

<b>Institution:</b> <b>Heriot-Watt University</b>
<b>Unit of Assessment:</b> <b>Sub-panel 17: Business and Management Studies</b>
<b>1. Unit context and structure, research and impact strategy</b>

Excelling in research and enterprise with a focus on impact is one of the five strategic aims of Heriot-Watt University. This UoA also aims to address crucial world issues through interdisciplinarity and close collaboration with industry and business. The UoA comprises 33.9 FTE research professionals within four research centres, overseen by a dedicated head of research. It sits within the Edinburgh Business School (EBS) which is part of the School of Social Sciences.

## Our Key Strategic Aims

1. To increase both the quality and quantity of our research, through interdisciplinary collaboration inside and outside the university, with a focus on impact at all times. *Throughout the assessment cycle this has been tracked by monitoring publications and awards relative to other proximate UoAs internally and relevant benchmark data externally.*
2. To foster a vibrant culture and connected community of full-time and part-time PGR students; providing clear leadership, training and connection to our Research Centres. *This is measured by retention and progression of PGR students.*
3. To enhance staff at all career stages through training, development and mentoring. *This is measured by staff progression against personal targets, and promotions.*
4. To increase the volume and diversity of research income from industry and philanthropic funders. *This is measured by the overall amount of funding, and the variety of funders.*
5. To create infrastructure (both physical and intellectual) that fosters creative collaborations within the UoA and across other HWU UoAs, as well as externally and internationally. *This is measured by the completion of physical structures (buildings, spaces), the impact of those and by assessing Research Centres annually.*

Our research strategy is reviewed regularly by the SoSS Research Committee comprising Research Centre Directors, other UoA leads and senior staff from the School of Social Sciences Management Board. Our local strategy is informed by HWU's Committee for Research and Innovation. We gave fresh impetus to research through the creation of four focussed Research Centres. Centre directors were selected through a competitive process and have devolved responsibility for budgets pertaining to staff access to conferences, workshops and data; as well as funding specifically aimed at professional training and development, internal seed funding, and PhD scholarships. Research across the UoA is supported by professional service staff and each Research Centre has its own targeted strategy which aligns to both SoSS and HWU strategies – there is a particular focus on visibility, impact and income in ways which are appropriate to the discipline. Research Centre Directors meet regularly and participate in Research Committees at School and HWU levels. A local Human Research Ethics Committee reviews and approves research plans and ensures adherence to HWU's Research Ethics Policy, providing a nimble response to research needs.

## Unit-level environment template (REF5b)

### **Strategic Aim 1: Research quality and quantity**

The UoA launched significant initiatives during the assessment period to foster impactful, interdisciplinary research, which drew on expertise within and beyond HWU.

The period saw intensification of international collaborations, e.g. 43% of our outputs have international co-authors in comparison to 27% for REF2014. These projects included collaboration with National Natural Science Foundation (China) as well as with Universities of Sheffield; Swansea and Robert Gordon aiming at developing the peer-to-peer lending market in China. The project provided a roadmap for the development of financial systems that support sustainable growth in China.

During the assessment period 29 successful externally funded projects involved interdisciplinary collaboration with other parts of HWU. Examples include collaboration between EBS and Psychology on mental health and unemployment in Scotland; the Institute of Mechanical Process and Energy Engineering related to developing Technology and Manufacturing Readiness Level Assessment Tool-kit; and Computer Science and the Institute of Geoenergy Engineering on Carbon Pricing Now.

Examples where our research impacted policy and practice include our long-term partnership with BP, which sees our expertise underpinning BP's Statistical Review of World Energy and Energy Outlook 2040. This globally important report informs BP's future strategic plans and is a reference point for many others in the industry. Our pioneering work on Neurodiverse conditions, in collaboration with the Transport Salaried Staffs' Association (TSSA), led to a series of recommendations which resulted in improved learning, development, and promotion opportunities for Neurodiverse/disadvantaged workers. Our leading work in logistics and sustainability has long-standing impact on advancing research and practice in Sustainable Road Freight. This work is conducted in collaboration with the University of Cambridge and University College London and has informed UK policy for road-based freight vehicles and their operations informing the work of the climate change committee (an independent NGO that advises the Westminster Government) and underpins the 5th Carbon budget.

As part of our commitment to advancing visibility and impact, we invested in professional support to extend our work to the popular press, which has seen a ten-fold increase in op-eds, articles and broadcast media appearances by our leading research professors; this has led in turn to direct invitations from policymakers to support their work (**MacIntosh, Sang, Greening**). Selected examples include: Masrani's work in Zero emissions was featured in The Conversation, **Xu's** work on Cold Energy featured in BBC News At Nine; Good Morning Scotland and Scottish Business Insider. **Sang's** work on 12 of the most inspiring women written out of history (Good Housekeeping), **Bhattacharjee** and **Schaffer's** work on Economics Nobel Prize 2019 (The Conversation), **MacIntosh's** work on leadership intelligence (Times Higher Education), **Taheri's** work on reasons for process improvement project failures (Institute of Industrial and Systems Engineering Magazine), **Richards** work on vanishing research time for UK academics featured in Times Higher Education in 2019.

In addition to knowledge dissemination and "conventional" outputs, this UoA also produces unconventional open access outputs. For instance, an open and free-for-public-use database of historical and current world energy consumption and production is based on the BP Statistical Review database (**Schafer; Ersoy**). The UoA is home to other unique and open outputs, for example a website that provides a range of material from a comprehensive classification of monetary policy frameworks in advanced and emerging economies (Cobham); this is the output of a project which currently covers 26 advanced countries, the euro currency area and 33 emerging economies, but will eventually be expanded to cover 110 developing countries.

## Unit-level environment template (REF5b)

### ***Strategic Aim 2: A vibrant community of PGR students***

To complement the creation of the new EBS, we invested in a new Doctoral Centre to support our PGR community. Through the University's Bicentennial Leaders programme the School appointed a Director of Doctoral Training and professor in research methods (Gibson), and created a team of 5 academics and 4 professional services colleagues to support doctoral activity. The scope and scale of our PGR community has expanded significantly during the period both through improved student recruitment whilst the restructure to create EBS brought together a large, pre-existing community of part-time students studying for a Doctorate in Business Administration (DBA) and an expanded PhD community. The Doctoral Centre oversees all PGR recruitment, including running internal competitions recognising best research projects, and offers structured support to individual students and clusters of students with shared interests through our 4 Research Centres. It provides research methodology training and services to our PhD and DBA community across all three campus locations in the UK, UAE and Malaysia. This enhancement to our bespoke research methods resulted from an investment of £330k over the assessment period whilst a further £276k p.a. is invested in PGR scholarships.

### ***Strategic Aim 3: Staff development***

We invested in additional training, mentoring and development for staff during the period to further enhance the research environment for staff at all career stages (see section 2). A UoA research director (Christopoulos) was appointed, who also acts as deputy research director for SoSS. High potential and ECR staff were assigned mentors, with a personal development plan. Working with the University's Organisational Development team we also invested in some bespoke training to close the gender pay gap (see section 2) and the majority of promotions to full professor during the assessment period were female candidates.

### ***Strategic Aim 4: Diversity of research income***

External research awards have grown substantially to £8.2m (£5.7m research spend in this cycle with the balance allocated to years beyond the census date). This represents a 260% increase on the total reported at REF2014. We also widened our sources of funding to include more industry funding (e.g. **Greening**) and philanthropic funding. Funding for impact was a particular beneficiary from philanthropic funding:

1. In 2018 we secured US\$400k from FWU AG, the Berkeley Research Group and Professor David J. Teece, plus a UK-based foundation, to establish the New Enlightenment Conference in Edinburgh in 2019 co-hosted with UC Berkeley and attended by policy makers and industry leaders.
2. In 2019, we secured £1m from Baillie Gifford for further impact work including the establishment of an international academic prize, a schools programme and an annual Nobel lecture. The first lecture will be in May 2021 from Sir Angus Deaton.

### ***Strategic Aim 5: A creative and collaborative infrastructure***

We undertook two major investments in physical space during the assessment cycle, and also reorganised to bring the UoA into four distinct research centres. The first of the physical investments in space was the £1.8m redesign of the main EBS building to bring all PGR students together in a single space, and create an incubator for emerging businesses further enhancing our scholarship and research into enterprise. Completed in the first half of 2018, both PGR students and staff engaged in research into enterprise have since reported substantially increased satisfaction levels.

## Unit-level environment template (REF5b)

The second major investment was £5.6M for the purchase, renovation and reopening of Adam Smith's final home, *Panmure House*, of which £3m was committed and spent during the assessment cycle. The House was opened in 2018 with daily events where members of the public attended daily ticketed debates and panels included members of the UoA staff. This unique resource has proved central to positioning the UoA at the heart of globally visible debates on issues of sustainability, climate change, inclusion and diversity. This in turn has enriched the research environment for staff and research students.

## Future Plans

We recognise that the current environment (including Covid-19) will continue to impact research in the UoA; especially fieldwork and negotiating funded project extensions. By focusing on areas of established excellence in four Research Centres we have increased investment available to grow research capability. Our core research purpose dovetails with post-Covid economic recovery period by engaging in high quality, impactful and transformative research that promotes innovation, sustainability, resilience, wellbeing, diversity and inclusivity. For example, existing research expertise in logistics and sustainable road freight is being deployed to address both the challenges of Brexit and the logistical challenge of vaccine distribution related to Covid-19 (e.g. work started on Innovative UK grants of £1.6m related to logistic challenges (**Greening**) and on UKRI project on Covid-19 vaccine distribution in developing countries (£230k) (**Bing** and **Greening**). Sustainability is a focus for the future and in 2019 we invested through the Bicentennial programme in hiring a research leader in this area (**Carrigan**). Our research into employment, work and professions is committed to developing ways forward for more inclusive and equitable recovery with a particular focus on consequences of remote working for staff with disability and/or mental health issues (e.g., building on a £494k EPSRC project led by **Sang** on disability inclusive science careers). The employment challenges created by Covid will shape support to self-employment and start-ups (**Galloway**). Our energy economics and financial markets research continues to address climate change challenges and promote sustainable market growth (Schaffer), whilst our research into applied network science is helping businesses develop economic resilience in these challenging times.

## Research Structure and Achievements

### *Research Centres Structure*

The Edinburgh Business School (EBS) was formed during this assessment cycle, bringing together academic groups from a previously independent charity (also called EBS) and parts of the School of Social Sciences (SoSS) to form a coherent structure. This unitary structure has enabled greater focus on world-leading, specialist research. It places the UoA at the heart of an international community that encompasses staff and students in Scotland, Dubai and Malaysia, and distance learning students and alumni in over 150 countries.

Each of our Category A staff and PhD students are aligned to one of our Research Centres (see Table 1). Many staff members have secondary research centre affiliations, whilst staff and students can access activities across multiple centres both within and beyond the UoA, further enabling cross-fertilisation of ideas. In the assessment period, some Centres focused on enhancing expertise (e.g., CSEDA), while others were newly formed to blend new expertise with historic groups within and beyond the UoA (e.g., CREWS). Strategic appointments have been made to support some areas (see section 2) whilst development and mentoring of existing staff has seen several individuals

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promoted to leadership positions during the assessment cycle e.g., both **Sang** (employment and gender studies) and **Greening** (logistics) are recognised as leaders in their areas of expertise.

<b>Table 1: Research Centres and Members</b> (* - Joined after REF2014)	
Centre for Social & Economic Data Analytics (CSEDA) Director: <b>Schaffer</b>	<b>Averna*</b> ; <b>Bhattacharjee</b> ; <b>Byrne</b> ; <b>Caglayan</b> ; <b>Christev</b> ; <b>Cobham</b> ; <b>Eross*</b> ; <b>Ersoy</b> ; <b>Haniffa</b> ; <b>Ibrahim</b> ; <b>Jones</b> ; <b>LeMay-Boucher</b> ; <b>Pong*</b> ; <b>Schaffer</b> ; <b>Taheri</b> ; <b>Tealdi*</b> ; <b>Xu</b> .
The Centre for Research into Employment, Work and the Professions (CREWS) Director: <b>Sang</b>	<b>Galloway</b> ; <b>Jubb*</b> ; <b>Kamla</b> ; <b>Richards</b> ; <b>Sang</b> ; <b>Weir*</b> ; <b>Wimalasena*</b> ; <b>Yonekura</b>
Centre for Logistics & Sustainability (CLS) Director: <b>Greening</b>	<b>Carrigan*</b> ; <b>Greening</b> ; <b>Spanellis*</b> ; <b>Turner</b>
The Centre for Networks and Enterprise Excellence (CNEE) Director: <b>Christopoulos</b>	<b>Antony*</b> ; <b>Bititci*</b> ; <b>MacIntosh</b> ; <b>Masrani*</b> ; <b>Pelliccia*</b> ; <b>Tran</b> .

**Research and Impact Achievements**

Below we summarise key achievements in each Research Centre with staff included in REF1a identified in bold.

**Centre for Social & Economic Data Analytics (CSEDA)**

CSEDA was established in 2019 and brought together empirical and data-driven research across the full range of business and economic studies from three smaller research centres (the Centre for Energy Economics Research & Policy, the Spatial Economics and Econometrics Centre and the Centre for Finance and Investment). CSEDA, led by **Schaffer** and **Taheri**, builds on the track record of these predecessor centres but with an expanded remit to support quantitatively-oriented research in new areas such as consumer behaviour and marketing strategy. Within the new Centre, four focused research groupings have been formed: Energy Markets Group (EMG), Centre for Finance & Investment (CFI), Quantitative Methods Lab (QML) and Marketing Analytics Group (MAG). CSEDA has a mix of ECR and more experienced research active staff (n=17) in addition to staff on teaching focused contracts (n=12) who are active members of the centre, engaged in related scholarship. CSEDA hosts 21 PhD students.

A core activity of the EMG is the long-standing energy economics collaboration and partnership between HWU and BP plc. The group's expertise and research (**Schaffer**; **Ersoy**) underpin BP's Statistical Review of World Energy and Energy Outlook 2040. The BP Statistical Review is the leading publication of its kind in the world, providing a comprehensive database of global energy trends for use by industry and the general public. The review is always held in high regard and in this REF cycle was described as "*the most widely respected and highly anticipated global energy publication*" (Atlantic Council 13.06.19). The EMG has now expanded to work with BP on their Energy Outlook, the company's annual projection of long-term energy trends. Funding to support production of the BP review is approximately £400k p.a. with total funding in this cycle at approximately £2.5m; a measure of its impact is that the contract was changed during the assessment period from a 3-year renewable fixed-term to a rolling annual contract. Other research by the EMG includes work on carbon pricing and carbon markets (**Ibrahim**), the economics of low

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fossil fuels (**Xu**), and the interface between consumer behaviour and environmental policy (**Aravena**).

The QML conducts research in cutting edge quantitative methods and their application to real-world problems. A particular strength is spatial economics, spatial econometrics and spatial statistics and developing knowledge exchange at regional, national and international levels. The QML work on spatial economics led by **Bhattacharjee** illustrates how developments at the theoretical frontier of econometrics have important real-world applications: e.g., the structure and organisation of Monetary Policy Committees; policies for reducing health inequalities across Scottish regions and demographic regeneration of interior regions of Portugal; and impact of land reform programmes on forest regeneration and sustainable agriculture in the Amazon. This research programme has also contributed to policy-oriented consultancy activity, e.g., in 2018-19 a QML consultancy project helped develop guidelines for the Scottish Government for defining local areas and evaluation of spatial impacts of offshore and marine developments (**Bhattacharjee**; **Schaffer**). Another area in which the QML is active is in the development, promotion and dissemination of software implementing contemporary econometric methods (e.g. **Schaffer's** Stata packages lassopack and pdlasso packages for high-dimensional estimation and inference (coauthored with Ahrens, ETH Zurich and Hansen, University of Chicago. More recently, **Bhattacharjee** carried-out research commissioned by the Scottish Government to establish the impact of Covid-19 on regional inequality in Scotland.

The dual objectives of the CFI are to support research at the forefront of practice in finance and investment management and to collaborate with practitioners from across the financial community. An example of CFI activity is the collaborative project between ESRC-Newton and Natural Science Foundation of China (£323k) that investigated developing financial systems that can support sustainable growth in China. The HWU component, led by **Caglyan** in collaboration with Tianjin University in China, investigated peer-to-peer lending. The project contributed to improving academic understanding of the financial market in China across a wide range of areas, from promoting financial development and economic growth to developing perspectives on financial management, institution building, internet finance management and risk monitoring and controls. The CFI aims not just to foster collaboration between academics and the financial community but also to engage with the public in its outreach programme. For example, the CFI joined forces with the Ethical Finance Hub in 2017 to sponsor a debate on the motion "Ethical investment is the pursuit of shareholder value", an event reported in *The Scotsman* (17.02.2017).

The strategic objective of the new MAG is to implement interactive interdisciplinary research and improve management practice on consumer behaviour and marketing analytics. MAG engages with industry and academic communities to offer practical quantitative methods that tackle problems using predictive analytics. Members of MAG have extensive experience of working in public and private organisations offering research and support in different sectors. For example, **Taheri** was Academic Advisor for Global Action Plan (GAP) (a charity that brings people together to take practical environmental action improving sustainability) to create a bespoke training programme on marketing research methods and generate rich datasets (e.g., longitudinal surveys) to foster both insight and impact alongside peer-review journal outputs.

CSEDA's future activities will continue to emphasise applied quantitative and data-driven research: spatial and network economics and econometrics; energy and environmental economics and policy, including research on policy supporting a low-carbon future; marketing analytics. CSEDA plans to apply for international certification, such as the Certificate of Forecasting issued by the International Institute of Forecasters (IIF). In addition, CSEDA will expand the range of events, courses, training and guest speakers as part of its outreach and impact strategy.

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### ***The Centre for Research into Employment, Work and the professions (CREWS)***

CREWS (led by **Sang**) comprises a core research group of 10 staff, including 3 ECRs, supplemented by 50 other affiliate members providing a rich and diverse expertise base for the Centre. CREWS hosts 26 PGR students and offers a range of research seminars, workshops and invited speaker events creating a vibrant research culture.

The Institutional Environmental statement notes achievements in Social Inclusion–related research. CREWS are strongly engaged in developing Social Inclusion as an interdisciplinary theme across the University. Established in 2019, it serves as a hub for rigorous, industry-relevant research, addressing societal and global challenges on workforce productivity and well-being, sustainable workforces and enterprise, socially responsible management and planning for the employers' needs of the future.

CREWS consolidates prior expertise at HWU in work and employment with a renewed focus on interdisciplinary work drawing on human resource management, accountancy, enterprise, sociology, and psychology. CREWS actively supports researchers working to meet the United Nations Sustainable Development Goals, which seek to support everyone to live with dignity.

During the assessment period, CREWS members researched: global challenges around Fair Work; gender equality; sustainable work; disability inclusion; racial and ethnic equality diversity in professional workforces; and in-work poverty. Examples include exploring disability inclusion at work in Malawi (Sang; Richards), arts and crafts in India, poverty at work in Zimbabwe (Galloway), entrepreneurs in Sri Lanka (Wimalasena); and professional inclusion/exclusion in the Middle East (Kamla).

CREWS members collaborated with stakeholders including research end-users, governments, industry and businesses. CREWS has worked with trade unions (specifically The Transport and Salaried Staff Association, University and Colleges Union), staff groups (e.g., National Association of Disabled Staff Networks) to transform their support for disabled members, and to foster greater disability inclusion both within the trade unions and within employment. Work has also been undertaken with the Scottish Association of Mental Health and the National Association of Disabled Staff Networks. CREWS members have advised Scottish Government (disability inclusion in single use plastics and environmental charging), professional bodies and Cross-Party Working Groups in the Scottish Parliament and has worked with the School for Social Entrepreneurs Scotland.

Centre members have been successful in securing external research income from a range of funders, including UKRI, the Wellcome Trust, Carnegie, Trade Unions, international funders and charitable organisations. Centre members have led large interdisciplinary grants, for example, Disability Inclusive Science Careers (EPSRC £450k – Inclusion Matters) led by **Sang** which has brought together STEM, virtual reality and disability inclusion to work with trade unions, staff networks and universities to foster cultural change within universities. This work is on-going and will have an impact on how universities manage disabled academic staff by creating and delivering virtual reality training for research leaders, to foster more inclusive research cultures.

### ***Centre for Logistics & Sustainability (CLS)***

The Centre for Sustainability and Logistics (CLS) (led by **Greening**) was formed to consolidate the research activities of the Centre for Sustainable Road Freight (CfSRF, formed 2012) and the Logistics Research Centre (LRC, formed 2002). Both LRC and CfSRF enjoyed international reputations for world class research, shaping policy and practice in sustainable logistics/supply chains. CLS has support from 20 industrial members, including a number of large freight operators

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and sustainability-related technology providers, e.g., Tesco, Sainsbury's, John Lewis Partnership, DHL, Flexible Power systems, Scania, and Goodyear.

Alongside the recurring industrial funding from this network of partners, CLS draws funding from 2 main sources: EPSRC and Innovate UK. EPSRC funding supports three academics **Greening** (Director), Walker (investigator, HWU Engineering), Keyes (lead investigator roadmapping). CLS currently has 3 post-doctoral researchers on 5-year contracts. CLS secures industrial subscriptions from each member organisation which funds 3 PhD students. CLS has two visiting fellows Palmer and Pigden who are internationally recognised for their work in the fields of collaboration and vehicle routing.

EPSRC and Innovate UK have funded £2.8m of research on Sustainable Road Freight (led by **Greening** in collaboration with the University of Cambridge and UCL). This programme comprises 12 embedded projects, and the core work focuses on developing large-scale high-fidelity computer models and collecting/analysing the data required to support these models. The programme's organisation centres on crosscutting themes of policy, operations, and technology. Innovate UK funded feasibility studies for several vehicle electrification strategies with the overarching aim of improving logistics operations. These include: Vehicle to Grid charging to reinforce the grid; up featured truck trailers to include battery storage and operational impacts; wireless charging hubs. The common thread across these programmes is a broad-based consideration of the energy-logistics-policy system, built on cutting-edge modelling capability housed in CLS and driven by extensive, long-term and deep industry engagement.

CLS's research has notable impact, such as the recent development of the logistics evidence base for the 5th Carbon budget along with 2 Foresight reports for the Department for Business, Energy, and Industrial Strategy. The preceding CfSRF research also addresses the international aspect of decarbonisation through its facsimile operations in China, Africa and India. Research activity into sustainable logistics is coordinated across 4 continents involving over 20 academics. In 2019, a second large programme grant was received from EPSRC for a further 5 years research (the programme has been funded for a total of 10 years). CLS has also played a significant role in developing the research agenda for "clean cold" and leads the work on the operational needs of the international cold chain. This work is founded on a deepening collaboration with the University of Birmingham. Recently, CLS secured significant funding (UKRI £230k) to develop Covid-19 vaccination distribution strategies for Bangladesh (**Greening** and **Bing**).

CLS undertake several dissemination activities, most notably: 1) the annual international workshop (attended by 100-150 delegates; and 2) Centre meetings held every 6 months (typically attended by 50-70 delegates). Both represent sector leading pathways to impact which result from a focus on interdisciplinary research and deep, long-standing relationships with industry.

CLS's strategy is to enhance capacity and capability by addressing the challenges of decarbonising freight using 3 strategic pillars:

1. Continue to develop the reach of our research by deepening our collaboration with our international partners in China, India and Africa.
2. Address far horizon decarbonisation challenges: these include resilient adaptive freight solutions that accommodate (as opposed to mitigate climate change); multi modal freight solutions (including rail, air, and maritime)
3. Carry out further research to prepare the previously identified far horizon solutions for implementation. This will draw on our developing capacity/capability relating to the



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development of large scale hi fidelity agent based modelling of freight systems (also known as virtual worlds/digital twins)

CLS will continue to develop its research programme to secure impact outcomes from its near horizon research. We are currently developing a proposal for an electric road demonstrator (£150M overall budget) and are optimistic that the UK government will make substantial funding available to support this project, which will showcase research that CLS has carried out to date. CLS will continue and deepen its engagement with industry to demonstrate how decarbonisation strategies can be realised.

### *The Centre for Networks and Enterprise Excellence (CNEE)*

CNEE was established in 2017 to bring together, synergise and exploit a number of previously strong and internationally leading workstreams that includes network science (McGregor and Christopoulos), strategy (**MacIntosh**), business performance measurement and management (**Bititci**); continuous improvement (**Antony**) and augment these with emerging themes such as Gamification (affiliate member **Spanellis**); Economics of Networks (**Pelliccia**). CNEE has seven core academic members, as well as a further 14 affiliated members. The core team includes highly cited scholars (**Antony**, **Bititci**), a high profile business leader and author (McGregor), a national-level Business School leader (**MacIntosh**) as well as mid and early-career researchers and 21 PGR students under supervision.

CNEEs research is based on understanding organisations, supply chains and networks as complex systems that can be modelled, analysed, understood and improved.

During the review period the centre enjoyed a number of key developments. These include:

- grounding of performance measurement and management research (**Bititci**) in systems and organisational control theories that led to special issue in two significant journals (International Journal of Management Reviews) and (International Journal of Operations and Production Management) as well as an International Conference in Edinburgh (2016) and a symposium in Italy (2019).
- establishment of circular economy business models as a key research theme facilitated through several small SIR funded projects (**Bititci**, **Masrani**, **Spanellis**) which led to winning of the UKRI Circular Economy hub in Chemical Manufacturing led by Loughborough University.
- extension of continuous improvement theories into context of public sector organisations (local councils, police force, public utility) as well as higher education (**Antony**, Rodgers) leading to two books and c. 12 journal papers.

During this period members of this centre oversaw 7 PhD awards, 210 peer reviewed papers in journals, 12 books, 175 papers in academic conferences, gave over 40 keynotes, co-hosted three international conferences and served as members of 5 learned societies. The groups work was supported through internal research scholarships and research grants from EPSRC, Scottish Funding Council, Innovate UK, industry and charity.

**Bititci's** work also resulted in significant international impact by improving performance of businesses in the UK, Turkey and Estonia through working with local industry support organisations delivering growth and productivity improvements in over 90 organisations with upwards of 10k employees. (REF Impact Case study). **Antony's** work on continuous improvement in public sector organisations delivered savings in excess of £4m across several public sector organisations.

The CNEE organisational model is premised on academic citizenship, with key tasks and strategic priorities distributed among core staff. Going forward, our strategy is built upon a development of a

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number of fundamental themes in an integrated way. First is the impact of emerging technologies and new business models in the ways we manage performance (**Bititci**) and continuous improvement (**Antony**) in organisations, supply chains and circular economy networks. This coupled with developing a more dynamic understanding of strategy making (**MacIntosh, Masrani**) together with leveraging the power of networks (McGregor and Christopoulos), future entrepreneurship (**Tran**) will enable us to develop and define the next generation concepts for enterprise excellence .

## 2. People

### Staffing Strategy

All UoA subject groups follow best-practice recruitment processes and benefit from the HWU Bicentennial Research Leaders recruitment program: designed to attract the best talent in any discipline to enhance world-leading research. Our future staffing strategy also reflects HWU's Strategy 2025 commitment to research excellence.

#### *Equality and Diversity*

Guidelines and procedures are in place to guarantee that all appointments and promotions are transparently based on quality, ability, and achievement. Throughout the REF cycle, all research active staff have been appointed on open-ended contracts with no fixed-term Category A staff. The SoSS senior management team has a 50:50 female/male balance whilst the balance in the EBS leadership team is 62:38. Promotion criteria give consideration to maternity leave, health-related absence and caring responsibilities whilst a mentoring scheme supports female staff considering promotion. Our FTE (33.9) is split FTE 24 Male, 11 Female; 6 are ECRs. In 2020, Heriot-Watt made a successful submission to renew our Athena Swan Bronze Charter Award; this has been conferred until 2026 reinforcing our ambition to put EDI at the heart of our future strategy. For example, in 2019 the School ran a three-stage programme for female mid-career staff that addressed the issues of:

- (a) establishing research identity and building profile,
- (b) developing financial skills in preparation for bidding for and managing grants, and
- (c) building strong networks within and beyond the University.

Performance and Development Review (PDR)/ Promotion pathways materials feature positive case studies of a wide range of staff, especially women and those working P/T or returning from career breaks.

#### *Staff Development and Support Mechanisms*

All full Professors are reviewed annually by the EBS Executive Dean, with feedback from the UoA head of research, and Research Centre Directors. More junior staff have their PDR carried out by the Head of the Subject Group or Research Centre Director. In all cases the process seeks to monitor individuals' forward job plans and explores support for individual researchers to produce world-leading outputs and impact. PDR and other mentoring mechanisms emphasise quality (rather than quantity) of research outputs, income, knowledge exchange, impact, citizenship and leadership. We encourage a long-term perspective and encourage submission strategies that foster international reach. During the Covid-19 pandemic, specific focus was given in each PDR to how the changing working environment has affected different categories of staff members, specific research methods and topics (e.g., fieldwork) and steps needed to address these issues. For all research staff, there are several support mechanisms enabling them to enhance their research profile, including:

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- Training sessions aimed at developing impact in research and sourcing funding for public engagement projects.
- Research community monthly discussions/training through HWU, SoSS and UoA Research Centres.
- Conference, seminar, PDR and Internal Research Grant (IRG) funding applications approved by Research Centre Directors and SoSS Director of Research. During this REF period, internal designated funding of £84k enabled small faculty-led projects (such as field trips for data collection), and pump-priming awards which led to larger applications to external funding bodies (see section 3 for examples of projects funded internally).
- Peer review of grant applications before submission to enhance quality of submissions.
- An active programme of semester-long study-leave, accessible every three years and used to reinforce international collaborations. During this cycle, 41% of staff in this UoA benefited from study-leave with representatives from all Centres and all career stages.
- A structured approach to career development with four internal promotions to full professor (**Galloway, Greening, Sang, Taheri**) and three promotions to Associate Professor (**Richards, Xu, Tealdi**).

### ***Early Career Researchers (ECRs) Support Mechanisms***

Every ECR is given an academic mentor on appointment for up to three years. In this UoA, ECRs are specifically supported through PDR and IRG developmental funds. ECRs are supported through their 3-year probation with a senior mentor, a phased transition to full teaching and administrative duties in their workload over the period and clear targets in research, teaching and citizenship. New staff are encouraged to engage in research-led teaching to enhance their experiences, complemented through formal training in the PGCert in Teaching & Learning and a range of training programmes offered through the HWU Research Futures Academy (RFA). ECRs commit to an agreed research agenda which covers their publication plans, funding opportunities, conference strategy and which prioritises early opportunities to participate in doctoral supervision alongside more experienced staff. This combination of development mechanisms affords ECRs the opportunity to develop the skills required to operate effectively as academic researchers, both independently and as part of a team. The range of promotions for retained staff and others who took promoted posts elsewhere attest to the success of a developmental approach. In addition, the RFA provides a widespread programme of personal and professional training led by experienced internal/external facilitators, research leaders and subject experts, to provide development opportunities for staff (especially ECR) and PGR students, to develop the essential skills and knowledge for success in their current and future academic career.

## **Training and Supervision of PGR Students**

PGR students are firmly integrated into the fabric of Research Centres and subject groups. At the close of this assessment cycle (July 2020), the PGR programme had 100 PhD completions, which compares favourably to 59 recorded at the same point in REF2014. Our PGR community comprises over 25 different countries of supported by a mix of self-funding, industry-sponsored, research council and school scholarships. The expansion of PGR reflects the 2014 SoSS strategy to further intensify our research culture whilst the incorporation of the Doctor of Business Administration (DBA) programme drew in experienced business management professionals from a wide range of countries and organizations. 45 DBA students have graduated since January 2014 which compares favourably to 30 recorded at the same point in REF2014. 93 DBA students are currently in the research stage and 233 are undertaking taught courses. This provides a range of opportunities for academic

## Unit-level environment template (REF5b)

colleagues to gain further supervisory experience, develop research collaborations with a broad range of business organisations and access research data and sites that facilitate impact.

To support substantial numbers of PhD and DBA students, SoSS established a new doctoral training centre led by Prof Gibson, appointed in December 2019 as the first Bicentennial Chair in Research Methods and Director of Doctoral Programmes. Four other new staff were recruited, representing a recurring investment of £250k p.a. Further investment of £80k led to establishment of a new PG Certificate in Research Methods for delivery both on-campus and online, with development of new teaching materials.

A School PGR Committee meets regularly comprised of PGR students and academic leads from each Research Centre, and other colleagues with responsibilities for the PGR experience. All PGR students are co-supervised by international experts in their fields who are qualified supervisors as defined by the HWU Code of Practice for PGR Programmes. Supervision teams meet PGR students regularly to mentor and monitor their progress. Moreover, Research Centre PGR academic leads offer subject-specific support to all students. PGR student progress is monitored annually with the Director of Doctoral Programmes, PGR academic lead and supervisors' involvement, giving timely guidance and feedback to students in order to ensure their successful completion.

Training is provided through three principal routes:

1. SoSS runs a 60-credit PGCert in research methods that is compulsory for any PGR student who does not already possess equivalent Masters-level research methods training at the point of admission.
2. PGR students have access to a comprehensive programme of generic skills training provided by HWU's Research Futures Academy. The training is structured around identifying individual training needs and is more intensive in the first two years of study to include courses related to business and enterprise skills, career development and viva preparation;
3. SoSS also participates in, and contributes to, Accounting, Finance, Business and Management, and Economics pathways within the Scottish Graduate School of Social Science (SGSSS) creating access to a wide variety of other research training opportunities for students delivered across the other Scottish member universities.

Through the SGSSS, the UoA is eligible for ESRC 'plus three' and 'one plus three' doctoral funding and PGR training requirements are benchmarked against SGSSS expectations, which were also the basis for a new MSc in Social Research Methods to be introduced from 2022. In addition, the UoA has successfully gained ESRC-funded PhDs and built PhD studentships into grant bids, including 4 new awards since REF 2014, with 2 in economics, which is unprecedented in Scotland. We also target HWU's internal James-Watt Scholarships specifically at interdisciplinary projects that foster new relationships in supervisory teams. These create opportunities for projects and candidates in line with the UoA strategy to foster impactful, interdisciplinary research. Recent collaborations include joint PhD projects with other HWU schools (e.g. the School of Mathematics and Computer Sciences on a project in financial risk) as well as colleagues in other UoAs within SoSS. Additionally, the UoA encourages and supports staff to seek external partners for collaborative PGR studentships as a way of increasing funding opportunities and generating impact.

During 2020, many PGR students have been adversely affected by COVID-19 pandemic restrictions. The UoA responded by providing additional support opportunities, such as regular 'virtual coffee breaks' to provide informal opportunities to maintain social contact with fellow doctoral students, and by moving existing face-to-face training opportunities online (e.g., research methods training); reading groups, brownbag sessions and a paper development incubator. Importantly, HWU took the

## Unit-level environment template (REF5b)

decision to match the UKRI approach to offering fully-funded extensions of up to six months for all final year students whose work had been affected, with additional support including providing office furniture and equipment at home to students at all stages.

### 3. Income, infrastructure and facilities

## Unit Income

During the assessment period, the UoA has pursued a strategy to secure increased funding from a more diverse group of funders. This has resulted in a significant increase in total external awards in the current assessment period to £8.2m (£5.7m has been spent in this cycle compared with £1.6m in REF2014). This represents a substantial increase in grant income from an average of £316k p.a. in the last REF2014 to £813k p.a. in REF2021. The funding portfolio has expanded and diversified to include UKRI; EU sources; third sector, trades union, industry, philanthropic and UK governmental bodies. Further, our range of Principal Investigators has increased significantly, pointing to the successful delivery of both our strategy and our training and development. Examples include:

- **Greening:** research into wireless electric vehicle charging for commercial use and his research into decarbonising transport network plus attracted funding from EPSRC and Innovative UK totalling (£2.8m) during the period.
- **Schaffer:** continued partnership with BP worth £2.5m aimed at providing expertise and research underpinning BP's Statistical Review of World Energy and Energy Outlook 2040.
- **Sang:** EPSRC project on disability inclusive science careers (£494k) in collaboration with the University of Edinburgh.
- **Caglayan:** ESRC-Newton project: Peer-to-peer Lending Market In China: Pricing, Risk Management And Regulation (£323k).
- **LeMay-Boucher:** ESRC funded research on whether financial products reduce poverty and vulnerability. Experimental evidence from Benin on the impact of access to saving accounts and microcredit (£274k).
- **Porter:** ESRC funded research on inequality of opportunity of young people in Peru (£250k).
- **Xu:** EPSRC funded research on low carbon jet fuel, green energy storage and E-Bio-Fuel totalled at (£156k) during the period.

Our Knowledge Exchange funded projects from innovate UK and UK industry and commerce combined totalled (£421k). Some example of successful Knowledge Exchange projects includes: RL Engineering – Innovate UK £152k (**Bititci** and **Taheri**) and Pentland Precision - UK Industry and Commerce £133K (**Bititci**).

The nature of our research portfolio has enabled capacity to develop diverse and inclusive relationships with smaller, but strategically important, funders alongside larger awards from conventional sources. For example, faculty have been successful with three *Social Innovation Fund (SIF)* project proposals to the Scottish Government, each worth approximately £50k. These are projects aimed at providing research support and advice to social enterprises involved in working with poor and vulnerable people, which are often not in the direct remit of larger funders.

### **Engagement with Block Grants and Internal Funding**

HWU created targeted internal funding opportunities through the Scottish Funding Council's *Global Challenges Research Fund (GCRF)* to encourage interdisciplinary research, develop further

## Unit-level environment template (REF5b)

strategic national and international alliances, enhance the internationalisation of research, and exploit knowledge exchange activities. These resulted in projects including supporting trade unions in Malawi to improve disability inclusion (**Sang**); and the Indonesia child poverty project (**Bhattacharjee**). GCRF also funded collaborative work with the Institute of Petroleum Engineering to research multi-hazard prediction and disaster response management in Indonesia (**Spanellis**). Facilitating interdisciplinary research is also boosted through joint PhD supervisions through HWU's own James Watt Scholarships (see section 2).

To promote research development, 'seed-corn' *School-level internal research grants (IRG)* are available, requiring clear identification of outputs and multiplier effects, with priority given to ECR applicants. Such seed-corn funding is a building block towards more ambitious external and research council funding. The IRG funded 31 projects to 23 staff in the UoA during the assessment period with an average of (£2.7k) per project. Impactful research resulted from such initiatives, including: improving organisational performance and customer experience: A case study of a privatised Iranian hospital (**Taheri**); Self-employment and poverty (**Galloway**); Investigating the effect of membership in political discussion groups (**LeMay-Boucher**); Managing Neurodiversity in the Workplace (**Richards**); Fostering Innovative communities in Healthcare with gamification technique (**Spanellis**); and Social Media and Distracted Women (**Wimalasena**).

## Infrastructure and Facilities

### ***Infrastructure and facilities related to income generation, impact and engagement strategy***

The School-based research office (1.5 FTE professional services staff) provides dedicated support to Research Centre Directors to organise research activities and management of PGR programmes, as well as supporting other staff research activities.

At university-level, the Research Engagement Directorate (RED) provides support to academic staff in order to help develop, construct and cost research proposals to a wide variety of funders. The RED team work closely with academic staff in the early exploration of ideas for funding and possible sources, and facilitates connections of required expertise across HWU.

All funding applications worth £50k or more are peer-reviewed by experienced researchers within the relevant Research Centre. We also encourage ECRs applying for small research grants to engage in peer-review for developmental purposes.

HWEngage has a dedicated team supporting and advising staff on engaging their research with wider audiences/stakeholders throughout the research process, and recently appointed Public Engagement Leads in each School across the university.

The HWU Corporate Communication Office is in contact with staff to collect and promote details of all research achievements and advises on dissemination. This university-level support is supplemented locally in the UoA through specialist external support as described in section 1.

All research outputs are recorded and made publicly available in an Open Access repository: the HWU Research Gateway.

Our local community impact is also facilitated through successful partnerships and the continued work of the "Scottish Crucible" as a pan-Scotland professional and personal leadership programme (developed initially by NESTA for the UK). This is funded by SFC and the Scottish Government aimed at developing future research leaders.

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### ***Infrastructure and facilities related to research environment and supporting staff and PGR students***

Research Centre directors localise HWU and SoSS Research Strategies to foster discipline-specific strategy and host seminars, reading groups, brownbag sessions and paper development/writing incubator sessions. They also manage local funding for staff access to conferences, workshops and data; fund targeted professional training and development (see section 2) and support research culture. Research centres are key to achieving interdisciplinary research strategy by organising showcase/brain-storming events aimed at encouraging/creating opportunities for cross-disciplinary collaboration across SoSS and HWU.

During this assessment period, the UoA established a new dissemination centre for scholars, policy makers and the general public to come together to review and debate the latest research thinking. *Panmure House*, the last and only surviving home of the 18th century economist and philosopher Adam Smith, has been the subject of a £5.6m restoration by HWU and supported by donors such as the World Heritage Fund. As well as hosting major events such as the New Enlightenment Conference, there are five major seminar series:

1. Inspiring Alba (leading Scottish heritage scholars)
2. Economics@Panmure (technical economics research)
3. the Wealth of Nations series (leading international economists)
4. the Adam Smith series (the first in 2021 to be given by Nobel Laureate, Sir Angus Deaton) and
5. the Hutton Series (a one-year series on how finance and business can combat climate change).

Over £1.5m has been raised to support the research dissemination activities at *Panmure House*, including a £1m donation from the fund management company, Baillie Gifford. This donation allows *Panmure House* to be staffed and resourced for research dissemination, including the technical capacity to host high quality virtual meetings and professional video capture. This support also endows a global annual academic prize of US\$75k for the best research paper on long-term investing, run by this UoA and selected by 14 global academics and thought leaders, including Professor John Kay (Oxford University), Professor David Teece (UC Berkley), Professor Nitin Nohria (Harvard Business School) and Adrian Orr, the Governor of the Reserve Bank of New Zealand.

The UoA encourages grass-roots initiatives like 'shut-up and write' sessions open to staff and PGR students and supporting undisturbed writing time. Sessions run once or twice a month targeting a specific written output and have proved popular in virtual form during the Covid-19 lockdown.

Specific resources to support staff and PGR students in finance are available with access to Bloomberg data via purpose-built lab facilities.

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

### **Interdisciplinary Research**

The UoA is highly engaged with practice in a range of settings. Examples of interdisciplinary research not mentioned in previous sections:

- **Galloway** and Sherif's work links finance and accountancy with studies on enterprise, self-employment and socio-emotions. Their study published in *Critical Perspectives on Accounting*

## Unit-level environment template (REF5b)

reached top three studies for the journal regarding social media attention for 2019/2020. Their findings on enterprise and poverty were presented at the Scottish parliament in 2016.

- **Kamla's** work, which linked language, translation and cultures to the development of qualitative and interdisciplinary accounting research resulted in a special issue on language, culture and translation in the world-leading journal *Accounting, Auditing and Accountability*.
- **Haniffa** collaborated with academic colleagues from Gadjah Mada University in Indonesia in winning a three-year research grant worth Rupiah 2,000,000,000 (£106,000) under the education and technology scheme from the Indonesian Ministry of Research and Technology in December 2019. The project is related to the use of 3D animation technology in teaching business ethics.
- **Spanellis'** work builds a science network with the Institute for Life and Earth Sciences to study 'A Hope Spot for sustainable forest-community development around the Gulf of Tribuga, Colombia, looking at ecological, economic and social aspects of the issue of the region in relation to the new Port construction plans.
- **LeMay-Boucher's** work, based on a British Academy/Leverhulme Small Research Grant, focuses on witchcraft in Benin. It draws on a collaboration with anthropologists at the Universite Libre de Bruxelles, Belgium and Charlemagne Tomavo (Economic and Social Council Benin). This work is the first to document, with a large-scale survey, the importance of magico-religious sector in the Beninese context.
- Interdisciplinary research is also encouraged through HWU's Interdisciplinary PhD scholarships (e.g., **Xu** undertook PhD supervision jointly with Engineering on developing Effective Strategies for the UK Road Transport and Transition to a low carbon economy).

## Global Collaborations

- **Haniffa** has worked with colleagues from Northern University Malaysia and Rochester Institute of Technology (Dubai) on a joint project related to alternative pricing for Islamic home financing. The project was supported by a research grant of \$20,000 from Islamic Development Bank in Saudi Arabia. This resulted in a co-authored research article published in the *International Journal of Housing Markets and Analysis* in 2016.
- **Jones** and **Eross** visited Da Nang University (Vietnam) and gave research seminars and lectured to undergraduate students. As an outcome Jones was involved in two projects including co-authors from Da Nang University, Westminster University and IESEG School of Management (France) researching political uncertainty and corruption and their financial impacts.
- **Pong** work with Cardiff University involved computerised analysis of a large number of text documents in the US SEC EDGAR database. A paper entitled "Private Lenders' Demand for Audit" was published in the *Journal of Accounting and Economics*. Based on UK data and commissioned by the Competition Commission, the project produced a "Report on Auditor Clauses in Loan Agreements".

## Key roles in International Research Networks

UoA staff delivered over 50 keynote speeches at leading academic and industry conferences during the assessment period. These included **Bititci** at the PMA symposium, Padova, Italy (2019) and British Academy of management workshop, University of York (2015). **Galloway** at the Small Business Research Forum, Abu Dhabi (2016); **Haniffa** at the AISEFE International Congress (2018) of Islamic Economy, Finance and Ethics in Istanbul, Turkey, and at the 2nd International Conference



## Unit-level environment template (REF5b)

(2018) on Finance, Banking and Financial Stability (SMARTFAB) in Bali, Indonesia; **Taheri** at the North America Higher Education International' webinar (2019); **MacIntosh** for a British Academy of Management webinar (2020); and **Xu** at the Global Oil Market Uncertainty and Oil Prices: Data-Centric Solutions. International Conference on Energy and AI, Tianjin, China (2020). **Ersoy** was an invited speaker at the DEVEX oil and gas conference held in Aberdeen (2018).

Members of the UoA are involved in external and international networks. **Carrigan** organised the Regional Studies Association [RSA], Research Network, Poznan, and was invited by the ESRC to deliver their 'Keywords' Policy Seminar Series workshop 'Ethics: Research and Responsibility in Business and Society'. **Kamla** was invited to join AMIS (Accounting and Management Information Systems) in 2019 as a scientific panel member, aiming at enhancing research and PhD accounting programs and training in Eastern Europe. **MacIntosh** has chaired a discussion on "what has theory ever done for me" for the British Academy of Management (2019) and is elected to the Council of both the British Academy of Management and the Chartered Association of Business Schools.

## Networks, Knowledge Exchange and Stakeholder Collaborations

The UoA strategy has been to pursue impact through collaborations with public, private and charitable organisations as well as specific communities of practice. One indicator of its success is that the UoA's scholars co-published with non-academic institutions nearly twice as often as the UK average (3.7% compared with 2.0%) over this assessment period.

During the assessment cycle, UoA members created a number of knowledge exchange partnerships with local manufacturing businesses, including initiatives with RL Engineering; Pentland Precision and Bradley Park Waste. CLS has formed long-term industrial collaborations where research findings and avenues for further research are regularly shared and debated with organisations such as the John Lewis Partnership; Tesco and DHL. Another indicator of achievement is the successful research partnerships with businesses and other organisations, such as the National Association of Disabled Staff Networks, Scottish Research Partnership in Engineering, University and College Union, Scotland; BP; FECECAM, MOOV ETISALAT; Flexible Power Systems; Menzies Distribution; and Falkland Estate Trust.

During the assessment period, the UoA created a Thought Leadership seminar series where prominent practitioners give a provocative overview of practice in their area of expertise and the general public are welcome to attend. An example was former Scottish Government Minister for Enterprise, Jim Mather, whose lecture on "Systems thinking in the service sector and leadership in a system thinking context" (October, 2018) was one in a series of lectures attended by a cumulative total of over 1,000 delegates. Members of CSEDA were invited to organise sessions at the Joint Statistical Meetings of the American Statistical Association four times in recent years (Denver, 2019; Baltimore, 2017; Chicago, 2016; and Boston, 2014). The success rate in such bids is less than 5%, and this is a proud and unique honour for the Centre.

Other examples of public value creation and distribution demonstrate the prominence of the UoA in a number of not-for-profit or third sector collaborations seeking to support people experiencing disadvantage in society and influence policy. For example, **Sang** was invited to a 2017 Scottish Parliament roundtable on Period Poverty, directly contributing to the national debate about menstruation policy that resulted in legislation being officially lodged at the Scottish Parliament to ensure free access to sanitary products for all women. **Kamla** contributed to a 2018 Institute of Chartered Accountants of England and Wales (ICAEW) round-table on inclusion of professional refugees in the accounting profession. **Xu** contributed to UK Parliamentary Office of Science and Technology debates related to climate change and aviation and sustainable aviation fuels, and a

## Unit-level environment template (REF5b)

2018 roundtable at the Sustainable Biomaterials (RSB) Annual meeting in Berlin, Germany. **Galloway's** expertise on poverty resulted in invitations to present at the Scottish Parliament, the UK Government's Department for Work and Pensions, and the Employment Related Services Association. **MacIntosh** has contributed to, and chaired, panels at the British Academy of Management, the Academy of Management, the Strategic Management Society and the Chartered Association of Business Schools (of which he is Chair), given leadership talks to the Scottish Government's leadership forum, led a workstream for the Scottish Government's Advisory Group for the Recovery (2020) and chairs a national, social care charity.

## Organising Conferences and Workshops

Staff co-hosted several international conferences in the assessment period. **MacIntosh** was co-chair of the Strategic Management Society conference in Glasgow (2014), **Galloway** was the co-chair of Institute for Small Business & Entrepreneurship Conference, Glasgow (2015). **Bititci** was the co-chair of PMA 2016 and EurOMA 2017. **Caglayan** was the co-chair of ESRC-Newton joint project with Natural Science Foundation of China at HWU Edinburgh Campus. HWU accounting staff hosted 3rd British Accounting and Finance Association (BAFA) Annual Conference (2017). **Taheri** organised and hosted 12th International Colloquium on Arts, Heritage, Non-profit and Social Marketing Conference (Academy of Marketing) in HWU 2014 and also hosted Tourism Marketing special interest group conference (Academy of Marketing) in HWU (2017). **Tealdi** hosted Migration and The Labour Markets in April 2018. *Economics faculty* hosted 50th Annual Conference of the Money, Macro and Finance Research Group (2018), the leading macroeconomics and policy research association in the UK. This UoA also hosted several high-profile events at Panmure House, not least a public lecture by Prof. James Bullard, President and Chief Executive Officer of the Federal Reserve Bank of St. Louis, and the New Enlightenment Conference (2019).

## Fellowship and Advisory Board Membership

UoA members also sit on external leadership bodies, e.g., Cross Party Working Groups within the Scottish Parliament (**Sang** – Women's health, **Galloway** – Women's Business). **Bhattacharjee** was appointed as fellow to the National Institute of Economic and Social Research in 2020, and to the Committee of the Money Macro and Finance Society. **MacIntosh** was appointed as a Companion of the British Academy of Management (2020). **Bititci** is a member of Scottish Manufacturing, and Chairman of IFIP's Working Group on Advanced Production Management. He is also Vice Chair of the Institute of Operations Management whilst **MacIntosh** is Chair of the Chartered Association of Business Schools and a Council Member for the British Academy of Management. **Tealdi** and **Schaffer** are research fellows at IZA Institute for Labour Economics. Other memberships include: Fellow of Royal Society of Edinburgh (**Schaffer**), Latin American Association of Environmental and Resource Economists (LAERE) (**Averna**, founder and member), Latin American and Caribbean Environmental Economics Program (LACEEP) Costa Rica Adolfo Ibáñez University (**Averna**).

## Journal Editorships and Editorial Boards

There are currently 35 editorial board positions held by staff in the UoA e.g.: *Journal of Travel Research*; *Journal of Business Research*; *Organization Studies*; *European Management Journal*, *Production Planning and Control*; *Accounting and Business Research*; *International Marketing Review*; *Journal of Marketing*; *Work, Employment and Society*; *Accounting, Auditing and Accountability Journal*; *Gender, Work and Organization*; *Critical Perspectives on Accounting*. 13 of our staff have either role as editors, associate editors or guest editors in reputable journals during

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the REF period. For example, **Galloway** is Editor in Chief of *International Journal of Entrepreneurship & Innovation*; **Bititci** is an area editor for *International Journal of Management Reviews* and *International Journal of Operations and Production Management*; **Haniffa** is the Editor in Chief *Journal of Islamic Accounting and Business Research* and guest editor for *Critical Perspectives on Accounting*; **Taheri** is a senior editor of *Tourism Management Perspectives* and associate editor of *International Journal of Contemporary Hospitality Management*. **Masrani** is Associate Editor of *Journal of Management Development*. **Tealdi** was a guest editor for *Labour Economics*. **Kamla** was a guest editor for *Accounting, Auditing and Accountability Journal* and *Critical Perspectives on Accounting Journal*. **MacIntosh** was a guest editor for *British Journal of Management* (2018). **Bhattacharjee** is Co-Editor of *Spatial Economic Analysis* and *Sankhya Series B*.