards to offer specifically tailored advice.

The *Global Studies Impact Advisory Board* is one of the key routes, School-wide, to establishing collaborations with research users. It was established in 2015 through ESRC Impact Acceleration Award funding. Membership is made up of high-level representatives from across Whitehall (including BEIS, FCO, DFID, DTI, and the British Council) national and international NGOs, the private sector and broadsheet media (The Guardian). The Board convenes twice a year and provides an opportunity for academics to present their research and take advice on how to augment its impact. The Board has become integral to the School's impact plans and helped to bring together the School Impact Strategy. The Advisory Board also benefits Sussex's profile across government, the media, and the voluntary sector, increasing the chances of high-level potential research users reaching out to Sussex as their first point of call for advice and consultancy on policy and practice.

Other ways in which the department facilitates collaboration with research users and beneficiaries include a specific budget and support for developing policy briefing notes and convening external events, including recent events in the House of Commons and House of Lords. Dedicated training and one-on-one support is provided to staff in designing and communicating research for impact, based on a commitment to co-producing knowledge with research users; as well as support for evidencing impact and reflecting on research users' self-

defined needs in tailoring future research, communications and engagement (e.g. see the pioneering approach to knowledge co-production, bridging insights across human and physical geography in Todd et al.'s impact case study).

4.2 Contribution to the sustainability of the discipline

The Department is committed to ongoing engagement to support the sustainability of the discipline. Departmental members are committed to the major disciplinary body, the Royal Geographical Society (with the Institute of British Geographers) through responsibilities in research groups, such as Griffin's chair of the Historical Geography Research Group (-2017) and Tolia-Kelly's membership of the Race Group and support with the Society's policy writing around race. Members of the Department in three research clusters (Collyer, McGregor, Kniveton, Raleigh) were awarded the RGS (IBG)'s first Field Research Programme entitled 'Migrants on the Margins'. This programme was designed to showcase the ways in which Geography can contribute to understanding major contemporary global challenges of climate change, migration, conflict, and urban poverty. The Society provided over £250,000 in support, including two international PhD scholarships and communications support, including hosting the website. Research was used to support focused education programmes to all schools in the UK which has won two national awards. In 2016, Kniveton was awarded the Cuthbert Peek award by the RGS for research on the relationship between climate change and migration.

Members of the Department have established a productive partnership with Time for Geography (an organisation geared towards producing the next generation of geographers via open access educational resources). Lazenby and Frogley have worked on online courses, particularly around climate change. Their Climate Change Knowledge Booster was Highly Commended in the Geographical Associations (GA) publishers award. The GA also recognised Antonarakis' article 'linking carbon and water cycles with forests' in 2018. Other prizes include the *Journal of Historical Geography* prize for the best article published in 2016 (awarded to Griffin) and the *Journal Migration Studies* prize for the best article published in 2014 (awarded to Collyer). One of the clearest markers of esteem is our involvement in the REF itself, through Todd's membership of the UoA14 Panel.

4.3 Wider (inter)disciplinary influence and contributions

The influence of the geography department continues well beyond the discipline. Members of the Department have positions which indicate their personal engagement as well as the reach and esteem of the Department's research. At the international level, members of the Department hold significant advisory positions with UN or EU organisations: Kniveton, sits on UNEP's International Resource Panel, one of 36 members from academia and government around the world, Shamsudduha is an IPCC Contributing Author, King wrote a major review for the European Commission of all migration research they have funded, Oeppen has advised OECD-DAC and IOM on return migration and Ockwell has advised and written policy for the UNFCCC, the \$10m Green Climate Fund and the African Union..

At the national level, Deshingkar has advised the Indian Ministry of Housing and Urban Affairs in supporting their response to the massive movements of migrant workers during the pandemic. Also relating to the pandemic, in the UK Hook's work on the climate impacts of remote learning informed policy in BEIS during 2020. Over the whole REF period, Lester has been regularly invited by FCDO to speak to diplomats on British imperial history. Collyer and Deshingkar are two of only five academic members of FCDO's External Reference Group on migration and Collyer chairs the Independent Group on Country of Origin Information, within the office of the Chief Inspector of Borders and Immigration, a group of ten academic and NGO specialists, that also includes Oeppen, who endeavour to improve the quality of information on which the Home Office makes asylum decisions. Also, Ockwell sits on the board of the Low Carbon Energy for Development Network; originally funded by BEIS, the LCEDN provides a platform for academics, practitioners, policy-makers and private sector organisations to interact and cooperate on research for low-carbon development, most recently having provided the starting point for the £15m DFID funded Modern Energy Cooking Services Programme.

Beyond government, the commitment of the *Histories, Cultures and Networks cluster* to address and improve understanding and representation of heritage in the work of museums is well expressed in Tolia-Kelly's work with Museums Detox, the network of people of colour working for museums and galleries, and McGregor's engagement with UK regional museums around decolonising their work, feeding into national policy fora including the Museums Association and the Museum Ethnographer's Group. Rogaly's engagement in education beyond the discipline is illustrated by his three-year role as writer in residence at the community arts hub Metal Peterborough. Finally, the East African focus of the Climate and Society cluster is illustrated by Rowhani's work as Trustee of the British Institute in East Africa, or Ockwell's ongoing engagement with and UK lead role, in the Africa Sustainability Hub, which provides pan African policy advice on low carbon development and green growth, including advising and convening high level policy development panels for the African Union.

Members of the Department have editorship roles in a range of journals reflecting the breadth of research in the Department. These include the Journal of Ethnic and Migration Studies (Taylor and Francis), Journal of Migration and Development (Routledge), Political Geography (Elsevier), The Journal of Southern African Studies (Taylor and Francis), the Journal of Historical Geography (Elsevier), Rural History (Cambridge University Press), Permafrost and Periglacial Processes (Wiley), Landslides (Springer), Hydrology Journal (Springer) and Frontiers in Water (Frontiers). They also edit book series, including Manchester Studies in Imperialism (Manchester University Press), Other Histories of Empire (Bloomsbury), Imperial Histories (Bloomsbury), Mobility and Politics (Palgrave) and Critical Studies in Heritage, Emotion and Affect (Routledge). Members of the Department also make up core membership of several inter-disciplinary centres and research groups, including the Sussex Sustainability Research Centre, ESRC STEPS Centre, and Sussex Energy Group, bridging geographical perspectives with multiple other disciplines, including Development Studies, Innovation Studies, Evolutionary Economics and Science and Technology Studies.