

Institution: University of Plymouth
Unit of Assessment: 17 Business and Management Studies
<p>1. Unit context and structure, research and impact strategy</p> <p>a. Context and structure</p> <p>Research in Business and Management is focused in the Plymouth Business School (PBS), which operates within the vibrant interdisciplinary environment of the Faculty of Arts, Humanities and Business as one of the Faculty's five Schools. PBS covers a full range of management and business subjects within its three departments: (i) Accounting, Economics and Finance, (ii) Business Management and (iii) International Shipping, Logistics and Operations. It has continued to implement its long-term strategy of enhancing the School's international standing as a community of researchers who produce outstanding research with impact through strong international and interdisciplinary collaboration and productive industrial and civic engagement.</p> <p>There are 32 academics (category A) being returned to REF2021, a similar number to our REF2014 submission. Over the REF2021 census period, PBS academics contributed some 500 journal articles, 70 book chapters and 25 reports, and edited or wrote more than 30 books. The productive and successful research environment is perhaps best reflected through the substantial increase in the number of publications in CABS three- and four-star journals, from about 60 in the REF2014 period to more than 130 in the REF2014 period. Our thriving and improving research environment is also reflected in a strongly growing postgraduate research community with 128 PhD students supervised to completion, an average of 18.3 per annum compared to 7.6 per annum in REF2014. After a strong increase in funding in the REF2014 period, PBS has consolidated its research income, generating £2,468,374 in the REF2021 period, an average of £352,625 per annum (£341,976 per annum in REF2014). Our research provides solutions to national and international challenges and has been facilitating economic and societal change, from poverty relief in Kenya to curbing bullying in the NHS.</p> <p>The unit's research had been conducted within the Institute for Social, Policy and Enterprise Research (iSPER) in five Themed Research Groups (TRGs) until 2019. The TRGs covered our areas of expertise and were instrumental in driving research excellence. They were interdisciplinary groups consisting of academics from PBS and the wider University, who coalesced around a common theme to solve research questions and to provide solutions to business, political and societal challenges, with iSPER serving as an umbrella. The premise behind the TRGs was thus on facilitating interdisciplinary exchange. The TRGs were: (i) Maritime and Logistics, Business and Policy, (ii) Markets, Innovation and Competition, (iii) People, Organisation and Work, (iv) Product and Service Value Chain Innovation through Advanced Technologies, and (v) Responsible Entrepreneurship and Social Innovation.</p> <p>In the academic year 2019-2020, the Faculty of Business and PBS were integrated into the Faculty of Arts and Humanities, which became the large and broad Faculty of Arts, Humanities and Business (which is submitting to UoAs 13, 17, 18, 20, 23, 27, 28, 32, 33). In 2020, the TRGs and their topics were merged into the two Research Clusters (RCs) 'Sustainable Business – Productivity, Innovation and Performance' and 'Sustainable Business – Consumer, Business and Community Behaviour and Management'. These changes allow our research to align more closely with the University's overall strategy of strengthening interdisciplinary collaboration. The enlarged Faculty provides a highly productive environment for cross-school collaboration through common structures, strategies, and initiatives, and it enables for more effective and targeted research through the synergies created. The RCs amalgamate the key research themes that evolved from the TRGs. They are housed in broader units, bundling a wider range of interdisciplinary expertise together and thereby further enhancing the School's capacity to participate in collaborative projects across a variety of subject areas. They constitute versatile research units that are highly suited to strengthening the Faculty's interdisciplinary research themes particularly concerning the creative industries and the digital economy. Moreover, they</p>

facilitate the forging of closer relationships and collaboration with the University's strategic interdisciplinary institutes: the Marine Institute, the Plymouth Institute of Health and Care Research and the Sustainable Earth Institute, which transcend School and Faculty boundaries. For instance, interdisciplinary collaboration between researcher from PBS, Health and Computing on issues ranging from brain cancer to maritime cybersecurity has successfully attracted major EU Horizon 2020 funding.

b. Research Strategy

Building upon our improvements shown in the REF 2014 submission, we have continued to develop a thriving research environment in PBS with the objectives of (i) ensuring an inclusive and diverse community of outward-looking and interdisciplinary-minded researchers, (ii) producing world-leading and internationally excellent research outputs, (iii) enhancing the impact of our research on the economy and society, (iv) increasing our research income to build up further research capacity, and (v) improving the international reputation and visibility of our outstanding research and its impact. Our strategy to attain these objectives has been based on our understanding that the next step change in our development will be achieved through a significant increase in the quality and impact of our research. The key elements of our strategy since 2014 have been:

- (1) Focusing research on areas of strength and developing research areas with significant potential and fit.
- (2) Facilitating interdisciplinary research and international collaboration with outstanding partners.
- (3) Supporting and embedding impact and knowledge exchange as an integral part of our research culture.
- (4) Developing a vibrant and stimulating community of researchers that encourages internal collaboration and external engagement with the wider research and business community and the society at large.
- (5) Supporting our staff at all stages of their careers, of all disabilities, gender and ethnicity to enable them to fulfil our clearly expressed expectations of world-leading and internationally excellent research and impact.
- (6) Facilitating high-quality funding applications through an interwoven support system at the School, Faculty and University level.
- (7) Enhancing our PGR programmes, increasing the number of PhD students, and making sure that the PGR programmes fit with the overarching research strategy.
- (8) Increasing the visibility of our research and intensifying our external engagement.

The Themed Research Groups (TRGs) were set up to provide a structure conducive to achieving our objectives, to address pressing business and policy challenges and to have impact:

- (i) **'Maritime and Logistics, Business and Policy' (MLBP)** built on our research strengths in maritime business and shipping logistics (**Dinwoodie, Gauci, Karamperidis, Roe, Roh, Tang, Xu**). Its topics range from sustainable maritime operations to offshore wind farming and port performance, aligned with the University's cross-faculty themes around sustainability and the blue economy. Its members regularly collaborate with colleagues from the Faculty of Science and Engineering and the Marine Institute on interdisciplinary research projects, such as on an EU-funded project on cybersecurity for global shipping (**Karamperidis**).
- (ii) **'Product and Service Value Chain Innovation through Advanced Technologies' (ProSerV)** complemented MLBP through a focus on mainly land-grounded themes. ProSerV pooled expertise from multiple subject areas, including logistics, marketing and business management, to investigate how to innovate and transform products and services and their value chains through smart business and enterprise decisions, and through the effective use of advanced digital technologies, knowledge sharing

and collaborative business analysis (**Agarwal, Childe, Huang, Knight, Kumar, Lim, Liu, Mansfield, Moizer, Y. Wang, White, Wight**). Its topics range from supply chain analyses of sectors such as agri-food and car manufacturing to big data analytics to improve value chainwide performance. The developed tools are also applied in major EU-funded projects tackling global health challenges such as Alzheimer's disease and brain cancer in collaboration with colleagues from Health and Computing, contributing to the University's cross-faculty theme of health and care (**Liu**). The TRG contributed substantially to the unit's publications. **Childe** has been named on the Clarivate/Web-of-Science list of Highly Cited Researchers for 2020, being in the top 1% by citation in his field.

- (iii) **'People, Organisation and Work' (POW)** brought together academics from different disciplines who undertook interdisciplinary research that contributes to the promotion of positive and sustainable organisational environments and fulfilling and rewarding work (**Kinsey, Child, Lewis, Saundry, Tripathi**). Key topics in this area are bullying and harassing, discrimination, and managing workplace conflicts. In close contact with employers, such as NHS, and public bodies, such as the Advisory, Conciliation and Arbitration Service (Acas), this research has been translated into actions and shaped public strategies, and lead to two impact case studies (**Lewis, Saundry**).
- (iv) **'Markets, Innovation and Competition' (MIC)** spanned topics from the fields of financial markets and economic behaviour (**Ashby, Felgenhauer, Nawaz, Olugbode, Paul, Tziogkidis, Virk**) to those of international competitiveness and regional development (**Basso, Benhin, Bishop, Brand, Haupt, Litsios, Wang**). Its research ranges from investigating organisational and individual behaviour, such as risk culture of financial institutions and persuasiveness of arguments, to market and policy analysis, such as the volatility of financial markets and the effectiveness of innovation policy. Competitiveness and regional development are investigated through different lenses, focusing on firm formation, productivity, or taxation. MIC members have influenced the risk management of financial institutions, leading to an impact case study (**Ashby**), and evaluated government schemes for the Department for Business, Innovation and Skills (**Paul**).
- (v) **'Responsible Entrepreneurship and Social Innovation' (RESI)** deepened MIC's entrepreneurship interests through a focus on social development, social innovation and enterprise, and education (**Al-Dajini, Haddoud, Hunter, Lean, Tzokas, Walmsley**). Exploring the relationships between entrepreneurship and sustainable development, key projects funded by Research Councils include micro-entrepreneurship and poverty alleviation of women refugees in the Middle East as well as the impact of displacement on Syrian artisans (**Al-Dajini**).

To further develop the unit's strengths and achieve synergy effects, this research structure was amended towards the end of the REF2021 census period as part of the **unit's five-year strategy for the period 2021-2026**. Related themes are now pooled into the two Research Clusters (RCs) **'Sustainable Business – Productivity, Innovation and Performance' (PIP)** and **'Sustainable Business – Consumer, Business and Community Behaviour and Management' (CBCBM)**. Within the RCs, six Research Initiatives (RI) cover more specific research areas and projects and develop embryonic areas. While continuing successful research topics of the TRGs, the RIs also constitute a thematic refresh in two ways. Firstly, topics are aligned more closely with the University's cross-faculty themes around sustainability, marine and maritime environments and societies, the blue economy and health, and with the Faculty's research on the creative industries and the digital economy. Secondly, topics reflect the changing environment in the presence of Brexit and pressing global challenges, from Covid to environmental deterioration.

Thus, several new themes emerged within the areas of the unit's expertise. Research now explicitly focuses on the circular economy as part of the solution to environmental challenges.

The RI '*Competition, Innovation and Positioning*' (refreshing MIC) investigates the role of a circular economy for the sustainable development of competitive and innovative regions, while the RIs '*ProSerV*' and '*Maritime Transport*' explore the concept of a circular economy in the context of supply chains and shipping logistics. This research links to initiatives in the Faculty of Science and Engineering and the Marine Institute.

Taking up a topical policy theme in the aftermath of Brexit, the RI '*Marine Transport*' (refreshing MLBP) also particularly focuses on the issue of 'free ports'. ProSerV is now enhanced by taking an integrated, collaborative, full value circle approach to addressing performance and productivity. It means that all dimensions of value chains are coherently addressed, from value proposition and value beneficiaries to value networks and value capture.

The RI '*Modelling and Simulation for Social System Innovation (M3SI)*' has emerged from an embryonic group of PBS staff who use simulation models for business, innovation and entrepreneurship research to encompass broader research on entrepreneurship and innovation management. The research of this group has led to two EU funded projects on promoting entrepreneurship among young people in the current REF period (**Moizer, Lean**).

While the RIs above are part of the RC PIP and re-refresh the themes of successful TRGs and previously embryonic groups, the following are assigned to the RC CBCBM and develop nascent research areas within PBS. The RI '*Decision Making, Persuasion and Behavioural Change*' amalgamates the expertise on persuasion theories and strategies that seek to change behaviour and decision making. Key areas of interest include the implementation of sustainable business practices and the use of digital technology to reach and influence key stakeholders and to manage teams remotely, with the latter topic gaining considerable interest in the Covid-19 world.

The RI '*Journey Place Narrative*' is an embryonic research area with the potential to contribute to cross-Faculty collaborations, particularly with Cornerstone Heritage (based in History – UoA28), in the creative industries and the digital economy disciplines. This RI explores narrative, film and literary texts and the discourses surrounding the formation of place knowledge, experience, and value creation. It seeks to integrate these into place branding, marketing and promotion strategies through user experience design and customer co-creation platforms hosted by Web 2.0 and other open access systems.

While the RCs and their RIs re-refresh the thematic focus of our research in alignment with the wider Faculty and University, they continue to fulfil the same fundamental function as the TRGs, of driving excellence in impactful research, developing a stimulating and thriving research culture, and facilitating intellectual exchange and collaboration across subject disciplines. The TRGs/RCs/RIs have initiated new seminar series and workshops in their areas. These have intensified discourse with academics from other institutions at home and abroad as well as practitioners from private and public organisations, thereby promoting our existing collaborations with external partners and establishing new relationships. They also enable Early Career Researchers (ECRs) and Postgraduate Researchers (PGRs) to gain presentation and discussion experience, utilise feedback from a wider audience and benefit from being exposed to a broader range of research.

RCs and RIs are key to further increasing the visibility of our research to both the academic community and the wider public. They have organised events to showcase our research and to bring academics and practitioners together. Examples include the virtual event "Boundary-spanning knowledge mobilisation in agri-food value chains" (2020), which was attended by 68 participants from nine countries across Europe, South America and Asia, with more than half of the participants from industry. The event was led by Liu and partly supported by the EU Horizon 2020 RUC-APS project.

c. Impact Strategy

PBS has a long history of collaborating with businesses, organisations, and agencies in the region and beyond as a provider of solutions to real-world challenges. Being embedded in the South West economy and society, the unit often utilises its regional expertise to inform its research on regional, national, and global challenges, and to translate this research into impact in the region and beyond. The strengths of the TRGs/RIs in areas such as maritime business, logistics and regional development are well adapted to the needs in the region. For instance, PBS staff have collaborated with Oakmount Control Systems (**Childe**) and Fowey Harbour Commissioners on KTPs (**Butel**), provide economic expertise to the Dorset Local Enterprise Partnership (**Brand**) and successfully applied for EU Horizon 2020 funding on food supply chains based on its close links to agricultural partners in the region (**Liu**).

Links with beneficiaries of the unit's research beyond the region underpin our Impact Case Studies (ICS). They emerged out of collaboration with private business and public organisations and bodies resulting from solution-oriented research dealing with key challenges of organisations and policymakers. These ICS address issues in the risk culture of global financial institutions (**Ashby**), develop strategies against bullying and harassment in the NHS and influence the work of NHS employers and regulators such as NHSI (**Lewis**), and shape the strategies and policies of Acas and directly influence government decision making on conflict management in the workplace (**Saundry**).

Traditionally, the applied, problem-solving orientation of the unit's research has been the foundation of our impact on the economy and society. To enhance this further, our impact strategy has focussed on three elements: (1) supporting experienced researchers to develop outstanding impact over the REF period and beyond; (2) opening up pathways to impact to all staff to ensure sustained enhancement of our value, and (3) facilitating a community in which impact is embedded as an integral part of research in the mindset of all staff.

PBS has delivered these elements by appointing an experienced researcher to the role of Impact Champion to coordinate impact activities and potential case studies and to act as an advisor to staff on how to develop and enhance their impact (**Saundry** and later **Agarwal/Liu**). The Champion complements the support team at the Faculty and University level, with a dedicated Impact and Knowledge Exchange Manager in the Faculty and an impact quality team within the University's Research and Innovation Department. PBS takes early action to identify staff members whose research has the potential for significant impact. It supports them through seed-corn funding to enable them to explore this potential and develop strong cases. Internal funding sponsors partnerships and projects between academics and local partners. A series of advanced workshops and one-to-one discussions with internal and external experts provides guidance on how to enhance impact and to collect and document evidence. PBS has spent up to £20,000 in a year on supporting impact case studies. To facilitate impact, the University provides state-of-the-art software (VV tracker) and administrative support to collect and document evidence.

To guide less experienced researchers, all staff are offered basic impact training and attendance at national impact awareness and training events. To maintain links and develop new relationships, key beneficiaries of our research are identified and invited to tailored events that showcase the practical importance of our research and help to strengthen relationships. Examples include the interdisciplinary iSPER event 'Brexit: Meeting the challenge in the South West' in 2017, which generated a vibrant discussion between academics, business representatives, and local authorities about the implications of Brexit for the UK and the South West in particular. Such networking events are part of a broader strategy to open-up impact pathways, including through papers accessible to a wider audience of stakeholders, and media training and support for staff. For example, the Brexit event was complemented by a series of policy papers and podcasts that have been shared with policymakers and influencers ([link](#)). Such initiatives are supported by the University's PR specialists. Through collaborating with other units across the University, PBS academics broaden their reach and impact. For example,

PBS worked together with colleagues of SERIO, an applied research unit within the University's R&I Department, on a consultancy and research project for 'Power to Change', an organisation that supports community businesses across the country, with a contract value of £50,000.

Important recent initiatives will strengthen the unit's ability to generate impact for the **planning period 2021 - 2026**. The Bridge, a Faculty research initiative, works as the interface between the Faculty and society. It supports collaborative research, development, and innovation by facilitating new connections and partnerships, and develops opportunities for knowledge transfer and knowledge exchange. The Bridge helps businesses and organisations tap into academic skills and talent and increases the visibility and impact of our research. It has attracted approximately £2,000,000 of funding since 2019. The Bridge particularly enables us to strengthen our links to the creative industries and digital economy.

Established units, such as SERIO, and new initiatives, such as The Bridge, are part of a joined-up framework to facilitate an academic community with a mindset in which impact is embedded as an integral part of research. To further foster such a mindset, a personal pathway to impact statement is now part of all individual research plans. All staff members are encouraged to record and collect any data and information that document the impact of their research. Pathways to impact are discussed in Personal Development Reviews (see section 2).

Exciting new potential impact case studies are being developed. Promising areas include: (1) agri-food supply chain resilience and sustainability, based on research strengths within the TRG/RI ProSerV and related to an EU-funded (Horizon 2020) project (**Liu**), (2) regional development, based on research strengths within RI CIP and related to collaborations with Dorset LEP and Plymouth City Council (**Brand**), (3) coastal communities, within ProSerV, seeking to unlock growth potential, helping to create stronger, more diverse and sustainable communities (**Agarwal**). The latter project involves a host of stakeholders including the Coastal Communities Alliance, Blackpool City Council, the Home Office, the UK's Chief Medical Officer, Lord Bassam of Brighton and Baroness Valentine (Chairs of the House of Lords Select Committee on Regenerating Seaside Towns, 2019), Director of Evidence of the Children's Commissioner, the Local Government Special Interest Group and the Coastal Partnership Network.

To strengthen our capability to generate research with impact, PBS plans to recruit in key areas. Two Professorial appointments in Business Management and in Sustainable Business/Entrepreneurialism are part of the immediate plan to provide additional research leadership for our RIs and to link areas of strength more effectively. These high-profile recruitments will be complemented by several lectureships and Doctoral Teaching Assistant (DTA) positions in areas of strength.

2. People

a. Staffing Strategy and Staff Development

We have advanced our **staff development strategy** to ensure a solid underpinning of our research and impact strategy. Firstly, we have revised and significantly refined the Personal Development Review (PDR) process, which is consistently embedded and monitored across the School's departments and the Faculty as a whole. The annual review is supplemented by several PDR meetings during the year. The series of PDR meetings enables senior management to identify and discuss development opportunities, objectives, and obstacles with every staff member across the year and to respond quickly to individual challenges. These meetings include a thorough discussion about individual research plans and progress, and particularly allow senior academics to advise and support staff members on publication strategies, generating external research income and converting research outputs into impact. As a result, all staff members have a workable five-year research plan which includes an outline of planned funding bids, strategies for collaborative work, and individual pathways to impact. The PDR process is complemented by a Probationary Review Process for new members of staff that is consistently and rigorously applied across the School's departments. In the probation period,

new staff members are inducted into the University, Faculty, School, and their Department, and they were/are assigned to a TRG/RI. Through the personal development and probationary review processes, the expectation that all research-active staff members publish at an internationally excellent or world-leading level and contribute to the School's external funding and impact is well communicated and embedded, and individual strategies to fulfilling this expectation are collaboratively developed.

The PDR and probationary processes inform the comprehensive workload system that allocates all academic duties (teaching, research, academic management and leadership) transparently and fairly. Research-active staff members receive an annual research allowance of about 40%, depending on performance. A sabbatical policy is in place, enabling colleagues to take periods of a one- or two-semester research leave, which have specific achievement targets. Further policies exist for industry secondment, with the purpose of enhancing impact, and for visiting fellowships, with the purpose of fostering collaborative projects. For instance, **Liu** visited the National Research Institute of Chile in Santiago in 2017 and 2019, and the Agricultural Research Institute and Demonstration Farms in Matera, Italy, in 2019.

University, Faculty and School training supports the development of generic personal and professional skills such as effective academic time management, managing people and teams, and project management. It ranges from introductory sessions to workshops on more specific issues, such as leading difficult conversations. The training programme also assists the development of specific research skills, such as attracting research funding and generating impact, and covers research ethics and data management (including GDPR). Media training sessions prepare colleagues for presenting their research on podcasts, radio, and television. Both internal and external experts deliver training, with more subject-specific sessions organised by the School or TRGs/RCs and more general sessions often organised by the University or Faculty. The University has also developed a Research Leadership Programme delivered by the external provider Barefoot Training to offer a sound foundation for Research Leadership Champions. This year-long programme starts with a three-day summer course and then continues with four half-day workshops and a series of one-to-one e-meetings with the instructors across the year.

Internal research funding enables staff to attend or organise workshops and conferences and conduct short-term research visits. A system of seed-corn funding is designed to kick-start new research projects and collaboration on research output and grant application with partners at the national and international stage. The average annual budget for conference attendance/organisation and seed-corn funding of research has been about £50,000. Separate funding is available to support high-value research proposals or research projects of particular strategic importance. All funding is granted on a competitive basis to foster a stronger bidding culture.

A key element of our **staffing strategy** is the development of Early Career Researchers (ECRs). Complementary to the Personal Development and Probation Review processes, a mentoring scheme exists which matches mentees and mentors. While this scheme is open to all colleagues at all stages of their career, it is of particular importance to ECRs to receive additional support and direction. TRG/RC/RI Leads offer further guidance to ECRs. Provisions are in place to ensure that ECRs with a short research history have sufficient time to conduct their research and embark on successful research careers. Many training opportunities are particularly geared to the needs of ECRs, such as writers' retreats over several days. Internal mentoring on publication, funding and impact strategies is complemented by external advice. For instance, Professor Stephan Page, who was appointed as a Visiting Professor and is Co-Editor of a CABS 4* journal (Tourism Management), gave his insights into strategies to achieve publications in top journals. Internal funding is granted in a balanced way across early-career, mid-career and experienced staff members, making sure that ECRs have sufficient resources to attend conferences, access data, conduct research visits, and kick-start and sustain international collaborations. ECRs are represented on the School's Research Committee. They benefit from a Faculty-wide ECR network, which brings together researchers from across the Faculty, creates a forum for ECR issues and stimulates collaboration across the Faculty's disciplines.

The group of ECRs encompass in a wider sense 12 Research Assistants (RAs), who have been employed to support strategically important projects alongside eight Research Fellows (including two Marie Curie ESR Fellows), and 13 Doctoral Teaching Assistants (DTAs), who are on a 0.6 FTE career development post that involves working towards a PhD and supporting teaching. DTAs and RAs receive the same attention as ECRs on traditional Lecturer contracts and have been fully integrated into their departments and TRGs/RIs. Regular meetings with, and mentoring by, their Directors of Studies (DoSs) and the other members of the supervisory team adds another layer of support in the case of DTAs, and so do review meetings with, and mentoring by, the Principal Investigators (PIs) and other senior members of the project team in the case of RAs and Research Fellows. The University has fully implemented the Concordat to Support the Career Development of Researchers, and all PBS line managers, Research Leads, mentors and PIs act accordingly. Researchers on fixed-term contracts are members of the University's Researcher Forum. They receive guidance on career options, feedback on application documents and support for interview preparation, and they can benefit from a range of workshops for postdoctoral researchers on all aspects of professional practice provided by the University's Doctoral College. The University of Plymouth was among the first 35 European HEIs to receive the EU HR Excellence in Research Award, which was renewed in 2017. The University and PBS support has been successful. For instance, out of the ten DTAs who completed their PhD over the REF2021 period, nine continued their career on a lectureship at PBS or other institutions (e.g., University of Exeter, University of the West of England) and one returned to working in the financial sector.

Recruitment of new staff is informed by our clear expectation of research excellence. In the current REF period, the focus has been on appointing early-career to mid-career academics with a promising research record of publications and funding applications. These new recruitments include **Childe, Haddoud, Karamperidis, Litsios, Nawaz, Roh, Siaw, Tang, Virk, Y. Wang**. They joint PBS from universities in the UK (e.g., Cardiff University, Heriot-Watt University, University of Bradford) and abroad (Hanken School of Economics, Finland; Nanyang Technological University, Singapore; Sydney University). The appointments have reinforced our existing areas of strengths with academics who significantly contribute to our current REF. These colleagues constitute 31% of our staff submitted to REF 2021. Having successfully retained this group is an indicator of the success of our staff development strategy in a period of structural change, in which a number of colleagues retired or left.

b. Research Students

Developing a vibrant and supportive research environment has enabled us to expand our PGR programmes and attract significantly larger numbers of highly qualified PGR students. During the current REF period, 128 doctoral students have graduated from the School's programmes. This implies an increase of the average annual number of doctoral awards during the REF2021 period of 141% compared to the REF2014 period, from 7.6 to 18.3. At the same time, we have improved the quality of our PGR programmes and the overall research experience. In the Postgraduate Research Experience Survey (PRES 2017), our PGR programmes performed excellently. Ranked within the whole sector, our programmes were in the first quartile in the overall and aggregate outcomes, and in the five categories supervision, research culture, research skills, professional development, and teaching. PGR students have published a number of papers in high-ranking journals (CABC 3* and 4*) already during their PhD period (e.g., Entrepreneurship and Development, International Journal of Production Research, Journal of Business Research, Production Planning and Control, Psychology and Marketing, Tourism Management).

We have successfully extended the range of our PGR programmes. Besides MPhil/PhD Business with Management, our portfolio includes MPhil/PhD International Logistics, Supply Chain and Shipping Management, MPhil/PhD Marketing, MPhil/PhD Finance, and MPhil/PhD Tourism and Hospitality, DBA Business Administration and DPA Public Administration. Our international focus is reflected by the fact that our PhD students who completed during the

REF2021 census period came from 29 countries, with 71% of them from overseas (91 out of 128).

Our PGR students are comprehensively supported. Every student has a supervisory team of at least two academics. All new staff members receive thorough supervisory training, and all experienced staff members receive mandatory refresher supervisory training. These training sessions are run by the University Doctoral College, which also provides training sessions for examiners. To ensure high-quality support, the number of PGR students a colleague is allowed to supervise is normally limited to the equivalent of eight full-time students as Director of Studies. All PGR students have personal workspace and access to laptops/computers and printing facilities.

PGR students can choose from a wide range of postgraduate academic courses and workshops in consultation with their supervisors. We are currently developing online training in Research Methodology to help meet the needs of both full-time and part-time PGR students. Besides academic courses, other events are particularly geared towards, and partly organised by, PGR students. There are fortnightly PGR cafés with presentations and other activities, the Faculty's Annual Doctoral Conference with keynote speeches and chaired sessions with Faculty academic staff serving as discussants for each PGR student presentation, and conferences of the University's Postgraduate Society. Additionally, the University's Doctoral College offers an established and successful Researcher Development Programme.

Being affiliated with the TRGs/RIs facilitates PGR student engagement in academic discussions and induces them to present their research early on not only inside but also outside specific PGR events. It provides pathways to become involved in research and impact projects. Moreover, the School's PGR students are part of a larger, vibrant, and interdisciplinary PGR community within the Faculty of Arts, Humanities and Business, which further enriches their experience and facilitates research across traditional disciplinary borders. PGR students can also gain teaching experience in their subject areas and receive teaching qualifications (SALT, PGCAP), further preparing them for academic positions. Our PhD students have been recruited by institutions at home (e.g., Loughborough University, Northumbria University, University of Birmingham, Oxford Brookes University) and abroad (e.g., Beijing Normal University, King Abdulaziz University, Shenzhen Polytechnic, Yangzhou University). Their voices are heard through internal focus group discussions, and through their representatives in Doctoral and Research Committees.

The University, Faculty and School have funded 22 PGR scholarships (tuition fees and living costs) to promote priority research areas over the REF2021 period. Additionally, a PGR development fund supports national and international conference attendances, data collection, external training and other research-related activities. Support for PGR students extends beyond their graduation. The Alumni Research Fellow Scheme is a programme that allows students who have completed their PhD to stay for another two years with the University to undertake research activities, conclude publications and gain further teaching experience.

c. Equality and Diversity

The University of Plymouth and its Faculties and Schools are committed to equality, diversity and inclusivity and have comprehensive structures in place to support, enable and empower all colleagues. The School's staffing policy has been devised in line with the University's policies and procedures to provide a supportive and inclusive working, learning and social environment. PBS works closely with Human Resources to advise staff on, and fully implement, policies such as the Equal Opportunities, the Flexible Working, and Religious Diversity. All staff members are required to complete training on Diversity in the Workplace and Unconscious Bias. Colleagues involved in recruitment must also take part in training on Recruitment and Selection for Panel Members and further training if they chair Recruitment Panels. Participation in all mandatory training is monitored and part of the Personal Development Review. Further e-learning offers

include, for instance, Disability Awareness. To facilitate gender equality, a Women's Mentoring Scheme is run University-wide, in which several PBS staff members have participated.

Our staffing policy of implementing gender equality has led to improvements at all levels including leading research positions. This is reflected by the fact that both of the two joint Associate Heads of School for Research and Innovation are women, as are 75% (43%) of the PBS academics at the level of Professor (Associate Professor) in 2020. Out of the seven promotion to Professor/Associate Professor over the REF2021 period, four were women. The women share of researchers submitted to REF2021 is 31%, and we aim to increase significantly the share of research-active women. PBS has become home to an increasingly culturally diverse community. BAME account for 50% of staff submitted to REF2021. The age distribution among submitted staff is relatively balanced, with 6% in the age group 24-34, 31% (35-44), 34% (45-54) and 28% (55-64). As part of our continued work to foster equality, diversity and inclusivity, the School is on course to submit an application for an Athena SWAN Bronze Award in the first half of 2021. At the University level, a working group has been formed to advance accreditation through HE's Race Equality Charter in 2021.

The University's commitment to equality, diversity and inclusivity also applies to its PGR students. The School is home to an ethnically diverse PGR student body, with 56% of those who completed their PhD in the REF2021 period identifying themselves as BAME. The share of women PGR was 38% over the REF2021 period. Gender equality has improved over this period, with women constituting a majority of current PhD students. To underpin further action academically, **Liu** is developing a research project to address the question of how to increase access and participation of BAME female students in PGR, jointly with the Universities of Leeds, Reading, Sheffield and others.

3. Income, infrastructure and facilities

a. Research Income

Over the REF2021 period, the unit's external research income is £2,468,374. The largest funding share has come from EU Government Bodies (32.9%), mostly through Horizon 2020 and to a small extent through Interreg. UK-based Charities, such as Comic Relief, represent the second biggest funding share (30.5%). A further third of our research income has come from three sources: UK Government Bodies and Local Authorities (17.2%), the Research Councils/UKRI (10.6%), and UK Industry, Commerce and Public Corporations (5.7%). Overall, the average annual research income has slightly increased from £341,967 in the REF2014 period to £352,625 in the REF2021 period, a rise of 3.1%. Thus, we have consolidated the substantial progress we have made in the REF2014 census period. Our focus going forward is to grow UKRI funding and recognising the uncertainty around EU funding to capitalise on government and industry opportunities.

Interdisciplinary projects on entrepreneurship and poverty alleviation have constituted an important element through research council and charity funding. The ESRC and the Department for International Development (DfID) project 'Poverty alleviation and women refugees in the Middle East: Empowerment through grassroots micro-entrepreneurship?' (£349,170, 2016-2019) and the ESRC/AHRC GCRF project 'Conserving cultural heritage: the resilience of forcibly displaced Syrian artisans in Jordan' (£237,439, 2016-2018) were led by **Al-Dajani** as Principal Investigator (PI). The project 'Scaling an innovative supply-chain for poverty alleviation in Kenya' (2014-2018) received over £1,200,000 from Comic Relief, out of which £692,415 were awarded to PBS with **Duckett** as PBS Co-Investigator (CoI). Further projects on entrepreneurship have been funded by the EU under the Erasmus Plus Scheme, for instance: 'Innovating youth work to foster youth active citizenship, entrepreneurship and employability (YOU-ACE)' (€197,925, **Moizer**, 2017-2019) and 'Developing online tools to foster entrepreneurship in the retail sector (LET IT BE)' (€120,832, **Liu**, 2015-2017).

Projects on shipping, maritime business and supply chain management have received considerable funding from the European Union. Horizon 2020 supports the project 'Enhancing and implementing knowledge-based ICT solutions within high risk and uncertain conditions for agriculture production systems (RUC-APS)' with €1,332,000 (2016-2022), out of which **Liu** as the University's PI was awarded €156,400 to lead the work package on knowledge management for food supply chain decision support. Horizon 2020 also funds the project 'Cyber preparedness actions for a holistic approach and awareness raising in the MARitime logistics supply chain (Cyber-MAR)' with €6,018,368 (2019-2022), with the University of Plymouth being awarded €644,388, involving the Faculty of Science and Engineering and PBS (**Karamperidis**). Interreg funding for PBS include: 'Hybrid freight sailing: Sustainable approaches and innovative liaisons (SAIL)' (€98,626, **Xu**, 2012-2015) and 'Offshore (wind farm) operation and maintenance mutualisation (2OM)' (€244,000, **Howell**, 2011-2015).

Collaborating with researchers in the School of Medicine and the School of Computing led to two further EU Horizon 2020 projects: 'Blood biomarker-based diagnostic tools for early stage Alzheimer's disease (BBDiag)' (2018-2022) and 'An integrated platform for developing brain CANcerDiagnostic techniques (AiPBAND)' (2018-2022). The total values of the two projects are €3,434,981 and €3,687,312 out of which €273,287 and €286,666 are allocated to the PBS work packages on business model innovation and exploring value chain models with **Liu** as PI. Two full-time Marie Curie Fellows are employed for three years to work on the PBS packages.

Further income has resulted from collaboration with industry and commerce, government bodies and public organisations. For instance, **Childe** was awarded £108,935 (2018-2020) from Innovate UK for the Knowledge Transfer Partnership between University of Plymouth and Oakmount Control Systems, Ltd. **Butel** received funding of £93,127 (2014-2016) from Fowey Harbour Commissioners and the Technology Strategy Board for the KTP between the University and Fowey Harbour Commissioners. **Saundry** was awarded about £35,000 from Acas for several projects on the management of workplace conflicts (2014-2017). He is also Col of the ESRC project 'Managerial competences, engagement and productivity – developing positive relationships' (£615,984, 2019-2022).

b. Research Infrastructure and Facilities

PBS has set up a well-balanced structure, with the Associate Heads of School for Research and Innovation (AHoS R&I), supported by the Knowledge Exchange Lead, and a Research and Knowledge Exchange Committee (for brevity, Research Committee in the following) leading at the School level and TRG/RC/RI Leads at the research group level. The Research Committee, chaired by the AHoS R&I (**Agarwal, Liu**), develops the School's long-term strategy, leads and coordinates the School's research, impact, knowledge exchange and PGR activities, and monitors the TRGs/RCs and all aspects of the School's research performance. A Research Sub-Committee decides on the allocation of the budget for conference attendance, inviting guest speakers for School seminars and workshops, seed-corn funding, staff development events, etc. Within the parameters of the School policy, TRGs/RCs/RIs have decided on their strategies to promote their research areas and on the allocation of their devolved budgets. This structure enables PBS to implement its research strategy and policy consistently across the School while it, at the same time, empowers members of the TRGs/RCs/RIs and allows for devolved decision making. It makes sure that research spending follows the School's strategic priorities, and that through utilising the diverse expertise at the TRG/RC/RI level, research teams can respond flexibly to their specific circumstances.

The School's research structure is joined-up with the Faculty's structure. The Faculty Research Committee, chaired by the Associate Dean for Research, provides direction for the Schools and facilitates synergies and interdisciplinary collaboration across Schools. It guides and coordinates the Faculty initiatives, such as the Faculty-wide ECR network and The Bridge. In collaboration with the Schools' Research Committees and the Faculty Research and Integrity Committee (FREIC), it ensures good research governance and implements the University-wide code of good practice in research, which covers research ethics and integrity including GDPR and data

management. FREIC reviews applications for ethical approval and approval of the Research Data Management Plan, which are required by all staff and PGR students prior to the commencement of research with human participants. The Faculty and PBS have also set up a College of Reviewers in line with University procedures. This College ensures that all funding bids are internally reviewed and optimised in this process. The Faculty also provides administrative support to its five Schools through its Research Office, supported by the University. A Faculty Research Manager, a Knowledge Exchange and Impact Manager and an R&I Development and Partnership Manager, jointly with a team of Research Administrators at the Faculty and School level, assist PBS staff on all research issues.

The Faculty and PBS infrastructure is closely linked to the strong research infrastructure and facilities at the University level. The University's strategic cross-faculty Marine Institute, Plymouth Institute of Health and Care Research and Sustainable Earth Institute significantly contribute to the reputation and visibility of the Institution. They also provide excellent opportunities for interdisciplinary research collaboration across Faculties. The University infrastructure offers key centralised services to support research income generation within its Research and Innovation (R&I) Department. The R&I Department organises, in collaboration with Faculties and Schools, training on the whole process of generating income through a comprehensive programme of workshops and courses on topics such as writing research applications, how funders assess applications, working with businesses, etc. It provides the intelligence on new and upcoming funding bids and arranges sessions about and with major funding bodies. During bid applications, the R&I Department provides substantial one-to-one support regarding all elements of an application. Its support staff take care of all aspect of administration and costing of funding bids. The R&I Department also provides an infrastructure for applied research to the benefit of the economy and society. Based within the University's R&I Department is SERIO, an applied research unit that offers specialist evaluation and research services to government bodies, local authorities, businesses, charities, etc. SERIO provides tailored output to its clients, enabling them to make informed decisions and develop effective policies and strategies. It offers opportunities for academics across the University to get engaged with private, public and third-sector organisations at the national and regional level.

The University operates an open access research repository (PEARL). Staff are required to deposit all research outputs in PEARL to safeguard, preserve and provide access to a growing body of full text materials in the line with the University's Open Access policy. Information Specialists give discipline-specific advice on a broad spectrum of open research matters, including funder policies, open data, open author profiles and open licensing. The University provides up-to-date IT infrastructure, both in terms of hardware and software, for each staff member. Funding for unit-relevant databases, statistics packages and highly specialised software is available. The Seale Hayne Library is an excellent research library, with dedicated subject specialists comprehensively serving PBS. It provides access to approximately 80,000 current journal titles, 500,000 e-books and 350,000 books, and spends in excess of £200,000 annually on journal subscriptions for PBS. The School is located in its own building with office and teaching spaces as well as community areas. Close proximity between academic staff and research students fosters a strong community.

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

a. Supporting Collaboration

Through upwards and downwards management, the Faculty and PBS strategically facilitate and embark on national and international collaborations with academic institutions which best fit with our agenda of the pursuit of outstanding interdisciplinary research, as well as with businesses, public organisations, policy-making bodies and communities that improve the quality and reach of our impact. Sandpit events organised by the Associate Dean of Research (ADR) with Associate Heads of School for Research and Innovation (AHoS R&I) and the University's R&I Department further explore collaboration opportunities. The ADR coordinates research calls and expressions of interests across the Faculty and University to bring academics with similar

interests and relevant expertise together to form effective interdisciplinary research teams. Research calls and collaboration opportunities that fit our research agenda are distributed through the creation of a research hub (one-stop shop for research information). PBS supports this process through its interdisciplinary research structure, which provides quick access to relevant research teams and expertise. iSPER and TRGs/RCs/RIs have been playing a key role in facilitating collaboration across disciplines and countries through arranging conferences, workshops and seminars with collaboration partners and international speakers, and policy and business events with public and private stakeholders.

b. Collaboration and Contribution to the Research Base

Staff members at all levels collaborate nationally and internationally and contributed to the research base. The overwhelming majority of submitted research outputs have been written jointly with colleagues at other universities and research institutions (86% of submitted output), with 59% of submitted publications having co-authors at British institutions, 27% at European institutions outside the UK and 35% at institutions outside Europe. PBS academics have been part of large research consortia that have drawn on interdisciplinary expertise to address societal challenges. For instance, the Horizon 2020 project 'RUC-APS' (**Liu**) involves 19 partners from seven countries, such as the Chilean National Agriculture Institute (INIA, South America), the Business Federation of Agri-food of the Valencian Community (FEDACOVA, Spain), and Riviera Produce (farm, UK). Similarly, the projects 'BBDiag' and 'AiPBAND' have been conducted in collaboration with external partners such as UCL, Imperial College, and the Universities of Stockholm and Rome (**Liu**). The Comic Relief project 'Scaling an innovative supply-chain for poverty alleviation in Kenya' (**Duckett**) was jointly carried out with Newcastle Business School, Duchy College's Rural Business School and the Farm Shop Trust. When conducting research projects overseas, PBS academics have successfully collaborated with local partners. For instance, the ESRC projects 'Poverty alleviation and women refugees in the Middle East' and 'Conserving cultural heritage' (**Al-Dajani**) utilised the expertise of two organisations in Jordan, the King Hussein Foundation Information and Research Centre and TIRAZ, a centre dedicated to preserving Arab cultural heritage and living traditions.

The School's academics are affiliated with national and international institutions and are members of, and contribute to, a range of learned societies, professional associations, and research networks at all levels. Examples include: **Wang** is Affiliate Professor and Member of the Academic Affairs Committee of the Institute of World Economy at Fudan University in Shanghai. He is also Affiliate Professor at the Harbin Institute of Technology in Shenzhen and at IÉSEG School of Management in Lille and Paris. **Saundry** was appointed Visiting Professor at Manchester Metropolitan University, and so was **Lewis** at Massey University and Waikato University in New Zealand. **Lewis** is also Adjunct Professor at Cowan University in Perth. **Gauci** is Adjunct Professor at the World Maritime University in Malmö. **Agarwal** is Visiting Professor at the University of Technology in Mauritius. **Child** is Fellow of the British Academy and the Academy of Management, among others. He has also been Visiting Professor at Sun Yat-Sen University Guangzhou and Aalborg University. **Hurth** became Senior Associate of the Cambridge University Institute for Sustainability Leadership. **Haupt** is Research Fellow of CESifo Munich and a member of Committees for Environmental and Resource Economics and for Population Economics of the German Economics Association. **Ashby** is Fellow and former Chairman of the Institute of Operational Risk. **Moizer** was President of the UK Chapter of the System Dynamics Society. **Liu** sits on the Management Board of the Euro Working Group on Decision Support Systems within the Association of the European Operational Research Societies. **Megicks** served as Chief Examiner of the Institute of Marketing, the leading UK professional body in marketing.

Contributing to the research base, PBS members have hosted and organised various national and international conferences and workshops. For instance, **Dinwoodie** chaired the Annual Logistics Research Network Conference 2018 and **Liu** the International Conference on Decision Support Systems Technology 2016, both in Plymouth. Jointly with Li of Tianjin University, **Xu** coordinated the international Workshop on 'Strategy and policy innovation in supply chain

management under environmental pressure' in Tianjin in 2018, held by the British Council and the National Natural Science Foundation of China under the Newton Fund's researcher links scheme. **Moizer**, as President of the UK Chapter of the System Dynamics Society, organised a range of events and workshops, such as the workshops on 'System dynamics in climate change mitigation' at the University of Manchester in 2017 and on 'System dynamics and healthcare' at the University of Plymouth in 2018, and was a member of the Organising Committees for several other conferences. **Childe** was Member of the International Scientific Committees of the IFIP WG 5.7 International Conference on Advances in Production Management Systems 2017 in Hamburg and of the IESM International Conference on Industrial Engineering and Systems Management 2017 in Saarbrücken, among others. **Haddoud** has chaired the International Entrepreneurship Track of the Annual Conference of the Institute for Small Business and Entrepreneurship since 2016. **Lean** became Review Committee Member for the European Conference on Innovation and Entrepreneurship. **Paul** is Member of the Executive Advisory Board for the Asian Pacific Conference on International Accounting Issues.

The School's staff have also served as reviewers for funding institutions, including EU Horizon 2020 (**Liu, Virk**), ESRC (**Howell, Agarwal**), UKRI (**Karamperidis**), Islandic Research Fund (**Knight**), Swiss National Science Foundation (**Agarwal**), and for a wide range of top journals and publishing houses. They have also acted as external PhD examiners in the UK and abroad, for instance: **Agarwal** at the Universities of Exeter, Kent and Nottingham; **Childe** at Brunel University and University of Southern Denmark; **Lewis** at Cardiff University, Monash University in Victoria and the Universities of Bristol, Bergen and London Birkbeck; **Liu** at Loughborough University, Strathclyde University, the British University in Dubai and the University of Cape Town; **Wang** at SOAS University of London.

PBS academics have served in editorial roles of academic journals, including Production Planning and Control (**Childe**, Editor), International Journal of Entrepreneurial Behavior and Research (**Haddoud**, Co-Editor), International Journal of Decision Support Systems (**Liu**, Associate Editor), International Journal of Management Education (**Lean**, Associate Editor), Asian Journal of Business and Accounting (**Paul**, Associate Editor), Work, Employment and Society (**Saundry**, Editorial Board), International Journal of Gender and Entrepreneurship (**Al-Dajani**, Editorial Board), International Small Business Journal (**Al-Dajani**, Editorial Advisory Board), Management and Organization Review (**Child**, Editorial Advisory Board), Journal of Consumer Behavior (**Megicks**, Editorial Advisory Board), Social Business (**Megicks**, Editorial Advisory Board), and Asian Journal of Shipping and Logistics (**Roh**, Editorial Board Member).

c. Collaboration and Contribution to the Economy and Society

PBS academics have been involved in many research projects that provide an immediate contribution to the economy and society, whether it was building and scaling up an innovative, sustainable and economically viable rural distribution network and farm shops that benefited 56,000 farmers and the wider community in Kenya (Comic Relief project), contributing to cybersecurity for maritime logistics supply chains (Horizon 2020 project "Cyber-Mar") or providing the business underpinning for diagnostic tools for Alzheimer's disease and brain cancer (Horizon 2020 projects BBDiag and AiPBAND).

The School's staff have also collaborated with businesses and public organisations in KTP projects, thereby directly contributing to the development of the regional businesses and economy. For instance, **Childe** works together with Oakmont Control Systems, an industry leader in automation and engineering, to develop a methodology which allows Oakland to analyse its existing production systems and determine whether, and how, it should proceed with robotic automation. Similarly, **Butel** collaborated with Fowey Harbour Commission, a trust port, with the aim of establishing and delivering a business development and diversification strategy for the port of Fowey and proactively managing resources for commercial and societal benefit. This collaboration continued the partnership between the PBS and ports in the South West, based on our expertise in maritime economics, business and logistics. Jointly with SERIO, PBS academics have also contributed to projects with businesses and private organisations. For

instance, **Brand** shared his expertise with 'Power to Change' and evaluated the impact of the community businesses on the economy across England in a consultancy project for this third-sector organisation. He also conducted economic impact studies and economic modelling for Plymouth City Council, West of England Local Enterprise Partnership (LEP) and South West Water. In another project, **Paul** evaluated the Trade Credit Enterprise Finance Guarantee, a governmental scheme developed to help smaller enterprises by encouraging larger companies to grant more credit to SMEs, for the then Department for Business, Innovation and Skills (BIS) and the British Business Bank (BBB). The scheme was discontinued in response to its evaluation.

A number of PBS events have been geared towards decision makers in private and public organisations, providing expertise, assessments and advice on topical issues. For instance, the TRG 'Maritime and Logistics, Business and Policy' organised a Workshop on 'The practice of managing container flows' in partnership with the Chartered Institute of Transport and Logistics and the Nautical Institute. iSPER took up Brexit in its event 'Brexit: Meeting the challenge in the South West', which brought together an interdisciplinary team of academics and representatives of businesses and local authorities, exploring the practical implications of Brexit for the region. Brexit was also a prime topic in the Trade Summit, organised by the Institute of Export in partnership with iSPER, with PBS academics and businesses discussing the post-Brexit future of trade and Lord Stephen Green, former Minister of State for Trade and Investment, giving the keynote speech. In the iSPER event 'Good work Is...? The future of employment - research insights, debate and discussion on the future of work', **Saundry** brought together experts from PBS, the Chartered Institute for Personnel and Development (CIPD) and Acas, among others, to develop an agenda for good work in the South West. The need to effectively combat bullying and harassment in the NHS was explored in the workshop on 'Fight, flight or resolution? Managing conflict in the NHS', organised jointly by NHS employers and iSPER, with PBS academics **Saundry** and **Lewis** drawing on their expertise on bullying and harassment. The interdisciplinary iSPER conference 'Social, Policy and Enterprise Research in the Era of Globalisation and Discontent' brought together academics from human resource management and entrepreneurship to economics and criminology to discuss recent developments in research and their importance for the society in a public event. Other events in which PBS staff have addressed the needs of businesses and the wider public include 'Risk Culture in Financial Organisations', 'Realising sustainable business models' (sponsored by the Chartered Management Institute, CMI) and 'Engaging individuals in climate change'. The School's staff have also reached out to schools and pupils in interactive events such as 'Beating the bullies' and 'Bankers: the bad guys?', making research visible to future researchers.

PBS members have worked for professional associations and on expert panels and committees. At the international level, **Karamperidis** is Board Member of the Supply Chain Risk Industry Partnership and a Member of the Academic Board of the European Freight and Logistics Leaders Forum. **Childe** is Member of the UNESCO International Federation for Information Processing (IFIP) Working Group 5.7 on Advances in Production Management Systems. **Hurth** chaired the Expert Panel for Axis (Assessment of cross-sectoral climate impact and pathways for sustainable transformation) of JPI Climate, an initiative of the European Union member states and associated members. She became also ISO Project Leader and Co-Convenor for TC309/WG1 'Guidance for the governance of organizations' and member of the UNEP/UNCTAD Task Force for developing a methodology for Sustainable Development Goal (SDG) 12.6.1 (sustainability reports). **White** is Member of the Stakeholder Advisory Board for the EU Horizon 2020 project 'Strengthening European food chain sustainability by quality and procurement policy (Strength2Food)', which involves 30 partners. **Haupt** is a member of the worldwide panel of contributors to the ifo World Economic Survey (WES).

At the national and regional level, for instance, **Karamperidis** is a Member of the Business Models Board for the Scottish Institute of Remanufacturing and the Chair of the Chartered Institute of Logistics and Transport for Devon and Cornwall. **Knight** is Member of the South West Board for the Chartered Management Institute (CMI). **Brand** is invited member of the Industry Strategy Challenge Panel of the Dorset LEP. **Paul** is a Fellow of the Chartered Institute of

Credit Management (CICM) and the Institute of Credit Association and holds the CICM Chair. In recognition of her contributions to the credit industry, **Paul** was honoured as 'Woman of the Year 2019' at the annual Women in Credit Award, organised by Credit Strategy.