

Institution: Cardiff University
Unit of Assessment 14: Geography and Environmental Studies
<p>1. Unit context and structure, research and impact strategy</p> <p>1.1 Overview</p> <p>This submission covers all research conducted in the School of Geography and Planning at Cardiff University. At its foundation, more than 50 years ago (1966), the School was rooted in research related to spatial planning; since then, it has evolved into a centre that sets and follows a unique and distinct research agenda, integrating human geography and planning. This distinctiveness has grown in recent years, especially since REF2014, with the continued expansion of human geography research to complement the already embedded spatial planning research agenda. In particular, it is the interface between these two fields that leads to the generation of knowledge with a capability to have significant impact beyond scholarly debates to policy, economy, environment and society.</p> <p>As part of this transformation, during the REF2021 period the School grew from a little over 30 to more than 50 academic staff, in the process appointing 21 new Lecturers (which significantly boosted the number of early career lecturers), as well as four new Senior Lecturers and four new Professors, two of whom have been appointed as Professors of Practice to help the School maintain its leadership in research impact and innovation. This staffing strategy led to the establishment of new research groups (e.g., the Social and Cultural Research Group) and centres (e.g., the Cities Research Centre), contributed to increased research income (see section 3) and fostered the development of new activities -- including hosting the <i>UK-Ireland Planning Research Conference</i> in 2016 and the prestigious <i>Annual International Royal Geographical Society Conference</i> in 2018. These initiatives and activities have helped consolidate the School's position as a focal point for international debates within and across human geography and planning.</p> <p>1.2 Unit Structure</p> <p>The School of Geography and Planning is one of 10 schools located within the <i>College of Arts, Humanities and Social Sciences</i>, which is one of three colleges within Cardiff University. Research in the School is guided by, and benefits from, the strategic objectives established by the Pro Vice-Chancellor for Research, Innovation and Enterprise and the College Dean of Research, as well as the research culture and success of the wider institution within which it is situated.</p> <p>Research that cuts across the School's core specialisms is primarily organised into four Research Groups: <i>Economic and Political Geographies</i>; <i>Environment</i>; <i>Social and Cultural Geography</i>; and <i>Spatial Planning and Analysis in City Environments</i>. These Groups provide the main support mechanism for individual researchers in the School and enable senior staff, more early career researchers and PhD students to come together to discuss and develop research in both a formal and informal environment. The Groups have evolved and been reconfigured since REF2014 to ensure that the value and contribution of the research generated from recent investments in people, infrastructure and resource are fully captured. Alongside the Research Groups, complementary Research Centres and Research Institutes (see below) provide a platform for more focused programmes of interdisciplinary research, combining the interests of several research groups and connecting with other Schools in the University and beyond (e.g., the University's Sustainable Places Research Institute). A summary of the work and profile of each Research Group is detailed below:</p> <p>The Economic and Political Geography Research Group (led by <u>Fuller</u> and including <u>Bristow</u>, <u>De Laurentis</u>, <u>Golubchikov</u>, <u>Healy</u>, <u>Henderson</u>, <u>Huggins</u>, <u>Madden</u>, <u>Morgan</u> and <u>Prokop</u>) specialises in the study of the nature of urban, regional and city-regional spaces and how they are shaped and transformed by different social, political, economic and environmental actors and processes. Group members have contributed considerably to various theoretical debates and empirical understandings, critically engaging with discussions concerning the configuration and multi-level governance of urban and regional spaces.</p> <p>Academics within the Group have undertaken research funded by various research bodies, often in collaboration with key national and international organisations. This includes funding from the</p>

Economic and Social Research Council (ESRC) on regional economic productivity; Volkswagen Foundation-funded research on regional development; Natural Environment Research Council (NERC) funding to examine resilience; Leverhulme Trust research on the corporate responses to Brexit; and research commissioned by the United Nations (United Nations Economic Commission for Europe (UNECE) and UN-HABITAT) on sustainable urban development (forming part of an impact case study led by Golubchikov). Through this funding and the collaborations established, members of the Economic and Political Geography Research Group have developed new metrics for measuring regional competitiveness; utilised resilience concepts to identify key principles that help regions to prepare for future economic crises; played a prominent role in the reframing of regional development policy at the EU level (culminating in an impact case study led by Morgan); and contributed to the development of the Cardiff City-Region.

The **Environment Research Group** (led by O'Neill and including Collins, Cowell, Enticott, Flynn, Gonzalez, Hacking, Hobson, Ioris, Marsden, Mattioni, Milbourne, O'Mahony, Pitt, Sonnino and Windemer) is a large cluster of human geographers and environmental planners interested in understanding and resolving global environmental challenges. Key research questions addressed by members of this Group cut across a range of different fields -- from climate change and food security to renewable energy and green infrastructure, through to rural development, biosecurity and sustainable food systems, ecological footprinting, energy transitions and post-Brexit environmental governance. Drawing on cutting-edge theoretical approaches from human geography, science and technology studies and political ecology, research by members of this Group is conducted using a range of methodological approaches, including ethnographic, participatory methods and ecological footprinting for assessing the environmental impact of sport and cultural events (leading to an impact case study by Collins).

Reflecting the global significance of environmental research, the Group has strong links with the University's *Sustainable Places Research Institute* and partnerships with other universities in the UK and abroad. It conducts research across the world, with a particular focus on Europe and Asia. Funded by the European Commission and a range of national and international organisations, researchers in the Environment Research Group have raised the profile of urban food policies in UN debates (leading to an impact case study by Sonnino), influenced European legislation on animal welfare and provided support to the Welsh National Food Policy and Rural Development Plan and the UK Government Department for Environment, Food and Rural Affairs' (DEFRA) management of animal disease and biosecurity.

The **Social and Cultural Geography Research Group** (led by Bridge and including Anderson, Bear, Boyer, Brigstocke, Deverteuil, Gale, Gassner, Herman, Ince, Mackie, Miele, Owen, Prior, Smith (Harriet), Smith (Tom), Spinney and Williams) is one of the largest in the UK and is at the cutting-edge of international agendas focused on critical thinking -- including feminist, Marxist, postcolonial, post-structural, 'more-than-human' and 'non-representational' theories and geohumanities. Cross-cutting themes covered by researchers in this Group include geographies of inequality and injustice; human-non-animal relations and biosecurity; human mobilities, embodiment and identity. The Group's research encompasses a broad range of empirical topics, including breastfeeding, gentrification, housing and homelessness, drugs and alcohol, cycling, food banks, Fair trade, religion and spirituality, surfing, fashion, soundscapes, humour, dance and community gardening.

Funding from the Arts and Humanities Research Council (AHRC), ESRC, Engineering and Physical Sciences Research Council (EPSRC), Leverhulme Trust, British Academy and Wellcome Trust has enabled the Social and Cultural Geography Research Group to undertake research (underpinned by ethnographic, innovative and participatory methods) that has sparked positive legislative change on homelessness in Wales and England (leading to an impact case by Mackie), helped protect the rights of religious minorities across English planning authorities, raised awareness amongst UK policy-makers about the challenges facing mothers as they seek to integrate breastfeeding into their daily lives, and re-oriented ways of thinking about the 'right to the city' for marginalized groups.

The **Spatial Planning and Analysis in City Environments (SPACE) Research Group** (led by Shahab and including Aelbrecht, Barry, Bower, Brown, Christensen, Cooper, Garcia Armado, Gassner, Harris, Holmes, Kamalipour, Khan, Orford, Potoglou, Potts, Santos, Sartorio, Webb and

Yu specialises in theoretical and applied research that actively engages with external audiences in the public, private and third sectors, covering a wide range of topics. These include housing and land markets; built environment and infrastructure externalities; active travel and transport; spatial variations in social and health inequalities; social capital and service provision; public participation, engagement and social justice in spatial planning processes; urban design responses to social and natural problems; and urbanisation and urban poverty reduction in developing countries.

Research by members of the Group, which has been funded by organisations such as the ESRC, NERC, Global Challenges Research Fund (GCRF), Leverhulme Trust and the Welsh and Scottish governments, has re-framed UN debates on sustainable housing, the urban informal economy and refugee integration; improved outdoor education for children and young people in the UK; identified patterns of social vulnerability to climate change and flooding in Scotland and Wales; and led to the development of frameworks and models for measuring waterways' public benefits, land use, car and public transport, pedestrian and cycle behaviour.

1.3 Research Leadership

Within the School, strategic leadership for research is principally provided by the *Head of School* and the *Director of Research and Innovation*, supported by the *Director of Impact and Engagement* and the *Director of Postgraduate Research*. The Director of Impact and Engagement position was established by the School since REF2014 to strengthen and manage the development of pathways to research impact, with considerable growth of activities and achievements in this area, as detailed below.

Visioning, strategy setting and reflection on the research environment and culture within the School is undertaken via the *Research and Innovation Committee*, which encompasses all the roles mentioned above as well as representatives for the School's *Research Associate/Assistant and Postgraduate Research* communities and the School's *Research Group Leads*, who play a key role as a conduit connecting the Research and Innovation Committee with the wider research community across the School. As a reflection of this, the workload points allocated to Research Group Leads has increased three-fold since REF2014, which demonstrates the paramount significance given by the School to the establishment of an effective research environment and a highly active and inclusive research culture (see sections 2 and 4).

The School's *REF Committee*, which consists of the Head of School, the Director of Research and Innovation and five leading researchers from a cross-section of fields across the School, has led the evaluation of the quality of research (and its impact) undertaken within the School, aligned to clear guidance and expectations provided by the University. It also provides a broader forum for considering the current and future focus of research in relevant fields and has helped foster an open and transparent approach to the preparation of the School's REF submission.

1.4 Building on the REF2014 Research Strategy and Objectives

The School's research strategy fosters and promotes the sustainable recruitment, development and retention of staff who are, or will be, capable of achieving international excellence and research leadership. Underpinned by a sustained stream of research income (see section 3), this objective has focused investment on a balance of early career researchers and more senior staff to support priority research areas.

The aims outlined in our REF2014 submission have been achieved and, in some cases, exceeded. This is especially the case for the School's key objective of broadening and deepening collaborative and interdisciplinary research through the work of its Research Centres and Institutes, which have sought to address grand challenges and the Sustainable Development Goals by bringing together researchers from across the University around an interdisciplinary and impactful research agenda. In addition to strengthening the interface between human geography and spatial planning/urban design and sustaining staff engagement in interdisciplinary University research institutes (such as *PLACE*, the *Water Research Institute*, and the *Energy Systems Research Institute*), since 2014 the School has also established the *Cities Research Centre (CRC)*, which builds on the interdisciplinary expertise of the urban research community within the School (e.g., Fuller, Golubchikov, Huggins, Madden) and in other departments (such as the Welsh

School of Architecture and Cardiff Business School) to promote high-level engagement, research, teaching and post-graduate training on the changing patterns of urban life.

The School is also the home of the *China-UK Research Centre for Eco-Cities and Sustainable Development*, which pursues an innovative research agenda on the development, management and sustainability of cities. Led by Li and Flynn, the Centre provides facilities and opportunities for collaboration, particularly within the fields of climate change and, in the context of Chinese urbanisation, green and low carbon development, material re-use and recycling and ecological modernisation. The international agenda of the School's research is also pursued through the *Informality Research Observatory*, which brings together researchers in the SPACE and Economic and Political Geographies Research Groups with global partnerships (spanning over 20 countries), supported by major funding awards from the ESRC, GCRF and the British Academy and a university-wide memorandum of understanding with UN-HABITAT. The Observatory's research has spanned major urbanisation challenges, especially post-conflict cities, protracted displacement and urban informal economies, and it has informed several UN publications on those subjects.

Building upon the strengths of the Environment Research Group, in 2014 the School established the *Research Centre for Sustainable Urban and Regional Food (SURF)*, which builds on the interdisciplinary expertise of its long-established food research community (Marsden, Milbourne, Morgan and Sonnino) to carry out world-class research, teaching and post-graduate training on the emerging role of cities and regions in the geography of food. Also stemming from the Environment Research Group, the *Centre for Research on Environment, Society and Space (CRESS)* (led by Milbourne) brings together environmental and social research themes, making connections between natural, social, cultural, economic and political processes within rural spaces.

Other developments during the current REF cycle include the establishment of two research clusters on animal and energy geographies. Founded and led by researchers from the Social and Cultural Geography Research Group and the Environment Research Group, the *Animal Geography Research Cluster* addresses the geographies of human-nonhuman animal practices and the engagement of animal welfare science and technology in challenging the role of farmed animals in current agricultural practices and policies (Bear, Enticott, Miele and Prior). The research expertise of the SPACE Research Group (Aelbrecht and Kamalipour) has led to a collaboration with the Welsh School of Architecture to co-found the *Public Space Observatory*, which promotes knowledge-exchange between academia, practice and policy on the provision, design and management of public spaces. Led by Golubchikov, the *Energy Research Cluster* brings together scholars from across the School who are concerned with policy and societal perspectives on energy, climate change and low-carbon transitions. This Cluster also serves as a nodal point for connecting the School's research with the cross-departmental *Energy Systems Research Institute*.

Overall, the research strategy deployed since REF2014 has allowed the School to develop new key areas of activity (see Section 4) and establish new relationships with other scholars (nationally and internationally) and, importantly, with the users and beneficiaries of its research base. In particular, the focus on developing research groups and centres has enabled the School to effectively manage and support its rapid growth (as indicated in section 1). This has allowed research to be nurtured and to flourish in innovative ways, with other benefits in terms of research income and an enhanced research environment for both senior and early career researchers, including PhD students (see following sections). As indicated in section 3, particularly relevant for future plans is the School's proactive role in the University's ambitious initiative to develop a new *Social Science Research Park (SPARK)* that will enable researchers, practitioners and policymakers to be co-located, with a view to co-designing research projects that address the grand challenges of the 21st Century.

1.5 Future Objectives

The School's strategic objectives for the next five years are:

- To strengthen its position as an internationally recognised centre of excellence for research and impact at the nexus of human geography and spatial planning (including urban design).
- To enhance its profile as a location for agenda-setting research and scholarly debates on the sustainability and spatial management of cities, regions and rural areas through its core specialisms of economic development, environmental planning, international development, social and spatial inequalities, spatial analysis, urban design, and food and cultural geographies (see section 4).
- To strengthen the impact of research through the development of enhanced support for staff to work collaboratively with key global and local partners through the breadth of the School's research activities.
- To ensure that research guides the School's teaching and enriches the student learning experience. In particular, the School's degree programmes will continue to be closely integrated with its research and will seek to apply relevant theoretical discourse to real world contexts, helping students to develop the critical and practical skills required to effectively improve and transform the places around them.

1.6 Interdisciplinarity

The School has secured significant growth in large interdisciplinary and collaborative research awards since the previous REF period (see section 3). This has been facilitated by its close engagement with two major research institutes: Cardiff University's *Sustainable Places Research Institute* (PLACE) and *the Wales Institute of Social and Economic Research and Data* (WISERD). Led by Marsden, PLACE brings together experts in built environment, energy systems, food, rural development, ecosystems, green infrastructure, health and policymaking to provide critical and interdisciplinary approaches to the development of sustainable places. During the REF cycle, the Institute has facilitated the development of interdisciplinary projects and collaborations for members of the School on sustainable rural-urban linkages; health, infrastructure and wellbeing; food security and land-use; risk, place, identity and sustainability; and cities and sustainable places.

WISERD, established in 2008 with funding from the ESRC and Welsh Government, has provided staff from the School (e.g., Orford) with opportunities to lead interdisciplinary studies projects that have collated and analysed existing socio-economic data, developed new qualitative and quantitative methodological tools and provided new data sets at national and local levels. In 2019 WISERD received further funding of £7.74m to operate as an all-Wales Higher Education Institution collaboration, which is allowing the School's research to become increasingly embedded across the University.

1.7 Research Impact

The range of positive developments relating to research impact has been facilitated by the implementation of a strategy that has fully embedded impact into the research culture and routine of the School. Such a strategy has been designed and delivered around two key objectives: (a) to build, enhance and sustain researchers' individual and collective capacity to generate and maximise the impacts of their work; and (b) to create, strengthen and continue to broaden collaborative relations between academics (particularly early career staff) and existing or potential beneficiaries of their research.

Individual research capacity has been created through a regular allocation of workload points to all members of staff who have worked to develop an impact case study from a minimum of 35 points (1 point equating to 1 hour) for emerging cases at the start of the REF cycle to a maximum of 140 points for cases selected for the School's REF submission in the final year. In addition to providing an incentive for staff to develop impactful research, since 2014 the School has organised a range of activities designed to enhance the capabilities of individual researchers to engage with the impact agenda at a high level. These have included, for example, the organisation of Impact

Away Days to present and discuss specific impact cases, as well as workshops on “writing pathways to impact” for research bids.

A key mechanism deployed to build collective impact capacity has been the establishment of four *Research Impact Groups*, open to all members of staff, which provide a focal point for the core themes that constitute the backbone of the School’s research and impact identity and reputation: inclusive cities; strategic environmental planning; regional and urban development; and food and farming strategies. Over recent years, the Impact Groups have promoted knowledge-exchange, cross-fertilisation and collaborative relationships between junior and senior members of staff, providing practical guidance and financial support for their efforts to develop and sustain strong relationships with the users of their research.

The objective of fostering collaborations between researchers and stakeholders has been achieved through a mix of strategies that have promoted and supported the co-production of knowledge (e.g., with UN-HABITAT, UNCE, UN-FAO and the OECD), the establishment of long-term partnerships (e.g., through the securing of six UKRI CASE studentships since 2014 and regular outreach activities), the widespread dissemination of research findings and meetings between stakeholders and researchers.

The implementation of this impact strategy has helped the School to generate a range of both “conceptual” impacts, helping to reframe or enhance an understanding of policy issues and societal problems, and “instrumental” impacts, directly influencing policy and legislation in different fields. Examples of conceptual impacts have been provided by the research of staff at all different stages of academic career, and include: the development and adoption of new concepts and metrics for assessing regional competitiveness and resilience in the UK (Bristow and Huggins, Professors); enhanced public and policy attention for the environmental effects of major sport events and festivals (Collins, Lecturer/Senior Lecturer); the development of a software package (“sDNA”) used in Norway and across the UK to design multi-million urban planning projects (Cooper, Research Fellow); and the identification of “the urban” as a new research and intervention context for UN and EU organisations addressing the Sustainable Development Goal of “Zero Hunger” (Sonnino, Professor). Instrumental impacts associated with the School’s research include the development of more sustainable urban development and planning policies in post-socialist countries (Golubchikov, Senior Lecturer/Reader); the reframing of the EU regional development policy from a conventional social welfare policy into a spatially-targeted policy for innovation, growth and development (Morgan, Professor); the development -- in terms of planning and financial investment -- of rail policy in Wales (Barry, Professor of Practice); and the introduction by the Welsh Government of a world-leading legislation on homelessness that was replicated in England and is currently receiving significant policy attention in Australia, Canada and Scotland (Mackie, Senior Lecturer/Reader).

1.8 Open Research

The School’s open research strategy aims to ensure that all staff have ORCID IDs and that the full text of all journal articles is deposited into *Cardiff University’s Open Access* digital repository (ORCA) within three months of acceptance. The School’s open research culture has particularly benefitted from the University becoming a signatory to the San Francisco Declaration on Research Assessment, which promotes the assessment and evaluation of scholarly research beyond simplistic journal impact factors and rankings. These values have helped shape the management of outputs for the REF2021 exercise by ensuring a transparent process for assessing the quality of research through peer review that is not bound by existing measures of outlet significance. Beyond REF considerations, the School has developed an open research environment by making as many research outputs as possible freely accessible through the use of alternative publication outlets, alongside traditional journals. The School has also pushed towards the encouragement of the reproducibility of research through the increased engagement with data archives, with numerous research projects and publications utilising sources such as the UKRI’s UK Data Archive.

1.9 Research Ethics and Integrity

The School’s *Research Ethics Committee* (SREC) follows Cardiff University’s policy on research ethics, including compliance with the Concordat to Support Research Integrity, and all staff are

required to complete the online university research integrity training. The School's *Research Ethics Chair* provides guidance to staff and students who have research ethics questions on an individual basis, including issues related to data management and safeguarding procedures.

The SREC, which meets three times per year, delegates authority to the Chair to authorise proposals presenting minimal risks but takes part in ongoing discussions on applications that require full review in between meetings. This has enabled close dialogue to positively support the development of more innovative or 'risky' initiatives within the School, particularly around critically and reflexively engaging with vulnerable participants.

The School's research ethics approval form builds in consideration of issues around equality, diversity and inclusion (such as through questions about research with vulnerable participants) and considers risks to, and support needs of, researchers. Full plans, including project information sheets and consent forms, are reviewed by the SREC, which provides supportive, constructive and dialogical feedback to researchers. When research projects change as they unfold, updates are assessed by the SREC to ensure that rigorous research ethics and integrity are maintained.

2. People

2.1 Staffing Strategy

The School's research strategy is committed to an inclusive approach that fosters and promotes the sustainable recruitment, development and retention of staff who are, or will be, capable of achieving international excellence and research leadership. As part of this approach, all of the School's academic staff are employed full-time on open-ended teaching and research contracts and as far as possible are allocated similar teaching and administrative workloads, which are monitored according to a research-led workload model that, for example, allows new lecturers to have a reduced teaching load to develop their own research agenda for the duration of their probationary period. Allowances are also made for staff with particularly heavy administrative responsibilities and large research grants (see section 3), and provides a supportive context for researchers in the School at all stages of their career.

Underpinned by a diversified stream of research income (see section 3), the School's research strategy has sought to significantly invest in both early career and more senior appointments to support priority research areas and develop new ones. Alongside this investment, during the current REF cycle the School has employed a further 13 Research Associates, five Research Assistants and eight other research staff, including three Marie Skłodowska-Curie-funded researchers.

Support for staff during the REF period is evidenced by the promotion of 25 members of staff, consisting of five to Chair, eight to Reader and 12 to Senior Lecturer. Recruitment at more senior levels has been used strategically to sustain established research strengths or to develop new ones, as was the case with Bridge's appointment in urban geography. The School's commitment to research impact has led to the appointment of two Professors of Practice, who are dedicated to extending the innovation and engagement activities of the School (Barry is a highly visible commentator in the field of transport connectivity and Madden is an established policy shaper in relation to the development of future and smart cities).

2.2 Staff Development

Our staff development principles are embedded in an induction programme for new entrants that sets out the expectations, structures and support mechanisms associated with research and impact in the School and University. As indicated in section 1, Research and Impact Groups provide the formal 'home' for individual researchers to access support for research grant applications, establish collaborative relationships with academics and practitioners, organise research seminars and impact/engagement events and develop publications. At the institutional level, new staff benefit from a two-and-a-half-day academic induction programme that complements Cardiff University's online induction resource for new staff 'Your first 90 days'. The University recently appointed a *Dean for Research Environment and Culture*, with a portfolio focused on research-only and ECR staff. Along with the protection of significant research time and the differentiated expectations relative to other staff, early career recruits are allocated a mentor to provide support and advice during their first three years in post. As a result of the nurturing and

inclusive research culture, combined with research excellence targets across career stages, early career researchers feature very strongly in the output submission of the School.

All staff are appraised annually through a *Performance Development Review* (PDR), which reviews annual progress and outlines future objectives and career development plans. Any training needs identified through this process are met through the University's *Career Development Skills* programme, *Research Development* courses and *Leadership and Management* training. Where appropriate, full or part funding for external training is made available to staff. The *Cardiff Academic* (complemented by College-specific performance expectations) and the *Cardiff Professional* initiatives provide clarity concerning expectations of staff in academic and professional service roles respectively and support career development planning.

The School's research staff policies subscribe to the *Concordat to Support the Career Development of Researchers*, which is an agreement between the funders and employers of researchers in the UK regarding the ways in which the careers of researchers should be supported, providing 'a single, unambiguous statement of the expectations and responsibilities of researchers, their managers, employers and funders'. Cardiff University is fully committed to the Concordat and has in place a clear implementation plan, which has helped the School provide support for the development of its staff at all stages of their career. The University has been recognised by the European Commission for its efforts in improving the working conditions and career development opportunities for researchers through the *HR Excellence in Research* accreditation (which was renewed in 2012 in recognition of the University's progress in implementing the Concordat).

The School has acted to ensure an appropriate gender balance in relation to senior research positions, with two of the three research-related directorships within the School being filled by female members of staff (Miele as Director of Postgraduate Research and Sonnino as Director of Impact and Engagement). Furthermore, the School has followed all the principles of Cardiff University's *REF2021 Code of Practice*, which focuses on inclusion, transparency and strong engagement with staff. The School's senior leaders all undertook REF-specific equality, diversity and inclusion training aligned to their REF roles.

Study leave is an integral component of the School's staffing strategy. Alongside the University-level Research Study Leave (see institutional statement, REF5a Section 2.1.5), the School also operates its own internal initiative with, on average, two members of staff being granted study leave of one semester each year. All staff with at least four years of continuous service who have not been awarded a period of research leave in the previous four years by the University are able to apply. The purpose of the study leave is to allow staff additional time for research and impact activities that contribute to their personal and professional development and the research performance of the School.

The School also operates an ad-hoc seed corn research funding initiative aimed at increasing research capacity (most recently, this was connected to pump priming new research connected to the establishment of the Cities Research Centre and a flexible policy of buy-outs and buy-ins for staff with large grants, which allows them to manage major research projects through reductions in teaching and/or administrative duties). The School also encourages staff buy-outs through secondments to academic institutions outside the UK and to government organisations (see section 4). Most recently (2019-20), Cardiff University introduced the *Disglair* research leave initiative, whereby research leave was facilitated by the recruitment of early career researchers considered to have outstanding potential, with transition to a teaching and research role supported by an innovative cross-University development programme. The School was successful with all three applications it submitted for research leave (Hobson, Sartorio and Sonnino).

2.3 Equality, Diversity and Inclusion (EDI)

The School recognises all of its staff equally and continuously work to maintain and develop an environment of equality and diversity in its principles and practices. This has fostered a growing diversity of staff and career opportunities. In 2017 the School established a committee dedicated to working towards recognition by the Athena SWAN Charter through an application for a Bronze award in April 2021 (at the institutional level, the University was re-awarded a Bronze in May 2019). During the last three years, the proportion of female to male academic and research staff

in the School has increased from 29% female/71% male to 31% female/69% male. This is approximately equal to the Russell Group average. The gender split by career level is as follows: Lecturer - 47% female/53% male; Senior Lecturer - 29% female/ 71% male; Reader - 13% female/ 87% male; Professor - 29% female/ 71% male. Currently, the School's *Athena SWAN Committee* is establishing an action plan to provide support for promotion and career development for female members of staff.

The School's strong commitment to the principles of EDI is evidenced by, for example, female members of staff being represented on all School committees and by the significant diversity of profiles across Research Group Leads, who include a female at the head of the Environment Research Group and a mix of senior and junior members of staff in the position of Leads of other groups. The School follows Cardiff University policy on the recruitment of staff and adheres to Equal Opportunity guidelines in all stages of recruitment and selection, including *Unconscious Bias* training. As part of their induction, all new staff are required to undertake an online *Equality and Diversity* training module.

Effective performance is viewed holistically and rewarded in a variety of ways, most notably through an annual *Outstanding Contribution Award* process for non-Professorial colleagues and a *Senior Salary Review*, which applies to Professors. In addition, staff are encouraged to progress their careers via the University's open and transparent promotions process. The procedures used by the School for promotion take into account any personal, familial or other non-academic circumstances that may have restricted or delayed the development of an applicant's professional career.

There are a range of University schemes to support career development for staff. These include the *Women in Universities Mentoring Schemes* for female academics working in academic and support roles at all levels in Higher Education; the *One Million Members* scheme designed to support young people to get into work; and the *Postgraduate Certificate in University Teaching and Learning Academic Practice* programme. Cardiff University employs a full-time careers adviser for research staff, and from 2019 the promotion scheme has been revised to incorporate a clear career path for staff on research-only pathways, enabling advancement to Senior Research Fellow, Principal Research Fellow and Professorial Research Fellow. The *Cardiff Research Programme* is designed specifically for staff employed on research-only contracts and provides workshops, online modules and one-to-one coaching in 65 topics (including grant writing, applying for fellowships and moving into research leadership).

Finally, it should be noted that the School's entire PhD process for research students (from application to examination) is compliant with the University's EDI policy.

2.4 Staff Wellbeing

Since 2014, the School has established a series of bespoke wellbeing initiatives as part of the Athena SWAN developments. These include mindfulness courses, lunchtime fitness activities, roof-gardening on the School's Glamorgan Building and 'salted water' wellbeing days. Coupled with these developments, an *HR Advisory Team* is in place to manage flexible working and career breaks, cover and support for maternity and adoption leave, discuss legal aspects of maternity/adoption leave entitlement cover and to highlight other applicable support or initiatives. There is a dedicated *Shared Parental Leave* policy, which sets out the statutory rights and responsibilities of employees who wish to take statutory Shared Parental Leave and statutory Shared Parental Pay. Before returning from parental leave, staff are encouraged to discuss with line managers any changes required to their work pattern. This can include flexible working, home working, job-sharing, staggered hours, condensed hours and shift working, and the School routinely considers cases for working pattern adjustments for all types/categories of staff.

At the University level, the *Staff Wellbeing Group* was convened in 2018 as part of a wellbeing strategy that also includes the provision of an *Employee Assistance Programme*, a *Wellbeing programme of events* and a *Staff Wellbeing Team* that organises bespoke events for teams and schools across the University. In 2015, the University achieved a *Gold Award in the Corporate Health Standard* (a national quality framework and award for employers to improve health and wellbeing in the workplace) and it is currently seeking revalidation.

2.5 Research Students

The School has actively grown its postgraduate research body since 2014 as part of its commitment to develop the next generation of high calibre researchers, and there are currently 46 registered PhD students. During the REF period, 43 students were awarded a PhD (compared with 35 for the REF2014 period), and the School has invested £225,393 of its research funds to create new studentships and co-fund ESRC DTC studentships. The training and supervision of research students is accorded a high priority, as evidenced by the allocation of workload points for first and second supervisors (respectively 50 and 25 hours per year per student).

The School is part of the *ESRC Wales Doctoral Training Programme* (established in 2016 and led by Cardiff University) for the Human Geography and Environmental Planning pathways and the *AHRC South, West and Wales Doctoral Training Programme* for the Cultural Geography pathway, and every year obtains around three or four general studentships and about the same number of collaborative studentships.

There is a wide range of training courses provided by the Doctoral Academy and the Doctoral Training Programme, which are complemented by training initiatives organised at the School level. These include, for example, an annual workshop with a professional copy editor for editing and formatting a thesis and a workshop on publishing ethics. Moreover, the School shares PhD training events with other schools in the College – for example, workshops on how to write a literature review and how to carry out a peer review for an academic journal and meetings with the editors of academic journals to discuss publishing policies.

2.6 PhD Research Environment

Every PhD student is supported by a supervisory team consisting of a main supervisor and a second supervisor, with a reviewer also appointed to carry out an annual review in the form of a “mini viva”. In recent years, there has been a sustained effort to standardise the supervision and improve the quality of the PhD student experience, particularly by monitoring the number and frequency of supervisory meetings. In 2018, the University introduced a new streamlined online monitoring system for PhD students and their supervisors, who are required to produce a monthly written report summarising the topics discussed during their meetings and the action to be carried out in advance of the following meeting. The PGR Director also organises an annual meeting with all supervisors to address specific issues such as ‘how to recognise signs of stress and depression’, ‘pastoral care’, ‘publishing with your PhD students’ and ‘how to involve PhD students in research activities’. The new system has helped students to submit their dissertations on time and, in some cases, to submit well ahead of their original submission dates.

A bespoke package of methods training is designed for all first year PhD students, depending on their research topic and their prior knowledge and experience. Training is provided in generic and subject-specific research skills as well as transferable skills, with students expected to accumulate a minimum of twenty full training days over their period of study. Research students organise their own weekly PhD seminar series, which involves presenting their research to their peers (and research staff) in an informal and supportive environment. These presentations are complemented by two PhD Away Days per year, which help students to share and discuss their research with a wide range of academics in the School.

Research students are all members of the *Doctoral Academy Courses* and benefit from the accompanying *Research Students' Skills Development Programme*, which was attended by 93 students from the School during the REF period. This programme aims to foster an intellectually stimulating environment where students feel encouraged to share research interests with their peers from other Schools and to become part of a wider interdisciplinary research community. The programme also offers students training in a range of skills that contribute to the efficient management of their research, their personal development and their future employability.

2.7 PhD Research Infrastructure

All PhD students are members of at least one Research Group in the School and are expected to present their research once a year in the Group’s seminar series. Moreover, PhD students are encouraged to take part in seminars and reading groups and to organise specific activities, such as research method workshops (e.g., research ethics for online interviews, digital research

methods, visual methods, sonic geographic methods, 'writing retreats' and 'shut up and write' sessions organised in collaboration with research associates in the School). In 2020 a series of workshops was introduced to encourage PhD students to discuss their research with a wider forum of staff beyond their supervisory team.

Research students occupy high quality shared office space, have access to high-level computer facilities and benefit from a generous photocopying allowance and an annual fieldwork and conference budget of £750. The School has made available a further fund of £2,000 per annum to help PhD students in their second and third year to present their research at international conferences. Students are also encouraged to become involved in seminar-style teaching, tutorials and live research projects in the School, with additional payments made for such contributions.

As a result of these developments, all PhD students in the School completing during the current REF period have gained employment in the first six months since defending their theses, with nearly half of them appointed as lecturers or research associates in the UK and other international universities.

3. Income, infrastructure and facilities

3.1 Income and Funding Strategies

In line with its research strategy, the School has continued to support high quality research addressing its priority themes. This includes the development of a peer-review system for research grant proposals prior to submission and regular feedback and advice from the School's *Research Office* and the University's *Research Innovation Services* to staff developing research grant applications. This system ensures the quality and efficacy of research proposals, which has resulted in the continued growth of research income. In 2020, the School was commended by the University for increasing its annual research income for 2019/2020 to £2.2m – more than 50% above the previous three-year average (and above the average annual research income for REF2014 period - £1.76m).

Within the School, researchers at all career stages are highly active in securing external research funding, with total research funding during the period equating to £7.15m. A number of early career researchers and research-only staff have been successful in achieving significant funding (e.g., Brigstocke's award of £202k from the AHRC and Healy's award of £869k from the Medical Research Council (MRC)). This is complemented by awards won by mid-career staff (e.g., £401k to Mackie for UK Collaborative Centre for Housing Evidence, funded by the ESRC; and £265k to Enticott from the Commission of the European Communities). Senior staff (e.g., Anderson, AHRC, £477k; Brown, ESRC, £411k and GCRF, £532k; Marsden, Commission of the European Communities, £449k; Sonnino, Commission of the European Communities, £369k) continue to achieve success in accessing funding from a range of cherished sources. For example, in 2020, Sonnino and Milbourne were awarded £582k by the Commission of the European Communities for the scientific coordination of a four-year €12m innovation project that aims to develop urban food policies in 11 European cities.

In summary, during the REF period the School has been awarded 36 ESRC grants, six AHRC grants, two EPSRC grants, three NERC grants, one GCRF grant and one MRC grant. Amongst others, these are accompanied by six British Academy grants, seven British Council grants, seven grants from the Commission of the European Communities and three grants from the Leverhulme Trust. In 2019, the School was successful (Healy – MRC award indicated above) with a prestigious *UK Research and Innovation Future Leaders* application. This is the first UKRI Fellowship awarded to Cardiff University and results from significant investment at both School and University levels to support the development of the application and ensure the availability of a high-quality research environment for the Fellow.

A cornerstone of the School's 'soft' research infrastructure is its *Research Guide Values* document. The role of the guide values is to provide staff with a broad framework to construct their research plans and productively manage their research time. The document is also used to help frame the research components of PDR meetings or one-to-one meetings with Research Group Leads, as well as to provide staff with guidance in relation to probation and promotion. The guide

values represent a means of ensuring transparency in terms of the contribution expected of individuals in order to meet four collective goals: to facilitate a research environment within which as many staff as possible are committed to, and capable of, preparing high-quality publications; to sustain and grow research income from prestigious funding bodies; to maintain and further develop a postgraduate research community populated by a growing number of students of the highest quality and commitment; and to maximise the impact of academic work on wider groups of societal stakeholders.

Researchers without research grants are allocated funding of £1,000 per annum to pump prime their research activity. To further support research activity, the *Cardiff Undergraduate Research Opportunities Programme* (CUROP) scheme offers students a paid opportunity to spend up to eight weeks working with staff on live research projects. The School successfully secured 34 CUROP grants during the REF period, which facilitated significant new research and impact, including a suite of three publications on environmental planning ([Collins](#)), the development of a novel dataset supporting three new grant applications in the area of urban design ([Aelbrecht](#)) and the publication of policy reports on the environmental impacts of major sport and cultural events ([Collins](#) and [Potoqlou](#)).

During the REF period, the School has also been able to access funds from three schemes administered by the College: (1) a *College Seedcorn Fund* for cross-school research bids - up to £5,000 per bid for funding multi- and interdisciplinary research initiatives designed to develop research bids or research impact; (2) a *College Fund to Support Research Applications* to increase the capacity of those with proven track records of success to prepare funding bids and facilitate more ambitious research bid collaborations. Schools can bid for funds of up to £5,000 to cover RA/post-doc support for up to four months to provide assistance in preparing and writing research bids; (3) an *Early Career Personal Research Fund* - a scheme guaranteeing all early career lecturers on a Teaching and Research contract a £3,000 annual personal research fund to support their fieldwork or the presentation of papers at conferences. As a result, these early career lecturers have published significant high-quality outputs, which are reflected in the outputs submitted for REF2021.

Other research support available in the School and administered by the College includes a *Research Networks Scheme* (introduced in 2014 to support the creation and development of interdisciplinary networks across schools) and an *International Research Initiative* (funded in 2016 and 2017 to enhance the School's international reputation and profile through the organisation of a range of international collaborations, events, conferences and colloquia).

Staff in the School are able to take advantage of Cardiff University's formal collaboration with GW4 partners (which include the universities of Bath, Bristol and Exeter) on research capacity-building and staff/research student development initiatives such as the GW4 Crucible, the 'shared research staff development' initiative (whereby members of research staff may attend staff development workshops in partner universities), as well as networking events and facilitated workshops for recipients of GW4 funds. The School is involved in GW4-related activities particularly through knowledge-exchange, and it regularly invites speakers from the other GW4 partners to participate in the School's Research Seminar Series, which is facilitated via the Research Groups. In 2020, GW4 partners were able to leverage their collaborative research relationships to develop a £5m proposal in response to a BBSRC-led call for applications to establish a new Doctoral Training Centre on Food Systems in the UK. This provided the basis for a new initiative concerning "Net Zero" that will develop an ambitious and interdisciplinary programme of research on food, land use, transport and energy across the four universities, which is co-led by the School.

3.2 Infrastructure and Facilities

The soft infrastructure supporting research in the School is provided by the *Research Office*, which consists of three professional services support staff dedicated to the administration and management of research. In addition to performing activities such as the management of funding applications and the notification of research calls, the Research Office – coupled with technical administrators across the School, College and University – provides significant assistance with the design of research web pages and research software and the organisation of research, impact and engagement events, in addition to offering a support team that ensures rapid problem-solving.

The School has been a focal point of Cardiff University's continued investment in its research infrastructure and facilities. The WISERD and PLACE research institutes have refurbished and customised research spaces and, as mentioned earlier, the School is actively involved in an ambitious University proposal to develop SPARK, a major capital investment (£56.5m) on Cardiff University's nine-acre Innovation Campus that will design, conduct and evaluate high quality trans-disciplinary research on societal grand challenges (including, among others, climate change, mental health and crime and security). This will provide a significant opportunity to engage in an innovation test-bed that is closely related to research themes across the School.

The School provides high quality office space and research support facilities to staff, including state of the art computer facilities and cartographic support, a dedicated subject librarian and a range of specialist information resources such as *Digimap*, *Planning Portal*, *British Standards Online*, *Construction Information Service* and *European Spatial Planning Database*. In addition, the University has invested heavily in advanced computing facilities, providing valuable resources for staff working on spatial analysis and complexity. Over the REF2021 period, expenditure on IT and estates totalled £454,964.

3.3 Research Impact Infrastructure

Specific support for impact is a cornerstone of our research strategy. Alongside its *Research Seminar Series*, the School has also invested in the organisation of a high-profile *Impact and Engagement Event Series*, which has attracted a range of key stakeholders to the School (both as speakers and participants). This includes a programme of public lectures that are typically recorded and made available on the School's website and through which staff, students, policymakers, practitioners and stakeholders can come together and debate relevant policy and societal challenges.

In addition, a policy is being developed to support researchers when potentially unforeseen opportunities to generate research impact arise. This includes measures to free up their time from other commitments to undertake secondments with key organisations as well as the establishment of a *Rapid Reaction Impact Fund* available to all researchers (including PhD students) to ensure they can promptly access the resources they need to attend relevant events or invite key stakeholders to the School. The activities are managed by the School's *Impact and Engagement Advisory Group*, which evaluates and selects proposals by staff requesting funding from the Impact and Engagement budget. During the REF cycle, this funding led to new and fruitful collaborations with external partners from academia, policy and practices in research areas such as smart city development ([Fuller](#), [Huggins](#), [Madden](#)), urban food systems (Sonnino, Milbourne, Morgan), public space design and social cohesion ([Aelbrecht](#)) and city-region planning ([Barry](#), [Morgan](#)).

With regard to wider capacity for research impact activity, the School's impact infrastructure rests upon the following pillars: (a) the establishment of four impact groups, designed to create and strengthen synergies between researchers working in areas (i.e., food and farming, spatially and socially inclusive cities, environmental planning and urban and regional development) that form the basis of the School's impact identity; (b) the allocation of workload points for impact and engagement activities to all staff to ensure that these tasks are viewed and valued in a way commensurate with the School's impact strategy; (c) an additional and substantial allocation of workload points for staff involved with the development of REF impact case studies, which, in the light of the results achieved by the School at every annual internal evaluation of REF outputs, was identified by Cardiff University as an example of best practice and is now embedded into its new workload model; (d) the inclusion of impact activities within the School's Research Guide Values; and (e) the use of engagement and impact criteria in PDRs and promotion criteria (with the School securing a promotion from Senior Lectureship to Readership and a promotion from Lecturer to Senior Lecturer through the impact route during this REF period). As indicated in section 1, the strategies employed to catalyse research impact and the allocation of significant resources have embedded engagement and impact activities and targets into the research culture and environment of the School.

The dissemination of research findings to stimulate impact has been promoted and sustained through initiatives such as the allocation of time for private consultancy work (25 days/year

available for all staff), the use of online tools (including social media) to make research findings available and accessible to the general public, the involvement of members of staff in high-level advisory panels (e.g., Bristow's membership of the UK2070 Commission, which is looking into regional disparities across the UK), networks (e.g., Bear's Directorship of the Woven Network – the UK's network for edible insects), expert groups (e.g., Sonnino's involvement in the identification of food-related research and innovation priorities for the European Commission's Horizon Europe programme as vice-Chair of the FOOD2030 Expert Group) and policy working groups (e.g., Collins' engagement with the Swedish Foundation for Strategic Environmental Research addressing sport and outdoor recreation and environmental impacts).

The research impact infrastructure, which is regularly reviewed and adjusted by the Director of Impact and Engagement and the School Board, has proven to be very effective for researchers at all stages of their career – as evidenced by an impact income of £154,820 secured through a total of 19 awards made by the ESRC (between 2014 and 2019) to both senior and junior members of staff (including two Research Associates on fixed-term contracts).

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

4.1 Research Collaborations

The School and University proactively encourage and support interdisciplinary and collaborative research. Since 2014, the School secured 21 awards for research students and staff from the University's suite of initiatives to incentivise interdisciplinary research. Knowledge-exchange and co-creation have been fostered through the School's formal partnerships with key professional bodies in the fields of human geography and spatial planning – the Royal Geographical Society, the Royal Town Planning Institute and the Royal Institute of Chartered Surveyors – and, as indicated in section 2, through its active involvement in the creation of collaborative and interdisciplinary research centres (including WISERD, PLACE and the Cities Research Centre) that have a strong impact remit. As outlined in section 3, the School's close engagement with the establishment of Cardiff University's SPARK will further boost research performance and impact in the coming years.

The School hosted 91 Visiting International Scholars from prestigious universities from 18 countries across the globe during the REF period, integrating them into its research culture through a recognised *International Scholars Programme*. Researchers within the School have also been invited to make plenary or keynote lectures at major conferences around the world, including the following countries: Saudi Arabia; the Netherlands; the United States; Germany; Austria; Switzerland; China; Italy; Brazil; Mexico; France; Turkey; Croatia; Finland; Sweden; Denmark; Australia; Russia; Belgium; Spain; Ireland; Bulgaria and Romania.

The School has an extensive global network of co-investigators and research partners in Europe, the Americas, Asia, Africa and the Middle East, covering more than 40 countries. Mobility funds made available by the University have been extensively utilised by members of staff to visit partner universities (KU Leuven, Belgium; Xiamen, China; UNICAMP, Brazil; and Bremen, Germany) and develop collaborative research projects in fields such as urban and regional planning and urban sustainability. Researchers within the School have also held visiting or honorary positions at a number of universities, with the contributions clustering within the fields of food, agriculture and sustainability; spatial planning and transport; and urban and regional geography, as detailed below.

- *Food, Agriculture and Sustainability*: University of Helsinki, Finland (2014/15) – Visiting Scholar (Herman); University of Natural Resources and Life Sciences, Austria (2019) – Visiting Professor (Sonnino); Cordoba University, Spain (2015) – Visiting Professor (Sonnino); University of Gastronomic Sciences, Bra, Italy (2013-2107), Visiting Scholar (Miele); INRA, Clermont Ferrand, France (2014), Visiting Professor (Miele); University of Gastronomic Sciences, Italy (2013/14) – Visiting Professor (Sonnino); Arizona State University (2016/17) – Visiting Scholar (Martinat).
- *Spatial Planning and Transport*: University of Messina, Italy (2016) – Visiting Professor (Potoglou); University of Salerno, Italy (2016) – Visiting Researcher (Potoglou); University of Sydney Business School (2016) - Honorary Lecturer (Potoglou); RMIT, Australia (2018)

- Visiting Scholar (Aelbrecht); University College Dublin (2019) – Visiting Assistant Professor (Shahab); University of Maryland (2016) – Visiting Research Scholar (Shahab).
- *Urban and Regional Geography*: Deusto University, Spain – Visiting Scholar (Morgan); Heriot Watt University, UK (2018) – Honorary Research Fellow (MacKie); Leibniz Institute for Regional Geography, Leipzig, Germany (2014-16) – Leibniz Fellow (Golubchikov), National Research University Higher School of Economics (Moscow), Russia (since 2014) – Visiting Associate Professor (Golubchikov).

4.2 Relationships with Key Research Users, Beneficiaries or Audiences

The School promotes user-engagement and knowledge-exchange mechanisms for individuals as standard practice, including support for secondments to policy-making institutions and undertaking advisory roles and contracts. This enabled staff to work as expert advisors for a wide range of governmental and non-governmental organisations, including the Welsh Government (Webb on Planning Policy Wales, Cowell on Re-energising Wales and Post-Brexit Environmental Governance, Morgan on Affordable Housing Supply), the European Commission (Morgan on the Future of Research and Innovation Policy in the EU and Sonnino on Food Innovations in Cities) and UN agencies (Brown and Golubchikov with HABITAT III and Sonnino with FAO).

The School has excellent working relationships with public and private governance bodies both in the UK and overseas. For example, Golubchikov is a long-term advisor to UNECE and UN-HABITAT and was commissioned to produce a variety of flagship policy publications for them, including most recently on People-Smart Sustainable Cities (2020). Morgan was commissioned by the Joint Research Council of the European Commission to produce a report assessing the EU's Research and Innovation Strategies for Smart Specialisation (RIS3) Programme (2018). Morgan was further commissioned by the Directorate for Regional Policy of the European Commission to produce a report on the Future of Research and Innovation Policy in the EU (2018) and by the OECD to produce a report on Experimental Governance and Territorial Development (2018).

Within the UK, Huggins is strategic advisor to Local Enterprise Partnerships and Local Authorities across the UK and his research has been utilised by more than 60 Local Authorities and related local governance partnerships during the REF period. The School also continues to develop and maintain close relationships with all relevant governance bodies in Wales. Cowell, for example, was invited to give oral and written evidence to the National Assembly for Wales on three inquiries since 2014. During the REF period, Huggins, Mackie, Pitt and Sonnino also provided evidence to other National Assembly for Wales inquiries, and Potoglou is a member of the Welsh Government's Independent Review Panel of Local Authority Air Quality Measures in Wales.

Finally, in its aim to enhance links between research and practice, the School actively recruits notable individuals from academia, policy and practice to honorary positions. Examples of some of the appointments during the REF period are Professor Yap Kioe Sheng (Former Chief of the Poverty Reduction Section of the UN Economic and Social Commission for Asia and the Pacific), Dr Duncan Green (Head of Research at Oxfam), Professor Paul Taylor (Former Chief of the Office of the Executive Director for UN-Habitat), Professor Tridib Banerjee (Sol Price School of Public Policy, University of Southern California), Dr Kai Wang (Vice President of China Academy of Urban Planning and Design), Paul Matthews (Chief Executive of Monmouthshire County Council), Paul Orders (Chief Executive of Cardiff County Council), Professor Geoff Tansey (Food Ethics Council) and Professor Tim Lang (City, University of London).

4.3 Contribution to Disciplinary Sustainability

Researchers across the School have been extremely active in relation to journal editorial work, which provides an important mechanism for contributing to the field. Representing the major strengths within the School's Research Groups, this editorship is broadly clustered in the areas of food, agriculture and sustainability; spatial planning and transport; and urban and regional geography.

- *Food, Agriculture and Sustainability* – both senior and more junior researchers in the School have editorial input to a range of leading and relevant outputs, including: *Agriculture and Human Values* (Miele, Editorial Board Member); *Animal Welfare* (Miele, Section

Editor); *Frontiers: Animal Science* (Miele, Editorial Board Member); *Frontiers in Energy Research* (Martinat, Review Editor); *Frontiers in Sustainable Food Systems* (Sonnino, Editorial Board Member); *International Journal of the Sociology of Agriculture and Food* (Miele, Editor in Chief); *Journal of Rural Studies* (Milbourne, Editorial Board Member); *Society and Animals* (Bear and Miele, Associate Editors); *Sociologia Ruralis* (Sonnino, Editorial Board Member); and *Sustainability* (Bear, Martinat, Potoglou and Santos, Editorial Board Members; Aelbrecht, Topic Editor).

- *Spatial Planning and Transport* – given the School's research heritage and historical roots and its aim of operating at the nexus of geography and planning, there is considerable research leadership in the fields of spatial planning and transport, with editorships including a number of prestigious outlets. Examples include: *Journal of Environmental Policy and Planning* (Flynn, Editorial Board Member); *Planning Theory and Practice* (Cowell, Editorial Board Member); *Research in Transportation Economics* (Santos, Editor-in-Chief); *Transport Policy* (Santos, Editorial Board Member); *Transportation Research Part A: Policy and Practice* (Santos, Editorial Board Member); and *Transportation Research Part D: Transport and Environment* (Potoglou, Associate Editor). The School also remains the home of the journal *International Planning Studies* (Sartorio, Managing Editor).
- *Urban and Regional Geography* - this field provides fertile ground for meshing issues stemming from both human geography and planning, which has placed the School at the forefront of the research agenda related to governance, regeneration and development, with a number of scholars holding significant editorial positions in these areas. Examples from the current REF period include: *Commonwealth Journal of Local Governance* (Brown, Editor); *Environment and Planning C* (Bristow, Editor); *Geoforum* (DeVerteuil, Associate Editor); *Geography Compass* (Huggins, Editorial Board Member); *GeoScape* (Golubchikov, Editorial Board Member); *International Journal on Homelessness* (Mackie, Founding Editorial Board Member); *International Journal of Housing Policy* (Mackie, Review Editor); *Regional Studies* (Bristow, Editor); *Regional Studies, Regional Science* (Webb, Associate Editor); *Social and Cultural Geography* (DeVerteuil, Editorial Board Member); *Urban Geography* (DeVerteuil, Editorial Board Member); and *Urban Studies* (Orford, Editor).

In addition to this editorial work, several special issues of journals have been guest edited by staff during the REF period, with particularly notable contributions by early career researchers: *GeoHumanities* (2016), on "Spaces of Attunement" (Brigstocke); *Local Environment* (2018), on "Food Justice" (Herman); *Renewable Agriculture and Food Systems* (2018), on "Food Systems" (Pitt); and *Third World Thematics* (2017), on "Development, Magic and Spiritual Ontologies" (Smith).

Further examples of contributions from senior staff editing journal special issues include: *Energy and Buildings* (2018), on "Energy Poverty Varieties" (Golubchikov); *Environment and Planning C: Politics and Space* (2017), on "Subnational Government and Pathways to Sustainable Energy" (Cowell); *International Journal of Housing Policy* (2016), on "Young People and Housing" (Mackie); *Research in Transportation Economics* (2014), on "Regional Development and Transport Infrastructure in Mexico" (Santos); *Sustainability* (2018), on "Agribusiness and Sustainability" (Loris); *Sustainability* (2018), on "Travel Behaviour and Sustainable Transport of the Future" (Potoglou); and *Town Planning Review* (2014), on "Planning for Infrastructure: Transitional Pathways for Lagging Regions" (Webb).

The School's researchers have also been active in the organisation of international conferences and sessions as well as other academic events. In addition to hosting the prestigious Annual International Royal Geographical Society Conference in 2018 (chaired by Milbourne), the School played key organisational roles at: the Regional Innovation Policies Conference 2016, hosted by the School and chaired by Morgan; the Fair Trade International Symposium 2018 Scientific Committee and Track Chair (Herman); the UK-Ireland Planning Research Conference 2016 (Harris and Webb); the AESOP Strand Chair (Sartorio); the Urban Geography Research Group RGS-IBG Annual Conference 2014 and 2016 Conference Programme Chair (DeVerteuil); the World Conference on Transport Research, Co-Chair of the Special Interest Group (Santos);

Overseas Development Institute: International Conference on Microfinance (2015), Co-Chair (Mackie); and European Association for Sport Management 2020 Session Co-Chair (Collins).

The vibrant research culture within the School is also evidenced by the range of research symposia and seminars facilitated by staff, especially early career researchers, who organised a 'Spaces of Attunement' Symposium in March 2015 (co-convened by Brigstocke), a 'Sound and Space' Symposium in June 2018 (convened by Prior) and an event on 'Spaces and Politics of Aesthetics' in June 2019 (convened by Brigstocke and Gassner).

A series of informal research seminars that cut across individual research groups have also been organised on a wide range of topics. Examples includes Conversations in the Spring, March, April and May 2019 (Bridge and Gassner); Spaces and Politics of Motherhood, June 2018 (Boyer); Practising Empowerment in Post-Apartheid South Africa: Wine, Ethics and Development, June 2018 (Herman); Sharing Economies in Times of Crisis: Practices, Politics and Possibilities, June 2018 (Ince); Public Space Design and Social Cohesion, December 2017, September 2018, May 2019 (Aelbrecht); Ruined Skylines: Aesthetics, Politics and London's Towering Cityscape, October 2019 (Gassner); and the Animal Geography Seminar Series (Miele), March 2020. Alongside these seminars, staff members initiated a number of reading groups on 'Capitalism, Social Justice and Space' (Fuller), 'Anarchist Theory' (Gale and Ince) and 'Deleuze and Feminist Theory' (Boyer).

4.4 Recognition by the Research Community

Researchers from the School continue to be prominent and leading contributors to the disciplines and professional fields associated with the governance, development and sustainability of cities, regions and rural spaces. This is evidenced by journal awards to senior members of the School, such as: *Geographical Review* Best Paper for 2017 (Ioris); Best Paper Award in *Spatial Economic Analysis*, 2017 (Bristow and Healy); *Journal of Geography* Award for the Best Secondary Teaching Article, 2018 (Mackie); Bennett Prize for Best Paper in *Environment and Planning C*, 2014 (Cowell); and 2017 ENDS Annual Impact Awards Insight of the Year (Cowell).

The inclusive approach to research support in the School has also helped a number of early career researchers gain significant research awards. Examples include the *International Award of Excellence, Spaces and Flows Research Network* 2018 (Kamalipour); *Commendation for Early Career Academic Award at RTPI Awards for Research Excellence* 2018 (Hartt); the *Royal Town Planning Institute (RTPI) Award for Research Excellence, Early Career* category (Shahab); and the *Journal of the American Planning Association Article of the Year Prize* (Shahab).

The research contributions made by staff in the School have been recognised by learned societies, with members of staff elected during the REF period as *Fellow of the Learned Society of Wales* (Bristow), *Fellow of the Royal Geographical Society* (Brigstocke) and *Fellow of the Regional Studies Association* (Webb). Other examples of leadership and engagement in the academic community include Bristow's role as Vice Chair and Trustee of the Board of the Regional Studies Association and member of the Campaign for Social Science Strategic Leadership Forum; Morgan's role as organiser of the European Union's FP7 Research Network and organiser and founding convenor of the Association of European Schools of Planning (AESOP) Sustainable Food Planning Group; the School's role (led by Sartorio and Shahab) as the UK elected Representative to AESOP for three terms (2014-2020); and Huggins' Membership of the ESRC's Innovation Caucus and the Global Urban Competitiveness Program.

4.5 Summary

In summary, through an embedded interdisciplinary approach, coupled with a policy-facing research agenda, the achievements outlined in this section have allowed the School to effectively deliver the research strategy presented in section 1 and, more broadly, to make a very strong collaborative contribution to the research base, economy and society, both nationally and internationally. These achievements have been underpinned by the supportive human and infrastructural environment outlined in sections 2 and 3, which has also underpinned the School's submitted research outputs and impact case studies.