Institution: School of Management, University of Bath

Unit of Assessment: C17: Business and Management

1. Unit context and structure, research and impact strategy

Bath School of Management (SoM) continues to be research-led. This is not only a strategic aim, but also a deeply embedded and longstanding element of the SoM's identity and values. Our research capability is strongly evident across early-career, mid-career, and senior academic positions and in all our academic fields and specialisms. We sustain the future of business and management research through our doctoral training and extensive support for early-career academics. We collaborate globally, provide leadership to international research communities, and develop global research networks. We attract research income from diverse sources and engage with corporate, social and public organizations to enrich and enliven our impact with non-academic audiences. For three decades, the SoM has actively nurtured an inclusive, international and interdisciplinary research culture in which our academic staff generate intellectually ambitious and socially and economically purposeful outputs and outcomes.

The School's research excellence has been recognized in successive rounds of research assessment. We were ranked joint 6th in REF 2014 in terms of share of internationally leading and excellent research. This built upon being ranked 5th equal in RAE 2008, a rating of 5A in RAE 2001, and a rating of 5 in RAE 1996. Since 2014, we have further developed and extended our research-intensity and impact. For example, we are now at our highest ever level of resourcing of both individual research staff and our research environment, including the provision of funded doctoral studentships, databases, administrative support, impact and research funding. We are submitting a high volume of outputs that are novel, rigorous, and significant, while also maintaining consistent engagement and impact with our research partners. Our consistency has made Bath one of the leading research-intensive Management Schools in Europe. Evidence regarding the quality of SoM research is reflected in external rankings, such as the QS Business and Management Rankings 2020 where we were ranked 3rd in the UK for citations per paper (15th in the World) and 3rd-equal in the UK for the departmental H-index (joint 12th in the World). To sustain and enhance our future research environment, the University has invested £70 million in a new, dedicated SoM building, which has been designed with research at its heart, opening in 2021.

The SoM's research strategy is a process of continuous development, seeking to further enhance and extend our reputation for research and creating a supportive working environment. Our current strategy was developed by the senior management team of the School. It is managed by the Dean, the Research Committee and Executive Board. In implementing this strategy, we benefit from having a talented and committed faculty that actively co-create our research culture. Research as a collective community pursuit is underpinned by the equitable provision of research time and resources for staff at all levels, as well as a culture of collegiality and mutual respect. In REF 2014, we highlighted five underpinning objectives of our research strategy and have made strong progress in each of these areas:

1) *To produce world leading and internationally excellent research*: The School is submitting the largest number of faculty in our history, 94.7 FTE, an increase from 64.9 FTE in REF 2014. This growth in faculty has been accompanied by an increase in the quality of our outputs, demonstrated, for example, by an increase in the number of FT50 articles in our REF pool from 62 in 2014 to 141 in 2020. We have also increased the number of our outputs in the top 10% journal percentiles, as assessed in SciVal by CiteScore, from 133 to 314, over the past two REF periods.

2) *To maximize the economic, social and organizational impact of our research:* We continue to have a strong focus on creating economic, social and public value within businesses, government and charitable organizations. To this end, in 2015, we have revamped and enhanced our engagement and impact strategy, launching new funds that have directly supported almost half our faculty to expand their external outreach efforts. Our impact cases

stem from these investments and testify to our local and global approach to external engagement, including collaborations with medical professionals and social entrepreneurs in the southeast of England, civil servants in Whitehall and Cheltenham, central bankers in India, Germany and France, and logistics managers in the USA, Argentina, Finland and Taiwan.

3) *To generate research income from all available sources:* Over the REF window, we have grown substantially our external funding. We report research income in excess of £1 million per year over last four years, including a £1.5m donation from EDF for our Supply Chain Innovation Lab. In total, we secured £5.8m, and have a pipeline of £3m worth of new grants. To sustain these efforts, we increased our support for grant development, and embedded expectations for grant capture in our promotion procedures for senior faculty. We have also made strategic hires to build new, externally facing research programmes. For example, our investments in cybersecurity and health care operations have generated over £1 million funding in each of these areas.

4) *To support international scholarly contributions:* Our research is enabled through our collaborations with colleagues from around the world, and by our highly diverse faculty. As of July 2019, 65% of our faculty were born outside the UK, representing over 25 nationalities. This diversity is critical to the success of our research strategy because it enriches the range of our research perspectives and connects us to a broad range of communities. Since the last REF, our share of internationally co-authored papers has increased from 39% to 47%. Internationally co-authored papers account for 60% of our REF submission, up from 45% in 2014. To underpin these international efforts, we have increased our support for conferences, sabbaticals, events and workshops.

5) *To lead the development of doctoral and early career researchers*. We have expanded and redesigned our doctoral programmes, created new scholarships, and increased support for student and staff wellbeing and personal development. We have augmented our existing mentoring for early career researchers, created dedicated fellowships, increased seed corn funding, and introduced more flexible probation requirements.

Engagement and impact
Undertaking research that is purposeful and which seeks to generate benefits for business and society is central to our research strategy. The SoM has a strong history of research that shapes practice. Our engagement and impact strategy focuses on sustaining this goal through multiple channels:

- *Recognising that long-term relationships are key to achieving impact*. The School maintains relationships with private firms (e.g. EDF, Peak, YH Global); with public service institutions (e.g. Wiltshire Police, United Nations Capital Development Fund, Royal United Hospital); and with professional organizations (e.g. CIPD). Our impact cases attest to the value of these relationships, both as a source of behavioural change in our partners' practices, and as a source of intellectual challenge and renewal for our faculty.

- *Providing financial resources and administrative support*. In 2014, we appointed an Impact and Information Officer to work alongside faculty, to help them develop and gather evidence for impact. In 2015, we launched an Impact Fund, investing £50k to support engagement and impact. Since its launch, the fund has been popular with our faculty, receiving over 40 submissions, of which 75% were funded. This funding has directly underpinned our impact cases, providing resources and workload remissions.

- *Recognition that interdisciplinary research can open important avenues for impact*. Our researchers contribute significantly to the University's two interdisciplinary institutes: The *Institute for Policy Research* (IPR) and the *Institute for Mathematical Innovation* (IMI). For example, Fai spent six months working within the IPR developing an overview of local approaches to engaging with the UK Government's Industrial Strategy. Two of our Professors, Erdoğan and Zalewska are senior members of the IMI. In addition, over 20 staff from other University faculties participate in the School's Research Centres. The School is involved in various large interdisciplinary projects. For example, Tackling the Root Causes Upstream of Unhealthy Urban Development Decision-making (TRUUD) is a five-year project that brings together expertise from a broad range of disciplines, including urban planning, chemistry, economics and management.

- *Considering the potential for impact as well as excellent research in hiring*. Our strategic

investments in health care management, operations research and cybersecurity were driven in part by recruiting colleagues who have an impact on practice as well as academic communities. This investment has been rewarded by three impact cases from faculty working in these areas (Joinson, Vasilakis and Erdoğan) as well as numerous grants.

- *Rewarding and celebrating engagement and impact*. Impact is embedded in University probation and promotion processes that recognise impact and engagement as well as research outputs, and in the SoM workload model with significant remissions for impact case development. We initiated a new biannual Dean's Award for Engagement and Impact to recognize faculty achievements. For example, Leidong's work on the role of business schools in helping mitigate corruption in Africa was recognised in 2019.

- *Encouraging and supporting public engagement:* Through our Reserach4Good campaign, which highlights the positive difference through management research we have made via social media, press office and our website, we have increased the visibility and influence of our research.

Internal structures for supporting and developing our strategic research aims

Since 2016, SoM faculty have been structured into four divisions: Strategy and Organization (S&O), Information Decision and Operations (IDO), Marketing, Business and Society (MBS) and Accounting, Finance and Law (AFL). Each is led by a Head (HoD) with responsibility for the strategic and career development of faculty. Previously, the School was organised around teaching groups, but this approach did not ensure sufficient coordination with respect to research and faculty development. The divisions were created to enhance our research effectiveness by creating greater critical mass in our core research domains and by enriching scholarly communities within the School. To ensure this vision, teaching allocations were delegated to subject group leads, freeing up the time of HoDs to focus on research and faculty development. The divisions are not autonomous departments, which helps to ensure that the research practices and culture of the School are consistent and commensurate. Our research centres (described in Section 3) cut across these divisions, drawing together and integrating expertise from each.

The **Strategy and Organization (S&O)** division was created through a merger of the Organization Studies and Strategy and International Management groups. As a result of its research strengths, S&O has expanded to 39 academic staff (30 were included in REF 2014), supported an ambitious investment strategy in leadership and development. We added new professorial roles and recruited outstanding replacements (Adam, Dahlander, Giarratana, Giorgi, Harding, Maclean, Obodaru); talented and highly productive early career researchers have been recruited (Baruffaldi, Brewis, Defazio, Failla, Gustaffson, Liedong, Mughal, Salandra, Zhang); and outstanding mid-career researchers have taken up their first position as senior lecturers/readers (Barzotto, Bui, Herepath, Qin, Richards, Rofcanin, Soundararajan and Stoyanov).

Research in S&O is organized around three major themes: *entrepreneurship and innovation; identities, people and work; and management and leadership*. Research in *Entrepreneurship and Innovation*, an area that has been significantly strengthened since REF 2014, focuses on identifying and utilising new ideas for commercial and social gain, in the context of new and established organizations. Notable academic and practical contributions to an understanding of entrepreneurship and entrepreneurs include: insights into the role of families (Richards), international mobility (Stoyanov, Baruffaldi), founders' networks (Zhang), opportunity recognition and design thinking (Dimov), scientific collaboration (Dahlander), exit modes (Marsili), careers (Failla), returnees (Qin), and crowdfunding (Defazio). Our work on innovation in established firms has made significant contributions to open innovation and networks (Dahlander, Salter), diversification (Giarratana), university-industry collaboration (Salter, Salandra), and service innovation (Desyllas). Our Social Enterprise and Innovation Programme (SEIP) grant, led by Dimov, generated over £16.3 million in economic impact, supporting hundreds of social enterprises in the southwest of England (see REF impact case studies (ICS)).

The *Identities, People and Work* research stream explores how organizations, and the people who work in them, perform, develop and change. There are two sub-themes: Human Resource Management (HRM) and Identity. Research in HRM has generated insights into daily practices,

such as how to develop reward systems that will motivate staff (Rofcanin), engage staff's commitment (Yalabik), and develop intellectual capital to improve performance (Swart). Our research has shown how existing HR practices are challenged by new conceptualisations of careers and their evolving lived experience (Chudzikowski, Gustafsson). The SoM is a global centre of excellence in research on identity (Brown, Adam, Gabriel, Giorgi, Harding, Obodaru), which has now been housed in a new research centre. In 2020, Brown edited a major international research retrospective on identity: *The Oxford Handbook of Identities in Organizations*. The School also specialises in research into contemporary social issues associated with identity. These include gender (Harding); ethnicity and race (Brewis); the hegemony of the global north/agency of the global south (Soundararajan); and practical ways of challenging corruption (Liedong).

The third major research stream in S&O is *organizations, management and leadership*. Faculty have contributed to the development and implementation of organizational strategies (Mayer); the psychology of decision-making (Gore); professional roles (Gustaffson); the management of change in complex organizational environments (Colville, Herepath); and the ongoing challenges of organisational learning (Mughal, Swart). The School produces cutting-edge research on leaders and leadership. This includes contributions to understanding leaders' experience (Maclean), leadership practices (Gabriel, Harding, Mughal, Rofcanin, Bui), leadership psychodynamics (Gabriel, Vince), and leadership in its social and political context (Harding, Mughal, Vince). Research into management and leadership is set into the emotional, social and political context of organizations, as well as the complexities of human behaviour and action that are integral to peoples' experience of organizations/organizing. Studies have contributed to our understanding of organizations as irrational as well as rational places (Vince), as infused with emotion (Adam, Gabriel, as challenging environments for sense-making (Colville), and as sites of control and resistance (Harding). Broader issues have been explored in relation to the impacts of philanthropy (Maclean), and how culture has been theorized and applied within organization studies (Giorgi). This stream sustains a wide range of productive links with external organisations. For example, Herepath's work with the NHS has a particular focus on patient safety, seeking to identify ways of reducing infant mortality rates. Gore draws on research in decision psychology to advise UK public sector organisations such as the Ministry of Defence, Department of Work and Pensions, and the Centre for the Protection of National Infrastructure (CPNI).

The core strengths of the **Information, Decisions and Operations (IDO)** division are in Information Systems (particularly cybersecurity); Decision Sciences and Operational Research; and Operations Management. The division, which has 19 academic staff, has a long history of scholarly excellence in operations and supply chain management. IDO has an established reputation for forecasting (Meeran and Petropolous) and operations management (Lewis, Brandon-Jones, Squire). Research in supply chain risk management (Squire) has led to IP Licensing agreements and was influential in the SoM's engagement with the EDF/Hinkley Point project (a major new atomic power station in Somerset). This group has contributed to understanding improved operations in professional services (Brandon-Jones and Lewis), contracting and procurement (Roehrich) and sustainability (Yalabik). Warehouse automation and logistics integration is a major focus for Giannikas, underpinned by grant funding from YH Global, Boeing and the British Academy, which is now housed in a new research centre: Smart Warehousing and Logistics Systems.

Since REF 2014, there have been three major developments in IDO. First, the Information Systems portfolio has been extended to include understanding, mitigating and countering threats to individual, organizational and national security. Joinson leads an interdisciplinary team delivering 'Understanding and Countering Online Behaviour' within CREST (Centre for Research and Evidence on Security Threats), which is funded by UK security and intelligence agencies. The research team was awarded EPSRC funding (jointly with the University of Bristol) for a new Centre for Doctoral Training (CDT) in Cyber Security (TIPS-at-Scale) in 2018, as well as leading the EPSRC 'CyberSecurity Across the LifeSpan' (cSALSA) project, launched in 2017. The research has generated broader impact through its work to mitigate phishing (REF ICS). Its research on wearable technologies (Piwek, Ellis and Joinson) and research into 'security nudges' (Hinds) has

also received extensive media attention.

Second, there is a strong behavioural aspect to IDO research. Experimental work has informed operations, supply and project-related research. For example, EDF donated £1.5 million to establish a Supply Chain Innovation Lab (SCIL) to support engaged scholarship and behavioural, experimental work. This aligns with wider School developments, including a state-of-the-art behavioural laboratory as part of the new building. It extends existing research to create experimental scenarios to better address judgmental bias and heuristics. For example, Petropolous' research in forecasting has been incorporated in Fiddlehead's leading forecasting software, which is used by top international organizations, including McCain and Pepsico. Also notable in this respect is Lewis' recent research, part of the Cabinet Office Project X collective. The ESRC-funded Improving Project Delivery grant with Project X has led to the joint appointment of a PDRA and a PhD student with Cabinet Office experience. Further, Lewis was recently invited to give evidence to a House of Commons committee (PACAC) investigating UK project performance.

The SoM made a strategic decision to develop capability in Operational Research. The recruitment of established scholars (Erdoğan, Battara, Laporte, Çelik) and ECRs (Sanci and Şafak) has created a strong focus on routing and optimisation. For example, Erdoğan's open source VRP solver has been downloaded over 10k times and has generated over £2.0m in direct impact on business (REF ICS). Further excellence in operations research has been generated through the Centre for Healthcare Improvement and Innovation (CHI²), led by Vasilakis. CHI² works with a wide range of local care providers to marry simulation and modelling with clinical knowledge. To facilitate awareness of these tools and their use in practice, it developed a MOOC, which has over 12k active learners across more than 100 countries (REF ICS).

The **Marketing, Business, and Society (MBS)** division brings together an interdisciplinary group with backgrounds in business ethics, marketing, business economics, retailing and social psychology. Staff have a common interest in how their sub-disciplines interface with contemporary issues in society. MBS has 27 academic staff. Recent, strategic, professorial appointments have strengthened research within MBS on the themes of business and society (Crane, Brammer), consumer behaviour (Puccinelli), and retailing (Grewal, Nordfält).

MBS delivers on three core thematic areas of research: *business and society*, *marketing*, and *regional development and governance*. *Business and Society* supports business to be a force for social and environmental good. The Centre for Business and Society (CBOS), led by Crane, Glozer and Ward-Grosvold, has sustained a leading international profile in business and society research over the past twenty years (with key contributions from Brammer, Bondy, Hielscher, Iatridis, Millington, Pavelin, Porter, Rayton, Snelson-Powell). Its aim is to rethink the role and responsibilities of business in creating a sustainable society, and to provide a theoretically and empirically robust evidence base to help translate these ideas into practices. The SoM is consistently ranked among the global leaders in Corporate Knights' Better World ranking of Business Schools. In 2020, we ranked third in terms of sustainability across all business schools, including third for share of publications in sustainability per faculty and for the number of citations to those publications. In 2016, CBOS was relaunched and expanded in size and scope, more than trebling its number of faculty members from the School. It has affiliate members from other Faculties across the university, and 13 associate members from across the globe.

Since 2014, research expertise within the broad area of consumer research has been consolidated. To complement the group's long-standing strength within consumer culture theory (Hill, McDonagh, Shankar, Nuttall, Stevens), the SoM invested in the development of research expertise within consumer behaviour and retailing (Ahlbom, Desrochers, Grewal, Hang, Ikonen, Nordfält, Puccinelli, Simonyan). Research on marketing has made contributions to: (1) understanding consumers' experiences of contemporary marketing and consumption related phenomena through the lens of social and cultural theories. For example, the reproduction of wedding rituals in same-sex marriages (Stevens); and the nature of consumer activism in a digital era (Hill); (2) using psychological theories and methods to unpack social issues, for example,

charitable giving (Simonyan), healthy eating in children (Hang) and childhood obesity (Desrochers); and (3) practice-led, applied marketing research particularly within retailing. For example, our research has explored the role of new, in-store technologies in shaping consumers' experiences of retail environments and shopping experiences, through large-scale field studies (Nordfält, Grewal and Ahlbom).

The third research theme in MBS is *regional development and governance*. Research in this area has addressed issues of governance and social relations. For example, studies on migrant workers and biases among entrepreneurs (Dawson), and wellbeing and pay differentials between heterosexual couples (Sydra). A characteristic of this research is its pragmatic and applied nature. Tomlinson has worked with the British Ceramics Confederation (BCC), Lucideon and the North Staffordshire Chamber of Commerce (NSCC) on issues relating to the development of Stoke-on-Trent's ceramics industrial district, producing two highly regarded industry reports on: (a) inter-firm governance and networking, and (b) the impact of attending international trade fairs to stimulate innovation within the district.

The **Accounting, Finance and Law (AFL)** division has 15 academic faculty. The SOM's strategic aim for AFL has been gradually to increase its research power, as well as diversifying the range of research interests and topics of the division. Since 2014, two new professors have been appointed (Gounopoulos and Newton), as well as five new senior lecturers and lecturers (Hassanniakalager, Huang, Platanakis, Sun, Xie). AFL's research focuses on the operation of financial markets and accounting practices, such as regulation (Zalewska, Cooper), valuation of derivatives (Newton), risk and insurance (Adams), insider trading (Sun), Quantitative Easing (Sun, Tonks), Fintech (Platanakis), network risks in financial systems (Giansante), negative interest rates (Xie), reporting practices (Perotti, Lennox and Tsoligkas), SME performance (Liu), gambling markets (Hassanniakalager), and venture funding (Gounopoulos, Fairchild, Huang). To underpin research in this area, the School increased its expenditure in accounting and financial databases, tripling the amount spent to £400k annually.

In addition to producing high quality research, a particular strength of the AFL division is its impact, producing significant benefits for non-academic audiences. For example, Zalewska's work on the market risk of utilities played a significant role in changing the UK Government's regulatory responses to achieving Net Zero 2050 targets by lowering cost of meeting renewable targets and improving the mix of renewable energy generation (REF ICS), leading to a major expansion of funding for renewable projects in successive rounds of funding. Giansante's work on network risks in financial systems has been developed and implemented in collaboration with the Reserve Bank of India, leading the Bank to develop a new monitoring and reporting system for assessing systemic network risks in the financial system (REF ICS). More recently, Xie's research into negative interest rates showed that although these rates were intended to spur economic development, they have instead depressed economic activity. This work received significant media and policy attention, including CNN Business, NBC News, MSN News and 120 other outlets and presentations to central banks.

Future strategy
The SoM's future research strategy aims both to ensure the sustainability of longstanding sources of achievement and to significantly extend the vitality of our research activities. The growth of the SoM accompanying our new building, and its cutting-edge research and engagement facilities, will provide opportunities to increase our research influence and impact. We aim to improve global recognition of our research by obtaining a top 50 global place in the QS ranking for business and management and by enhancing our research translation and engagement activities. To achieve our goals, key strategic initiatives include:
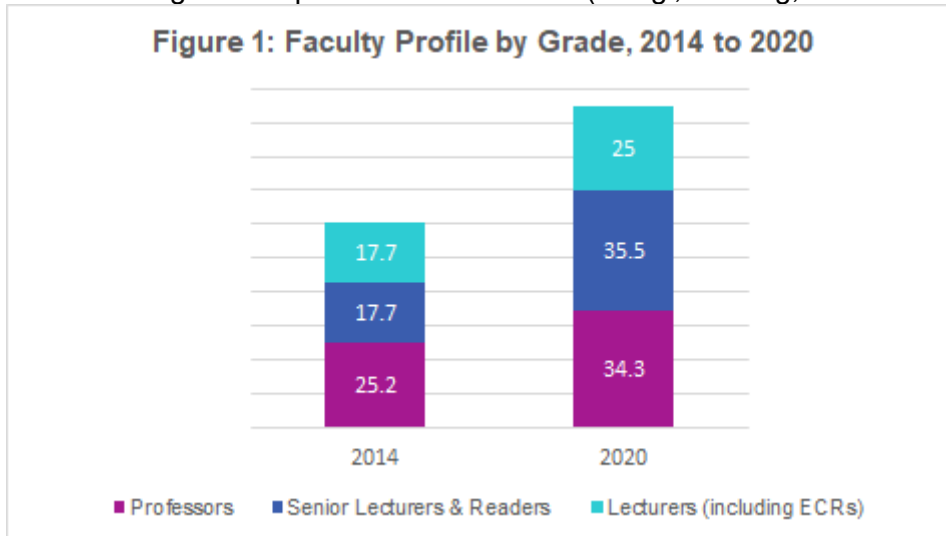1. identifying and more intensively resourcing areas of international research excellence, building critical mass in order to enable us to achieve global reach and impact;
2. cementing the SoM as a leading source of purposeful research that proactively and positively impacts business and society locally, nationally, and globally by increasing resourcing for research co-creation, translation, and communication, especially our Research4Good campaign;

3. investing more heavily in a larger community of doctoral and early-career researchers, deepening our commitment to the next generation of business and management researchers and improving our capacity to offer world-class theoretical and methodological training; and

4. actively deploying the new specialist research laboratories and engagement facilities in our new building to extend our interdisciplinary research activity, hosting more major national and international conferences and events, and scaling-up our engagement with external communities. Alongside these initiatives, continuity of our research efforts will be maintained by providing enhanced research support to all staff, sustained investment in excellent staff at all levels, and the active recruitment and development of individuals with the highest research and impact potential from a diverse range of backgrounds.

2. People
Staffing strategy and staff development

Since 2014, we have recruited and developed a mix of experienced and new-blood professors, mid-career researchers on fast-track development to senior academic positions, and promising early career researchers (ECRs) (see Figure 1). Research is an essential component in all our faculty hiring, as we seek to attract the best talent from a diverse range of backgrounds and heritages. The Associate Dean for Research, as well as Deputy Dean and/or Dean, sits on all hiring panels. We value the input of all colleagues in hiring decisions, and potential candidates present their research to all members of a division who then provide feedback and guidance to the hiring panel for each candidate. In total, we have renewed our faculty with 62 appointments, of which 18 were ECRs and 28 who identified as women. We have recruited like-for-like replacements for key senior retiring or departing staff, such as Gabriel/Giorgi, Kinnie/Adam, Millington/Crane, Pitelis/Maclean, Hope-Hailey/Obodaru, and Balogun/Harding. This strategy has helped us to sustain our faculty research strength, particularly in organization studies. We have recruited four outstanding women professors in this area (Giorgi, Harding, Maclean and Obodaru).

Figure 1: Faculty Profile by Grade, 2014 to 2020

	2014	2020
Lecturers (including ECRs)	17.7	25
Senior Lecturers & Readers	17.7	35.5
Professors	25.2	34.3

We are also keen to ensure that our staff have a clear pathway to reach their career aspirations with us. Our track record demonstrates this: since 2014, we have had nine Professorial promotions and ten promotions to Reader and Senior Lecturer. Promotions to senior positions are considered by the University's Academic Staff Committee, adhering to a clear career progression framework and well-developed set of criteria. This framework enables individuals to showcase and be rewarded for different aspects of their contribution, including research and impact, teaching, and leadership and management.

As a baseline for research excellence, we continue to guarantee equal research time and resources for all research-active faculty. Where desired by staff, workloads are skewed so teaching responsibilities are concentrated in one semester or concentrated periods, thereby ensuring significant blocks of time are available for research. In 2020, 61% of our faculty had single semester and/or concentrated teaching workloads. All staff have an allowance of 600 hours per year for research (pro rata for part-time members), as well as a significant number of hours

for internal and external academic citizenship roles (e.g. external examining, reviewing, conference, seminar and workshop organisation). PhD supervision is allocated to teaching and learning workload. Overall, these measures ensure that staff have roughly 50% of their individual workloads dedicated to their own research and academic citizenship.

All staff undertake an annual Staff Development and Performance Review (SDPR). SDPRs provide staff with the opportunity to: receive feedback on their research performance; discuss and set objectives for the coming year; and explore and support their learning needs and career aspirations. They are designed to give balanced and constructive feedback, enabling reflection that underpins the development of each individual's research and professional goals. Professional development is balanced with a family friendly approach. For example, our workload model provides a 50% remission from teaching in the year faculty return from family care leave. Similarly, the SoM supports requests from staff to adjust their working hours after a period of leave for caring or health reasons.

Examples of strategic investments in individual's research
We have increased investment in the resources available to all faculty. Our approach is based on positive incentives, with additional funding directed to individual's personal research accounts to ensure that these resources are reinvested in achieving the School's research strategy. Specifically:

- We increased each faculty member's annual conference budget from £1.5k to £2.5k. We also enable faculty to pool these funds over two years.
- We have extended our recognition scheme for outputs in top-tier journals. We offer transfers into individual research accounts for R&Rs and acceptances at leading journals on a sliding scale up to £3k, while capping the total amount of funding an individual can receive in an academic year at £5K. These transfers have encouraged staff to be ambitious in their individual publication strategies. Since extending our incentive scheme in 2017, we have made 251 transfers to faculty totalling £223k. Over 70% of eligible faculty have benefited from the scheme.
- We have increased our annual seed corn funding available for faculty, which supports research projects and events, from £10K to £25K'. We particularly encourage early career staff to apply. These funds are allocated through biannual internal competition overseen by the School Research Committee. In total, we have awarded 61 seed corn grants.
- We have obtained financial support for replacement teaching costs from the university for six month and year-long sabbaticals and locally funded study-leaves. In total, we secured 24 sabbaticals/study leaves between 2014 and 2020, the equivalent of 16 years of additional research time over and above our normal workload allocation. This equates to roughly £1.3 million in additional investment in research during the REF period.
- We have developed a remission scheme for leading international journal editorship roles, providing 150 hours of relief from teaching and administration duties.
- We have revised our reward scheme for grant capture, providing greater resources to individuals to take time off from teaching and administration to develop grant proposals and conduct the associated research.
- We now fund an external professional proofreading service, focusing these resources on early career researchers and/or those who are non-native English speakers.
- Where levied, we pay for all initial submission fees (and for subsequent rounds of review) for leading journals.

Support for Early Career Researchers
We have identified and recruited high potential early career researchers, as well as improving our support for these individuals once appointed. We have 18 early career researchers, which constitutes 19% of total faculty. These staff have joined us from leading institutions, such as Yale, Imperial College, École Polytechnique Fédérale de Lausanne, Cambridge, Copenhagen Business School, Michigan, Warwick and UCL. ECRs make an important contribution to our REF pool, accounting for 15% of outputs. We support ECRs in the full knowledge that they will be the research leaders of tomorrow. Newly appointed ECRs undertake a three-year probation, with

objectives co-developed by the probationer and the relevant HoD and supported by a personal development plan that is updated annually. The specific measures we have taken to extend and enrich our support for ECRs include:

- *Prize Fellowships.* We have drawn on a University-wide initiative to create six new Prize Fellow positions for ECRs. These Fellowships provide two years of dedicated research time (without teaching) prior to beginning probation. In addition, Prize Fellows participate in a university-wide scheme of mentorship, peer exchange and development.
- *Revised probation expectations.* We have revised our probation requirements to reduce teaching expectations and to be more flexible in terms of research outcomes. In terms of teaching, we use peer assessment and support married to student feedback to look for developmental improvements. In terms of research, we extended the ways in which staff can realize research expectations during their probation, enabling them to achieve the standard through two internationally excellent outputs or one internationally leading publication over three years. We also now encourage and recognize potential impact (in terms of social, economic, policy, or other benefits) of the ECR's research. This approach rewards them for being ambitious. In addition, we have been flexible in granting additional years of probation to ECRs who are making progress but need require further time to demonstrate their research capability.
- *New induction, training and support programme.* We have put in place a revised induction programme to help ECRs settle in. It provides an overview of all university facilities and resources, the organization of the School, including the teaching expectations and procedures, as well as an overview of our research strategy, ethics and support from the Research Office.
- *Pathway to HEA Fellowship for Probationary Lecturers.* Each probationary lecturer participates in a two-year development programme, supported by the Teaching and Learning Office of the University. As part of this programme, ECRs are trained in teaching methodologies, given peer mentoring and support on their teaching, and advice and training in dealing with students. Successful completion leads to HEA Fellowship.
- *Remission for early career academics.* We provide each probationary member of staff with a significant remission (20%) from their annual teaching workload.
- *Profile raising.* We work to promote the research of our ECRs in our media, impact and engagement efforts, and research events. For example, Ahlbom's research on the impact of mobile use while shopping at sales was covered by over 30 different international media organizations.
- *Mentoring and advice networks.* We are proud of our mentoring support, which is overseen by our Associate Dean for Faculty and HoDs. Each ECR has two mentors, one for research and one for teaching. Mentors are outside of the formal line of reporting and provide personal feedback and support.

Specific support for Post-Doctoral Researchers (PDRAs)
The University holds the HR Excellence in Research Award, which reflects our commitment to support researchers throughout their careers, implement the Concordat to Support the Career Development of Researchers, and, implement the Vision for Research Staff working at the University. To reflect this commitment, we offer extra support, training and career development when PDRAs are appointed, encouraging them to participate in the University's Academic Career Academy, which is an intensive and practical programme to explore the big picture and detail of academic jobs. We have also been keen to appoint internal PDRAs to open faculty positions (Piwek and Hinds). To help build their research independence, PDRAs are encouraged to spend up to 10% of their time on their own research.

Seminars and workshops
The School runs an extensive range of seminars and workshops with internal and external colleagues. We allocate £20k annually across our divisions to support seminars, and each division has a seminars organizer. Logistical support is provided by the School Research Office. Seminars reflect the extensive, international academic networks of our staff. They are widely advertised, and open to both faculty and doctoral students. In total, we hosted 278 seminars between 2014 and 2020, drawing speakers from 160 different institutions and 30 different countries. During the Covid

crisis, we shifted to online events, maintaining the same intensity of activity as before the pandemic.

Equality and Diversity
Diversity is critical to the success of our research strategy because it enriches the range of our research perspectives and connects us with diverse communities across the globe. The SoM has faculty from a wide range of backgrounds, perspectives and heritages. Our global approach has created a highly diverse faculty, with 65% of our staff born outside the UK. A high percentage of our faculty have foreign language skills (80%) and international work experience (85%).

Across the University, we have well-defined and frequently updated policies on Trans Equality, Dignity and Respect, Recruitment and Selection code of practice, Flexible working hours scheme, Maternity rights, Occupational Stress Management and Childcare. The University's Dignity and Respect policies apply to all staff, students and third parties. Mandatory online training on 'Diversity in the Workplace' and 'Unconscious Bias Training' is required for all managers and interview panel members. University EDI support of staff includes the LGBT staff network, the Disabled Staff Support group, the Carers Support group and the Race Equality Task group. In 2019, the University established a Gender Pay Gap Working Group (chaired by Marsili), jointly with the Trades Unions, to investigate gender pay gaps and to identify systemic causes that might be addressed. As a result, an action plan, which focuses on recruitment and progression, was developed and is being implemented. The University has also launched a network of Staff Wellbeing Champions in 2019 to support initiatives and signpost resources, including the appointment of a Wellbeing Champion for the School.

In this context, the SoM has given significant attention to improving our gender equality. The School has benefitted from having a strong group of women academic leaders, including our Dean from 2013-2019 (Hope-Hailey). Five of our eight research centres, and two of our four divisions are led by women. We have an ongoing and comprehensive strategy to further improve gender equality, a strategy that been recognised through the award of Athena SWAN Bronze in 2019. The application itself enabled an extensive appraisal of current practices within the School. Equality and inclusion themes are a standing item on the School's Executive Board agenda, are regularly discussed at School Meetings, and consistently monitored through data monitoring and staff surveys. The SoM is working through a five-year equality and diversity action plan, led by our Athena SWAN Implementation Committee, co-chaired by two senior professors (Marsili and Lewis).

The action plan focuses on:
- *Recruitment* – We have developed a recruitment and promotion plan for women staff, especially to senior positions, in each division. We have increased the diversity of our recruitment panels by involving all staff in recruitment planning and process, lowering our reliance on several key women professors. We have also grouped available positions by advertising them simultaneously, where appropriate. This has increased the possibility for us to hire academic couples, five of which have joined the School in recent years.
- *Appraisal and promotion* – We have provided increased support for women's promotion applications, including workshops with key figures in the university to improve understanding of expectations. Special circumstances are clearly highlighted in promotion applications and an HR representative attends all senior promotion meetings.
- *Building a supportive workplace* – We negotiate bespoke contracts and working arrangements for staff wishing to work part-time or flexibly, for example enabling remote working for a staff member whose family commitments have moved them away from Bath. We schedule all formal meetings within core working hours. Staff may additionally request particular hours of the day or week to be blocked out to accommodate their caring responsibilities. We also make significant adjustments for 'at risk' staff, those with significant caring responsibilities, and for ECRs. To raise awareness, all members of the Executive Board attended 'Bringing in the Bystander' training course to engage stakeholders in issues of sexual violence, equip them with skills to identify and intervene safely in risky situations, and build empathy for survivors of sexual violence.

- *Ensuring balance* – We always seek gender balance on major School committees and have improved the gender balance of our Advisory Board. We have also sought to ensure gender balance in our internal and external seminars. We audited our promotional/web materials to ensure that they reflect the diversity of our faculty and students.

Support for staff with protected characteristics, whose needs can be diverse, is provided on a case-by-case basis with guidance from the University's Occupational Health team. This support includes workplace assessments, training for staff working with others who require more support (e.g., neuro-atypical staff and students), training for staff with a disability where indicated by an Access to Work assessment, Personal Emergency Evacuation Planning, and reasonable adjustments developed on the basis of Access to Work assessments and on a case-by-case basis through discussion with affected staff.

The SoM's REF submission has been based on the University's 'Research Excellence 2021 Code of Practice', ensuring that the procedures used in preparing this submission were consistent, transparent, accountable, and conducted in an inclusive manner and in accordance with our institutional values and existing policies, including Equality and Diversity policies. To check whether the outcomes of our scoring reflected these procedures, we conducted a statistical analysis of the internal output scoring for our REF pool by gender, nationality and BAME. It showed that women received almost identical scores to men of the same grade and represented a proportionate share of outputs included. In addition, the scores assigned to outputs of UK/non-UK nationalities and BAME/non-BAME were also consistent by grade, as was the proportion of total outputs. In total, we found no statistically significant differences between the output scores for any of these different groups.

Supporting the development of Postgraduate Research (PGR) students
Our research-led environment provides a stimulating and robust setting for PGR learning and for the effective education of future business and management scholars and leaders. The School is a member of the ESRC funded South West Doctoral Training Partnership (SWDTP), an internationally recognised centre of excellence. In 2017, the University created the Doctoral College (DC), a cross-faculty function that provides guidance and support for PhD students and supervisors across the University. The DC coordinates the recruitment and induction of students as well as University-wide training, including research ethics and data management. Within this context, the School runs an 'integrated' PhD programme for full-time students (a 1 + 3 model), which is tailored to the skills and knowledge expected for an academic career. The programme, led by Thompson, is staffed by members of the School's Professoriate, reflecting a high level of expertise across a range of philosophical, quantitative and qualitative research methods. It has a strong taught element and is designed to attract and train exceptionally qualified and strongly motivated individuals from around the world who want to excel in careers as professional business academics. Our PGR students are funded through ESRC Studentships, University Research Studentships, Overseas Research Studentships and Knowledge Exchange Partnerships. In addition, the SoM currently supports 22 research students per annum on enhanced, four-year Graduate Research Scholarships (GRS), which fund full-time research towards a PhD and include a teaching requirement and associated training.

In total, the SoM graduated 129 students over the REF cycle (equal to 122.9 FTE), including 30 professional doctorates. Of these, 60% were women and 65% described themselves as BAME, hailing from dozens of countries across every continent.

Table 1. Number of doctoral degrees awarded by year

Degree type	2013/4	2014/5	2015/6	2016/7	2017/8	2018/9	2019/0	Total
Professional doctorate	2.5	9.5	5.9	5.1	3.2	2.3	1.9	30.4
PhD	14.7	9.3	12.8	7.3	15.8	15.8	16.9	92.5
Total	17.2	18.8	18.7	12.4	19.0	18.1	18.8	122.9

The School is an exemplar of PGR employability. Since 2014, 65 PhD students trained at Bath have been employed in Business and Management Schools within the UK and internationally. For example, our students have taken up academic posts in Cambridge, Cardiff, Warwick, Lancaster, Liverpool, Southampton, Kent, and Aberdeen Management Schools; as well as at Universities in Argentina, China, France, the Netherlands, Oman, Sweden, Taiwan, Thailand and Turkey. Two of our PhDs have taken up roles in the Thai and Malaysian governments.

PGR employability stems in part from our highly selective approach to PhD recruitment. Between 2014 and July 2020, the School accepted 132 doctoral students from 1810 applications. An active PGR student community is central to our underlying ethos for the support and development of excellent reflective business school academics and management practitioners. Figures evidencing the importance the School places on doctoral training include, for example: (i) the annual value of our doctoral scholarships is approximately £453k and (ii) over the REF period, we have invested close to £2 million in supporting and developing PGRs.

Support to PGRs: our support for PGR students is designed to help them become an integral part of the academic community. The University's DC provides full time support for the well-being of students and supervisors throughout the whole postgraduate experience. We have several students with disabilities who are continuously supported by the DC and the well-being services on campus. Students with disabilities are encouraged to speak to a dedicated advisor within the university disability team who can help them to undertake a *Disability Action Plan*. The action plan is tailored to the individual to ensure they get the support they need. International students can work with the *International Experience Coordinator* in Student Services who can offer bespoke advice. Sessions in induction are arranged to inform international students of life in the UK and to help them settle in. Student Services also have a dedicated *Wellbeing Team* to support PhD students at the University. To help our students during Covid, we have granted them a four-month automatic extension to their studies, with funding to match for all those eligible and applying. Further extensions of time and funding are currently in process.

We facilitate appropriate collegiality between faculty and PGR students in a variety of ways. We have made changes in physical space – by co-locating PGR and staff offices. The research centres lead monthly reading groups where faculty introduce three seminal works from their field for discussion with PhD students to encourage students to gain critical exposure of their work both at Bath and internationally. We provide funding for all PGR students to present at international conferences. We have an annual, internal, student-led PhD conference (now in its 9th year) where students present their projects to other students and faculty over two-days. We have a monthly PhD seminar series where students present to each other in preparation for PGR presentations at the regular staff seminar series run by research centres and groups. Our new building co-locates doctoral students and supervisors in adjoining spaces.

We ensure that all PGR students have active and engaged supervisory teams of at least two and preferably three members of staff. The practice of supervisory work in teams allows us to extend the range of supervision and to provide mentoring to junior faculty on good supervision practice. In addition to generic supervisory training provided by the University's Doctoral College, we have introduced a School supervisory training course to train faculty in approaches specifically to business/management.

Our support to PGR students ensures that they have strong and highly competitive career prospects. We have adapted our PhD format and submission criteria to allow for an 'alternative format' in which a PhD document is present in a multiple-paper form with an overarching thematic commentary, meaning students have already produced and usually submitted papers for review before their viva. We also focus on pedagogic training to prepare PGR students for the business and academic world, with more than half of students teaching at Bath during their tenure here.

3. Income, infrastructure and facilities
Income

Since REF 2014, we have increased our externally funded research, a key objective of our research strategy. In total, we secured £5.8 million in grant income, from a wide range of sources. Our highest annual grant income figures were achieved through the years from 2017-2020. In addition, we have secured £3m in new grants for the next REF period. To support our efforts, the School has augmented the capacity of our Research Office, which works alongside central services to provide all aspects of research support. Investment during the REF period has included hiring a full-time Research Manager, increasing the hours of our Research Support Administrator, and adding a new full-time position to support research events and research content. This has enabled us to increase the visibility of our research efforts internally and externally. We created a monthly research newsletter, showcasing the achievements of our faculty and highlighting funding opportunities. Our dedicated SoM marketing team track and celebrate media interaction and public engagement activities undertaken by our faculty, and actively support events that develop and enhance our research culture.

In direct support of research income generation, we offer our faculty remissions in the School's load model, as well as seed corn funding to develop large grant applications. Our appraisal process is partly focused on planning for grant income applications for the coming year. The University has revised its promotion guidelines for Professor and now requires candidates to demonstrate grant income consistent with their discipline. We also provide an incentive transfer of £1k into individual's research accounts for preparing large grant applications.

Our grant funding approach is deliberately focused and direct. We proactively identify relevant funding opportunities and align our staff to them. Recently, we have invested in the themes: modern slavery, cybersecurity and global supply chains. We have seen significant success in these areas, with funding from the ESRC, EPSRC, British Academy, the Global Challenges Research Fund and Newton Fund. On average, we conduct three school focused workshops per annum on funding opportunities, events that include input from external speakers, internal academics with a strong track history of attracting grants and research support staff. The research office undertakes the administrative duties associated with applying for grants, such as costings, liaising with external partners, coordinating the review of applications and being the point of contact for data sharing agreements and contract negotiations. It also takes the lead on responding to complex requirements associated with access to government funding on security and defence research. For example, we are members of the Human Social Science Research Capability (HSSRC) framework with BAE Systems as its prime contractor, which provides access to external human, behavioural and social sciences research for the Defence Science and Technology Laboratory (Dstl), MOD and other government departments.

The University's Research and Innovation Services (RIS) provides comprehensive support for anyone putting together a large bid. For fellowship applications, a cohort model operates, with guidance over a 12-month period to support academics in every aspect of a large application. A dedicated research development officer works with individual academics over several months to develop their proposal. There are then several rounds of review, with senior faculty members as well as external experts contributing. For example, Gustafsson won an ESRC Future Leaders Fellowship (£152k) in 2017, to explore how paraprofessionals experience work and conduct a career in contemporary professional environments. We have also harnessed Knowledge Transfer Partnerships (KTPs), with a new KTP between Dimov and CheckRisk Management Services Ltd, which will deliver a Risk Profiler tool.

Research centres

A key infrastructure for delivering our research strategy is our research centres. These centres help us to utilize and develop our research capacity and are a focal point for our external engagement and income generation. Centres are led by senior faculty members, have broad cross-disciplinary appeal and draw members from across the divisions and the wider university. For example, CBOS has 41 members from all divisions of the School, as well as four members from other faculties of the University. Directors of research centres make annual bids to the SoM

Research Committee for funding for new initiatives (up to £10K). Academic leadership of research is supported with teaching remission for Centre Directors (150 hours). The centres are subject to a three-year review process, and we have strategically updated and renewed our portfolio since 2014. For example, we disestablished five centres: The Lean and Agile Research Group (LARG), Centre for Strategic Risk and Insurance (CSR), Centre for Research in Advertising and Consumption (CRiAC), the Centre for International Business and Management (CIBAM) and the Centre for Leadership and Change (CLC), while creating four new ones.

The School's current Research Centres are:

- The *Centre for Entrepreneurship and Innovation* (CREI), led by Marsili. CREI was launched in 2016 and has been strengthened since then with the appointment of high quality ECRs (e.g., Barufaldi, Failla, Salandra, Zhang) alongside internationally renowned professors (Giarratana, Dahlander, Dimov, and Salter).
- The *Future of Work Research Centre* (FoW), led by Rofcanin, replaced the Work Employment Research Centre. The international research profile of the Centre has benefitted from the appointment of both leading professors (Adam, Giorgi, Harding, Maclean) and impressively productive new ECRs (Brewis, Mughal, Gustafsson).
- The *Centre for Governance, Regulation and Industrial Strategy* (CGRIS) replaced the Centre for Governance and Regulation in 2017. Under the leadership of Zalewska and Tomlinson, CGRIS has broadened its remit to focus on finding the balance between governance, regulation and strategic planning to ensure the effective functioning of organisations, regions and markets, and seeks to contribute to UK industrial policy.
- The *Centre for Healthcare Innovation and Improvement* (CHI²) was established in 2015. Led by Vasilakis, CHI² undertakes multidisciplinary research into health and care systems, and ways to improve them. CHI² has secured over £1.4m direct funding since its inception, collaborating with Royal United Hospital, Yeovil NHS Trust; and the West of England Health Science Network and developing a popular MOOC on the use of operations research in health care (REF ICS).
- The *Centre for Business, Organizations and Society* (CBOS) is a major global centre for research on the intersection of business and society, led by Crane, Grosvold and Glozer, which draws upon a long-standing area of excellence in the school. CBOS has led significant projects on greening urban development and combatting modern slavery.
- The *International Centre for Higher Education Management* (ICHEM), led by Naidoo, focuses on interdisciplinary research to advance the field of higher education studies (cross-referred to Education), bringing together scholars from across the University with visiting professors and doctoral researchers from over 25 countries.
- The *Centre for Research on Identities in Organizations* was launched in 2020, led by Obodaru, in order to exploit the high concentration of international experts in identities research now employed at the School (Adam, Brown, Giorgi, Harding, Maclean).
- The *Centre for Smart Warehouse and Logistics Systems* (Smart WALOS) was established in 2020 to bring together research in warehousing and logistics applications to develop new methods to improve operations management and decision-making. It draws together established faculty in the area of logistics and forecasting (Battara, Brandon-Jones, Erdoğan, Petropoulos, Giannikas) and our newer hires (Laporte, Çelik, Şafak, Sanci).

Engagement and impact

As part of our engagement and impact strategy, we created an impact fund that helps faculty to realise the potential of their work for non-academic audiences. The fund is open to all faculty, with funding allocated in biannual calls. This provides academic staff with resources to enhance and enrich their engagement with external actors, and leverage potential impact arising from their research. The fund is divided into two parts: *impact initiation* and *impact delivery*. Impact initiation offers up to £2.5k to allow staff to build strong research links with potential partners. The rules of the funding are flexible, providing resources for hosting meetings and events, developing software, and funding on-site visits. For example, the fund sponsored Fairchild's work with the European Bank for Reconstruction and Development (EBRD), helping them to develop effective mechanisms for assessing financial and delivery risk in funding applications. The fund also provides support for those staff who are developing a potential impact case, including up to £5k

of additional funding and 100 hours remission. In total, more than 40% of our staff received impact initiation funding and nine staff received support for impact delivery.

To support our engagement and impact with external audiences, we have invested in a full-time research events and content officer, as well as redesigning our web and social media presence. In 2018, our web faculty profiles were updated and moved onto Pure, which provides an online database of all research outputs. We have also overhauled our research landing pages, adopting a user-centric approach to redesign. Visitors are directed quickly to our research centre webpages, which were extended with accessible content and case studies. As a result of this revamp, the research landing page has seen an 80% increase in unique page views when comparing the period August 2019 – July 2020 with the equivalent period in 2018-19.

The School operates a *Business and Society blog*, which was launched in February 2017 and has become a successful vehicle for promoting our research, with over 150 blog posts published on a variety of topics including the implications of Brexit, decent work, diversity, entrepreneurship, and the environment. Blog posts are authored by academics and PhD students across the School, as well as affiliate members of our research centres and visiting academics. Since going live, it has attracted over 60k unique page views. Alongside the blog, a dedicated CBOS Twitter account has been launched which has increased in followers' month-on-month and sees a significant level of interaction. The account routinely gets over 30k monthly 'impressions' (people who saw the tweet), sometimes reaching 70k. It has proved an excellent way to promote our academics' publications and research events as well as linking up with other institutions and collaborators for mutual benefit. This has been most evident in our #ThinklistThursday campaign, a ranking of social media's most influential academics in the fields of responsible business.

Faculty work closely with the research office and the University's press office to promote their new research simultaneously across a wide range of different communication channels. This enables us to tailor communications to our audiences in the language and vehicle to which they are most receptive. These efforts have resulted in both a higher number of press releases, greater media coverage and our research being promoted across a wide range of management challenges. For example, Dawson's research on the migrant work ethic reached around 13 million people, with nearly 400 news outlets covering it. Also, Hinds' research on cybersecurity at work was featured in just under 200 media outlets across the world, reaching approximately 50 million people.

Research integrity
As a research-led school, it is essential that everyone conducts research in a way that allows others to have trust and confidence in the methods used and the findings. The University takes as its starting point the definition of research integrity provided by the Concordat to Support Research Integrity. It operates a Code of Good Practice in Research Integrity, which sets out the principles and standards that are expected of all research conducted at the University. The SoM has developed systems and practices that embed these principles into all our research, alongside procedures to investigate potential cases of misconduct, and the requirement that staff declare any conflicts of interest.

Prior to undertaking any research, all faculty and PGR students are required to complete an Ethical Implications of Research Activity Form. The form requires researchers discuss any matters that might raise ethical issues, demonstrating that they have carefully considered the ethical implications of their project. This is then reviewed by a second reader (someone who has some familiarity with the research area but who is not directly involved in the research project). Where additional oversight is needed due to the nature of risk associated with the project, such as the collection of data from human subjects, projects are then referred to the University's Social Sciences Research Ethics Committee. The School ensures that researchers have access to a range of resources and training to make sure that there is a thorough understanding of research integrity. There is a mandatory e-learning module "Research ethics and governance" that all researchers complete, and ethical requirements are included in induction.

In 2017, the University set out its Principles of Research Assessment and Management, only the second University in the UK to do so. These principles focused on the importance of expert judgement, transparency and reliability, covering all disciplines and indicators.

Open data and access
The University of Bath Library was one of the first UK academic libraries to establish a permanent data management service. The SoM engages with and benefits from this mature service that supports us in the planning, curation, preservation, and publication of research data and software. Our highly experienced team of data librarians provide extensive guidance, training, advice, and advocacy. Data management is also embedded in our doctoral training. Our expectations on researchers for open data are aligned with the Concordat on Open Research Data and the FAIR principles set out in our Research Data Policy. Information Security Awareness training is mandatory for all staff and students.

The University of Bath Library was one of the first UK academic libraries to establish a permanent open access team. This service supports researchers in ensuring their research can be made available via open access, supporting the process from training, to grant applications and through to actual publishing. CWTS Leiden Ranking 2020 placed Bath in the top 50 institutions in the world for the proportion of outputs that were open access.

Physical Infrastructure
We currently have high quality workspaces located across three different buildings distributed across the campus. To create an even more collegial and interactive environment, the School will move into a new £70 million dedicated building. In designing our new building, we have put research at the heart of the process, with new behavioural and entrepreneurship labs. It also has the capacity to host large conferences, further enhancing our ability to shape the progress of academic and practitioner communities.

4. Collaboration and contribution to the research base, economy and society
Our research is conceived, informed and developed through collaborations, networks and partnerships: with public and private organizations, with the general public, and through extensive roles and relationships within the international academic community.

Engagement with the private sector
The School benefits from strong research links with the private sector, both large, international organizations and local social enterprises. Notable examples include:

- The HPC Supply Chain Innovation Lab demonstrates a strong link between the University and industry. Building on previous work with Squire, Hinkley Point C funded the Lab at £1.5 million across five years. The collaboration provides a platform for international thought leadership to connect business leaders, policymakers and academics in the fields of supply chain, innovation and complex capital projects. The Lab (led by Roehrich) analyses how the HPC model could help inform future UK capital projects and provides insights into how local suppliers can have a bigger role in the construction process. The lab works extensively with public and private organisations across sectors such as utilities (e.g. EDF Group, ARUP, SITA, Veolia), construction (e.g. Kier Group, Skanska), healthcare (e.g. ECHAA, NHS), transportation (e.g. Highways England), automotive (e.g. Volkswagen), environment (e.g. Environment Agency) and aerospace (e.g. Airbus, GKN).
- The Social Enterprise and Innovation Project (SEIP) project demonstrates our approach to local partnerships. We co-developed with SETsquared a social enterprise outreach programme, which supported 300 individuals through its advice, upskilling and selection support, and 125 social enterprises under its business incubation support. The programme design was underpinned by Dimov's research and enabled by a £1.5 million grant from the ERDF. Its impact was captured by external evaluation, demonstrating that participants on the programme have started an estimated 188 new business, with a further 132 expected to start soon. These organizations are already making a difference to an estimated 4 million beneficiaries every year. The total financial impact of the project is estimated at £16.3m (REF

ICS).

- Drawing on leading-edge research on logistics, Erdoğan developed a suite of open-source tools to help improve operational efficiency. The Vehicle Routing Problems (VRP) spreadsheet solver represents, solves, and visualises vehicle routes using Bing maps and is accessible free software. VRP spreadsheet solver has been widely adopted and led to significant impact on a range of companies (REF ICS), leading to direct and evidenced savings equal to over £2 million for companies based in the US, Finland, Argentina, and Taiwan. This innovative tool supports cost efficiencies through the optimisation of routes, and effectiveness through improved on-time delivery. It reduces the time spent in traffic, thereby supporting lower CO_2 emissions. The tool is freely available and has been downloaded over 7,000 times since its launch. The tutorial video for the tool on YouTube has been watched over 74,000 times.

- As part of our long-term relationships with established firms, Salter has worked with ARUP (alongside colleagues at Imperial College). Based on the research, ARUP implemented a new value report system for its R&D projects. Projects are required to declare their impact and these statements are then peer reviewed within the firm. ARUPs Global Research Leader stated that the research was 'critical in helping to design this feedback system and in identifying this as a vehicle for the dissemination of the outcomes of our R&D projects to the wider organization'. They added that 'this research had a significant impact on the way we consider and manage our R&D efforts'.

- Drawing on a grant from the Hughes family (£60k) and an EPSRC impact accelerator grant (£65k), Squire developed a software prototype for monitoring and mapping supply chain risks. The tool draws on a semantic library, machine learning and supply chain information to provide managers real time information about upcoming risks. The software was licensed by the University to Peak Software, which is a fast-growing Manchester-based AI company with 100 employees, for £100k. As part of the on-going relationship with Peak, Squire and the postdoctoral researcher who worked on the original supply chain software tool, helped Peak Software to develop a new data science department. The CEO of Peak states that working with Squire was instrumental in helping the firm grow and develop its capacity in AI and data science, which has helped to underpin their rapid growth. Subsequently, Peak has raised £6 million in external finance over two funding rounds and expanded its business globally.

- Giannikas has been collaborating with YH Global, a leading logistics firm in China, on how to respond to supply chain shocks. This work, done in collaboration with the University of Cambridge, uses data from YH Global to identify the sources of these shocks and potential remedies. A similar collaboration approach has also been used in a project with Boeing, Jeppesen, Swiss Air, Emirates Airlines and Aegean Airlines to analyse airplane disruptions management and re-scheduling. In addition, Giannikas is working with Chep, the UK's leading pallet provider, on a project funded by the British Academy and Leverhulme Trust, to explore the potential for collaboration between companies in the use of delivery trucks. The goal of the project is to find ways of pooling cargo from different companies on the same lorry, helping to enable more sustainable transportation solutions.

Engagement with government and charity sectors

We collaborate with policy makers and public bodies to further our research goals and to enhance the impact of our research. Notable examples include:

- Swart collaborated with the United Nations Capital Development Fund (UNCDF) to develop a new five-year knowledge management strategy. This strategy involved the adoption of new approach to integrate specialist knowledge across UNCDF offices, which are based in the world's 46 least developed countries.

- Tonks was seconded to Bank of England to explore how institutional investors changed their asset allocation in response to 'quantitative easing' (QE). Tonks' research provided evidence on the effectiveness of the 'portfolio balance channel', giving confidence to the BoE to further extend QE. It was cited by the President of the European Central Bank (ECB) as evidence to support its own asset purchase programme initially worth €1.1 trillion, confident that there was a mechanism through which QE operated (REF ICS).

- Colville collaborated with Wiltshire Police Service (WPS) to understand sensemaking in organizations in the context of high-risk, novel situations. This research has been applied

within WPS to underpin changes in policy and practice. According to the Chief Constable the research has been critical to build WPS's ability to effectively engage with the complex, unexpected circumstances of the Novichok poisonings in Salisbury, and with the Covid-19 pandemic. These changes in WPS have been widely showcased nationally and internationally.

- The 'Good Garments Project', funded by the British Academy in partnership with DFID, seeks to understand how the firms at the end of the big garment brands' supply chains can improve labour standards (Crane and Soundararajan). The research found that while worker exploitation was declining, it also remained prevalent through low pay, health and safety violations, and verbal abuse. The project identified twelve pathways to change, which included targets for eliminating health and safety violations, fair wages and tackling verbal and physical abuse.

- Joinson's research has significantly improved awareness of when and why people are susceptible to 'phishing' attacks, underpinning changes in the policy and practice of government agencies, including the Centre for the Protection of National Infrastructure and HMRC. It supported the development and implementation of the UK Government's "Don't take the bait" campaign and the UK's National Cyber Security Centre guidance on protection against phishing attacks. The research also underpins Cybsafe's training resources, which have been used by over 150,000 employees from a range of different organisations (REF ICS).

Engagement with the public
We have implemented a strategy for more effectively engaging members of the general public in the research we produce. In 2018, we launched our Research4Good campaign to showcase our research within local and global communities. We use our public webpages, and various social media platforms, to demonstrate the practical relevance of our research. We emphasise how our research impacts positively on people's lives, on our local communities and economy, and internationally. Examples of our public engagement include: an 'art exhibition' on our research; and an EU funded 'FUTURES night', run across Bath and Bristol. Events included, for example, engaging with members of public on trains, using stand-up comedy (aimed at the 16-25 age range); and a Women and Creativity event at the Holburne Museum.

Our research is also helping to make a difference internationally, helping distressed and disadvantaged communities. A scheduling tool is being used by multiple NGOs in Syria, software to aid decisions for post-disaster debris clearance being employed by the US Army Corps of Engineers, and a decision support tool for expansion of the donated breastmilk banking network used by the South African Breastmilk Reserve, are all based on SoM research. Erdoğan's 'solvers' are not only cutting-edge but also made widely available through an open-source policy. For example, these (2D and 3D Bin Packing) solvers have been used in a diverse range of applications: from sheet metal cutting, planning the shipment of Personal Mobility Devices to Haiti, and a Swiss museum of Ethnography optimizing its artefact storage.

The School produces videos and case studies for public consumption that highlight and celebrate the research that we do. These videos have broadened public awareness of our research. For example, Shankar's short film about marketing research in the School was a spur for a personal invitation to appear on the BBC1 programme 'Shop Well for Less' (Viewing figures: 3.5-5 million). Shankar was the academic consultant to the production company RDF TV. He appeared in the first two series of the show, eight one-hour episodes in total, as the academic expert. They discussed the marketing approaches used by retailers and large firms to shape purchasing behaviour. These commentaries helped to raise viewers' awareness of the wide range of subtle but effective approaches used by companies to manipulate their consumption choices.

Engagement with the academic community
Our faculty are internationally engaged academics who make a wide range of contributions to the global scholarly community. These contributions have been recognised through significant awards, honours and commissions of trust.

Major editorial roles. Our faculty have held important editorial roles at leading journals. For example, Dimov was field editor for *Journal of Business Venturing* and is editor-in-chief for *Journal*

of Business Venturing Insights and Salter is an editor at *Research Policy*. Associate Editor roles include: Vince at *Academy of Management Learning and Education*, Giorgi at *Academy of Management Review*, Salter at *Industrial and Corporate Change*, Swart at *Human Resource Management Journal*, Rofcanin at *Human Relations*, Giarratana at *European Management Review*, Roehrich at *International Journal of Operations and Production Management*, Lewis and Squire at *Journal of Operations Management*, Dahlander at *Academy of Management Journal*, Lennox at *The Accounting Review* and *Contemporary Accounting Research,* Brown at *Organization Studies* and *Human Relations*, and Adams at *British Accounting Review*.

Membership in editorial boards. Our staff participate on a wide range of editorial boards. For example, Dimov at *Journal of Business Venturing*, *Entrepreneurship Theory and Practice*, *Journal of Management Studies*, I*nternational Small Business Journal*, Vince at *Organization Studies*, *Management Learning*, and *Academy of Management Learning and Education*. Gounopoulos at *Corporate Governance: An International Review* and the *International Journal of Accounting*, Laporte at *Operations Research* and *Transportation Science*, Giarratana at *Strategic Management Journal* and *Journal of Management*, Mughal at *Human Relations*, Grewal at *Journal of Marketing* and *Journal of Marketing Research*, Salter at *Industry and Innovation* and *Innovation: Organization and Management*, Brown at *Journal of Management Studies* and *Organization*, Roehrich, at the *Journal of Operations Management*, Lenox at *Journal of Accounting Research* and *Journal of Business Finance and Accounting*, Rofcanin at the *Journal of Occupational Health Psychology* and the *British Journal of Management*. Maclean at *Management Learning*, and Xie at *European Journal of Finance*.

Special issue development and editing. Since 2014, our faculty have edited 14 special issues. Notable examples include Tomlinson served as Guest Editor for *Competition and Change* and for two special issues of *Cambridge Journal of Regions, Economy and Society*. Marsili was the guest editor for special issues in *Industrial and Corporate Change* and *Small Business Economics*. Giannikas was guest editor of the *International Journal of Production Research*. Brown and Colville were guest editors of a special issue of *Management Learning*. Soundararajan is guest editor for a special issue of the *Journal of Management* and the *Journal of Supply Chain Management.*

Major roles in professional and scientific communities. Roehrich was elected Distinguished Fellow and Qualified Member of 'The Chartered Institute of Procurement & Supply' (CIPS), in recognition of contributions to the procurement and supply field. Petropoulos was elected Director of the International Institute of Forecasters. Dimov was the Chair of the Research Committee of the Entrepreneurship Division at the Academy of Management.

Visiting professorships and fellowships. We encourage our faculty to undertake visiting positions at other universities. During this REF period, our faculty have held 15 appointments with a wide range of academic institutions within the UK, including UCL, Leicester, Manchester among others. Around a quarter of our faculty have (or had) visiting positions in various European countries, including INSEAD, Paris-Sorbonne, Reykjavik University, NOVA Portugal, IESE, Istanbul Sabanci, and Bogazici and Visiting Scholar positions at University of St Gallen, Bocconi, EPFL, Audencia Business School, Copenhagen Business School, and Vienna University. Our academics also held appointments outside Europe, including George Washington, Stanford, Cornell, Indiana, UC Berkeley, Texas, Connecticut, Queensland University of Technology, University of Technology Sydney and RMIT, Nelson Mandela University, and McGill University. Notably, Adams held a Handelsbanken-Wallander Research Fellow and was awarded an Honorary Doctorate from Umea University in October 2019.

We are keen to welcome visiting scholars to foster the cross-fertilization of ideas with international partners; and to help build, cement and sustain strong international collaborations. Since 2014, we have had 82 Visiting Professorships and Fellowships from 68 different institutions. All visiting scholars have internal sponsor and a well-articulated research programme. Visitors deliver seminars, offer supervision and mentoring to PhD students, undertake joint research, and collaborate in grant funding applications. Visiting professors have included: Alvesson (Lund), Cefis

(Bergamo). Smith (Delaware), Cunliffe (Fundação Getulio Vargas-EAESP), Santangelo (Catania), Snell (Virginia), Levy (Adelaide), Tyler (North Carolina State), and Vogel (Hamburg).

Major prizes and awards. Our faculty consistently win prizes and awards for their research. Glozer, Soundararajan, Crane and Ward-Grosvold have all won best paper prizes within AOM's SIM and ONE Division. Snelson-Powell, Ward-Grosvold, Crane, Liu and Glozer have also won best paper awards at the International Association for Business and Society Conference. Other notable examples include: Soundararajan, the Business and Society Journal Best Paper Award; Grewal, two time winner of the Stern Award at the American Marketing Association and three time winner of the Davidson Award at the *Journal of Retailing*; Giorgi, the *Journal of Management Studies* Best Paper Award; Vince: *The Learning Organization Journal*, Best Paper Award; Maclean, Best Full Paper Award at BAM's Management and Business History Division; Petropoulos, *International Journal of Forecasting* Best Paper Award; Dimov, Entrepreneurship Division of AOM Best Paper; Gustafsson and Swart, Careers Division of AOM Best Overall Paper. Vasilakis and Lewis won the Chris Voss Best Paper Award at EUROMA Conference. Dahlander received the TUM Research Excellence Award of the Peter Pribilla Foundation for outstanding research in Innovation and Leadership. Laporte was awarded the Order of Canada and membership of National Academy of Engineering (USA), alongside receiving honorary doctorates from Eindhoven and Liege.

Reviewing for research councils and foundations: Many of our academics routinely review for UK based grant funding bodies: ESRC (Gore, Soundararajan, Roehrich, Gounopoulos, Tonks), EPSRC (Jeon, Gore, Vasilakis), MRC, NIHR, Wales Health and Care Research as well as several health funding panels through CLAHRC West and the GW4 network (Vasilakis), The British Academy and Leverhulme Trust (Roehrich, Gounopoulos, Vasilakis, Chudzikowski, Salter), and The Wellcome Trust (Vasilakis). In addition, we also are active reviewers for a wide range of international and national funding countries: Germany: Max Plank Society (Zalewska) and the German Academic Exchange Service (Roehrich), Poland: the Polish Science Foundation (Zalewska), Switzerland: the Swiss National Science Foundation (Soundararajan, Salter and Roehrich), European Commission: European Research Council (Salter), USA: National Science Foundation (Roehrich); Academy of Marketing (McDonagh), and Canada: Natural Sciences and Engineering Research Council (Battarra).