

Institution: University of Worcester
Unit of Assessment: 17 Business and Management Studies
<p>1. Unit context and structure, research and impact strategy</p> <p>Unit context and structure</p> <p>The submitting unit consists of staff from Worcester Business School (WBS) which sits within the College of Business, Psychology and Sport. WBS is organized into three departments: Management and Finance, Marketing and Entrepreneurship, and Computing. Its research cuts across: business history; consumer behaviour; corporate governance; corporate social responsibility; entrepreneurship; human resource management; information systems management; international business; leadership; management education; marketing; organisational psychology; public sector management; risk management; sustainability; and technology management. Staff in computing are fully integrated into the research culture of WBS. Their research is focused primarily on business-focused IT solutions, mobile technologies and human-computer interaction; thus the logical decision was taken to incorporate them in this unit, although some technical outputs have been cross-referred to UoA11. The number of staff in the submitting unit has risen from 10 (8.7 FTE) in REF 2014 to 16 (15.2 FTE) in REF 2021.</p> <p>A key component of the unit's post-REF 2014 strategy (see below) was to establish research groups. A series of staff events were held early in this assessment period to identify groups that reflected shared strengths and areas of focus in the unit and which coalesced with the wider strategic aims of the University. The initial proposed groupings identified through these events have evolved and developed into the four research groups reflected in this unit:</p> <ul style="list-style-type: none"> • Customer Interactions (Kasem, Mora-Avila, Nicholls, Rezaei, Watts, Wiid) – the group aims to advance understandings of customer behaviours and interactions in the marketplace through conceptual and applied research driven by marketing and management problems and challenges. The team's activities are directed at providing excellent research that contributes to the wider community of customers, business and the public. • Future Proofing Organisations (H Andrews, Bell, Emblen-Perry, Garfield, Henson, Kasem, Mora Avila, Rezaei, Taroun, Warren, Wiid) – the group, which also includes researchers from the Institute of Education, aims to explore issues relating to business risk and sustainability. • People and Work (H Andrews, Francis-Smythe, Nichol, Ross) – the group, which incorporates researchers from the School of Psychology, aims to conduct research to generate academic knowledge in the areas of Leadership, Human Resource Management (HRM) and Human Resource Development (HRD); to provide research-based solutions to develop organizational practice; to undertake research to enhance the learning experience and employability of students and graduates. • Applied Computing (Bowers, Garfield, Henson) – the group focuses on the application of computational approaches to address practical issues in several applied domains; specifically it aims to further understanding of human perspectives on privacy and security with regards to information assurance; identifying key barriers to effective information assurance and security in SMEs, and design, develop and inform information assurance and information security standards that are appropriate and effective for SME's. <p>Overarching leadership of research in WBS falls to the Head of School (Anne-Marie McTavish). She works closely with the College Director of Research & Knowledge Exchange (who sits on the School Senior Leadership Teams for all Schools in the College) to drive forward the Research and Knowledge Exchange (RKE) agenda. The School has also appointed a research coordinator (H Andrews) who has operational responsibility for RKE.</p>

WBS has an RKE Forum which brings together Head of School, College Director, Research Coordinator, Heads of Department and Research Group leads to discuss strategy and identify operational priorities for research. Strategic and operational objectives are disseminated to staff through regular School Research Away Days. Research Group leads, PhD and DBA Course Leaders from the School sit on the College-level RKE Committee, chaired by the College Director. This provides opportunity for the School to inform and influence college-level strategic and operational developments.

Research and Impact Strategy

Unit's strategic research objectives during the assessment period

The Business School's REF 2014 submission identified the following strategic research objectives: to develop current staff (in particular, ECRs); to recruit staff with a strong research profile (or the potential to develop such a profile); to enhance research leadership through development and promotion and through recruitment; to establish research groups in focused areas.

These objectives were elaborated and extended in the WBS Research and Knowledge Exchange Strategy (2015-2020) which flowed from the institutional research strategy (REF5a 2.1). The WBS strategy was focused: on developing the unit's research culture (not least through establishing research groups); on a research-focused staffing strategy; on increasing the quality of its research; on generating impact; and on increasing RKE income generation. The achievement of these objectives will be demonstrated through this environment narrative.

Impact Strategy

Much of the unit's research is applied in nature, i.e. it sets out to address real world problems for businesses and organisations. There is also a significant strand of research in the unit focused on the pedagogy of management and enterprise education in Higher Education. The unit's research has thus focused on developing and changing business and organizational practices for the better and on reshaping the business and management curriculum, not only within the University but nationally and internationally.

The unit's approach to facilitating impact has included:

- Appointing an impact champion who works to support staff to identify and develop their impact
- Enhancing staff understanding of impact through staff development, specifically through all staff away days focused on research impact (held in 2014, 2015 and 2017)
- Promoting direct engagement with users (businesses and other organisations) to ensure research reflects meets the needs of researchers
- Recognising and rewarding publication in professional journals
- Engagement at School senior management level with business organisations, such as the Chamber of Commerce and Local Enterprise Partnerships creating potential pathways to impact
- Establishing an "Applied Research" group in 2014 to increase the support offered by researchers to the business community. The group has worked with a variety of small businesses and organisations such as the Kennel Club, Royal Aeronautical Society, and Worcestershire LEP.
- Embedding research in the curriculum

The selected Impact Case Studies show many of these approaches in action:

- *ICS1 - Improving customer service through managing customer-to-customer interaction*
The case study was built on direct engagement of the researchers with organisations that could benefit from the research.
- *ICS2 – Enhancing cyber security for SMEs*

The case study was built on working collaboratively with users to develop a product that aligned with their needs.

Interdisciplinary Research

The University's College Structure was developed as an enabler of interdisciplinary research (REF5a 2.5). College Directors of RKE are tasked with identifying and developing interdisciplinary opportunities across Schools in a College but also between Colleges where appropriate.

The "Customer Interactions" and "People and Work" research groups form part of an overarching cross-College Interpersonal Relationships and Wellbeing Research Group that particularly draws together Business and Psychology staff. This group explores from an interdisciplinary perspective how individual, social and environmental factors influence relationships and wellbeing within different contexts, such as in workplaces, schools and online spaces. It seeks to understand how interpersonal relationships contribute to mental health and wellbeing and how they shape individual and team behaviour in consumer and organizational settings.

Open Research

The University is committed to an Open Research Environment evidenced by its resourcing of this important area (dedicated Open Access Advocacy and Support Officer; Open Access Funding) and its policy development (on Open Access and Open Data) (REF5a 2.5). This commitment is further reflected in its new Research & KE Strategy which identifies developing its Open Research environment as one of 5 underpinning principles of the strategy (REF5a 2.3.4).

The unit echoes this commitment. It has worked closely with the Open Access Advocacy and Support Officer to raise awareness of the Open Access agenda, for example, through running dedicated training events as part of School Away Days. This has fed through into a very small number of outputs (just 3) authored in the unit over the assessment period being non-compliant.

Staff in the unit have also received funding for APCs through the University's Open Access Fund (£2,145), publishing in journals such as *European Journal of Work and Organisational Psychology*.

The University will look to review and revise its Open Access Policy in 2021 in light of national and international developments, in particular Plan S. The University has recently signed up to the San Francisco Declaration on Research Assessment (DORA) and has established a working group to implement its principles.

Research Integrity

At University level, the University's Research Integrity & Governance Committee has oversight of policies and procedures to support research integrity and its Chair is the University's Research Integrity Champion. The champion is expected to embed a culture of integrity across University through developing training and support for staff but also raising its profile.

At College level, Research Ethics Panels are responsible for review of all staff and research student projects to ensure they are conducted according to appropriate ethical, legal and professional frameworks, obligations and standards. Panel Chairs and Vice Chairs are experienced researchers whilst panel reviewers are drawn from across the College; lay reviewers are also recruited to the panel. All staff submitted in the Unit are reviewers. Training is provided to all reviewers at University level before they engage in the role. The unit has also provided specific training around ethics for all staff in the School. There is an annual audit of reviews to ensure the Panels are fulfilling their role.

Future Strategic Aims

The University's new RKE Strategy 2020-25 was approved in summer 2020 (REF5a, 2.3). The expectation is that Schools' strategic objectives will flow from the University strategy but will also reflect disciplinary priorities, with Schools required to develop a strategy implementation plan accordingly. Inevitably, the Covid-19 pandemic has impacted on the development of this plan and aims set out here are consequently preliminary.

The unit's current research strengths fit primarily with "Sustainable Futures" and "Digital Innovation" Challenges identified as priority areas for the University.

The unit will seek to enhance its research in these areas by:

- Strengthening its research leadership through recruitment, development and promotion
- Building research capacity through recruiting and developing excellent ECRs
- Increasing RKE funding through development of strategic approaches to RKE income generation at the level of the Research Group
- Further developing links with business and business organisations

2. People**Staffing strategy**

In line with the University's overarching strategy (REF5a 3.1.1-3), the unit's approach to recruiting staff to standard academic contracts is focused on meeting current needs of UG and PGT programmes in the School, enabling curriculum development and addressing RKE objectives at school level, in particular seeking to recruit staff whose research feeds into existing strengths and areas identified for development. In line with the unit's strategic research objectives set out above, there has been an increased emphasis on RKE in the recruitment process over the assessment period:

- Staff recruited to standard academic contracts are normally expected to have a doctorate or to be working towards one
- All candidates are required to give a research presentation as part of the selection process

In recruiting to standard academic contracts, the unit has used open-ended/permanent contracts not fixed term. No Category A eligible staff on the census date were on open-ended/permanent contracts.

20 staff were recruited to Category A eligible contracts over the assessment period (5 of whom have since left). 13 of these had a doctorate at the point of recruitment, a further 6 were studying for a doctorate, 5 of whom have now completed. Over the period the percentage of staff with a doctorate in WBS has increased from 47% to 59%. 10 of these staff are included in this submission (with a further two returned as former staff).

The unit has also appointed Professor Mark Saunders as Visiting Professor.

Two professorial staff have retired in the assessment period (Cox in 2016, Francis-Smythe in 2018). Both are now Emeritus Professors and have continued to engage with the unit in this capacity as doctoral supervisors. A number of other staff who have made a significant contribution to the unit have left the University in the period and are returned here as former staff (Alade, Jones, Loon, Richardson).

Table 1 shows the balance between contract levels in the unit for both Category A Eligible and Submitted staff (see REF5a 3.1.6 for institutional comparison). A high proportion of staff are at Senior Lecturer (J0) level with a small percentage at Lecturer (K0). This reflects two things: a number of ECRs were recruited early in the period at Lecturer level but have subsequently been promoted to SL; staff with significant professional experience tend to be recruited at SL. The unit

has no current professors and this is clearly an area that needs to be addressed; however, two staff have been promoted to Principal Lecturer (I0) based on their research and now are department Heads (Bowers, Nichol).

	% Category A Eligible	% Category A Submitted
Lecturer/Research Fellow (K0)	4	6
Senior Lecturer/Senior Research Fellow (J0)	81	81
Principal Lecturer/Principal Research Fellow/Head of School (I0)	15	13
Professor (F1)	0	0

Table 1: Proportion of staff by contract level

Staff development

The unit is fully committed to supporting the development of its researchers. In keeping with the University's approach, it aligns its support with the *Concordat to Support the Career Development of Researchers*. The University was awarded the HR Excellence in Research Award in 2016, renewed in 2018 and staff in the unit actively engage with the University's Concordat Implementation Group.

The unit has provided wide-ranging support for staff to develop as researchers building on institutional systems. At appraisal, staff are required to submit a 3-year Research and Knowledge Exchange plan which sets out their research objectives over a 3-year period and identifies the support they will need to achieve this. This can include mentoring and peer support, training and development activities, support for dissemination, and support for doctoral study.

WBS launched its own research mentoring scheme in October 2015. Mentors were provided with dedicated training and asked to identify their specific areas of knowledge and experience (e.g. funding applications, doctoral supervision, getting published, research methods). The scheme connected researchers with mentors who had the requisite skills and experience for the researcher's needs at that point in their career. The local success of the scheme led to a cross-University scheme being developed on broadly the same model (REF5a 3.2.4). Less formal, peer support is provided through the Research Groups; Research Group leads are given workload allocation to enable them to provide this support.

Most training and development needs can be met through the University's Researcher Development Programme which is designed to support staff at all career stages (REF5a 3.2). Workshops are delivered by senior researchers and professional staff at the University, including staff in the unit (e.g. Nichol is a co-convenor of the leadership programme), but also draws on external presenters and utilises resources offered through Vitae and other professional development organisations. Staff in the unit have consistently engaged with the University's Research Leadership Programme, its Research Supervisor Development Programme, Bid Development training and Impact and Engagement training.

The unit has, in addition, provided its own development opportunities:

- Research away days for the whole School focused on key research matters such as REF, Impact, Open Access, data management, ethics, dissemination
- Research Group led training around specific research methods and tools
- Weekly "shut up and write" sessions providing researchers with a space away from the office to focus on their research.
- 3-day writing retreats, funded by the School to enable people to complete research outputs

Staff can access funding to support attendance at up to two academic or professional conferences per year, one of which may be international. Any request for funding must align with the 3-year RKE plan. Between 2014/15 and 2019/20 the business school spent an average of £17,433 pa funding conference attendance.

The unit also offers in-house opportunities for staff to present research:

- The School historically ran a seminar series (2014-18) where staff and research students could present their work in progress in a supportive environment.
- This has been replaced by a College level seminar series (2018-) which is interdisciplinary in nature; whilst Research Groups have also developed their own seminar series.
- Research away days have included sessions for staff to present their research.

The University's staff development policy will cover 50% of the fees for doctoral study for up to 6 years. Over the REF period 10 business school staff have taken advantage of this scheme.

The unit has put in place a number of mechanisms to provide staff with specific workload allocation for research in addition to the 20 days research and scholarly leave all staff received:

- **Specific support for ECRS:** those who have either completed their doctorate in the last 2 years or are a doctoral student 12 months or less away from submission of their thesis receive 90 credits of workload relief (equivalent of 90 hours) for up to two years to allow them to develop their research in the postdoctoral period. Since 2014, 17 academic staff have been supported through this scheme, being given a total of 2520 workload credits at a cost of £62,781 in replacement staffing. Of these 17, 8 out of 9 still employed by the University (H Andrews, Bell, Emblen-Perry, Kasem, Mora-Avila, Warren, Watts, Wiid) are submitted here.
- **Research Tariff Scheme:** since 2015, staff have been able to apply for workload relief through the WBS Research Tariff scheme. The scheme allocates up to 90 credits workload relief based on research performance measured by outputs, funding bids, external engagement, contributions. 19 staff in the unit have been supported through this scheme at a replacement staffing cost of £77,274.
- Teaching timetables are arranged to ensure that no teaching takes place on a Wednesday afternoon so that all staff could be available for development events, and a block of two hours is set aside every month for school-level research-related development to complement that provided at college level.

9 Staff in the unit have been awarded leave through the University's research leave programme (see REF5a 3.2.3): H Andrews, Bell, Bowers, Emblen-Perry, Garfield and Nicholls who are returned here plus 3 staff who have subsequently left. This has enabled them to develop their research, publish and extend the impact of their research. Notably, Nichols used his leave period to develop the work articulated in ICS1.

Research students

The unit has significantly increased its PGR community over the assessment period. There were 8 PhD students in the unit at the end of the REF 2014 period; there are 62 research students at the end of the REF 2021 period – 4 FT PhD students, 18 PT PhD students; 40 DBA students. A significant part of this growth is the introduction of the DBA in 2014 and specifically the establishment of a DBA programme in partnership with FHM Bielefeld, Germany in 2016.

4 PhD students (co-supervised with UoA4) and two DBA students have completed in the assessment period (see Table 2). One additional DBA student completed their doctorate in Autumn 2020 and one PhD and one DBA student successfully defended their thesis in Autumn 2020, with four more DBA students awaiting their viva at the time of writing. This demonstrates there will be a significant upturn in doctoral completions over the next few years.

Year	PhD	DBA
13/14	0	0
14/15	1.5	0
15/16	1	0
16/17	0	0
17/18	0	0
18/19	1	0
19/20	0	2

Table 2: Doctoral completions (FTE) by year and programme

Recruitment to doctoral programmes is overseen by School-level PhD and DBA Course Leaders who work closely with the central Research School (REF5a 3.3.2-3). To increase its PGR numbers, the unit has taken a three-pronged approach:

- It has expanded its doctoral programmes as set out above
- It has increased its supervisory capacity. Just 6 staff were eligible to supervise at the end of 2012.13. 17 staff in the unit are now on the University's Register of Approved Supervisors including the 16 staff submitted here. In addition, the unit has recruited 15 Associate Supervisors, a group of highly experienced supervisors who contribute to the PhD and DBA programmes.
- It has been successful in winning three University-funded PhD studentships over the assessment period, focused on: customer-to-customer interaction (Nicholls, 2016-20); frameworks for career success (Ross, 2017-21); predicting employee turnover using machine learning (Bowers/Nichol, 2020-24).
- It has sought to align its recruitment with its Research Groups.

PhD and DBA Course Leaders also play a core role in oversight of research student progress. They sit on the University's Research Degree Board and are responsible for annual monitoring of student progress within the School.

Schools work closely with the Research School to ensure that research students are embedded within both the subject and wider research culture:

- Research students are normally attached as affiliate members to one or more Research Groups.
- They are encouraged to attend and to present at College-level research seminars.
- A school-level Research Student representative sits on the College RKE Committee.

The Research School is responsible for research student life, i.e. for the wider development and wellbeing of research students. It provides a dedicated work and social space for students. The Research School team, co-located in the student space, provides advice and guidance for students on their programmes, and, working closely with other student-facing departments such as the Disability & Dyslexia Service, the student mental health team, careers service, also offers pastoral and wider support. The Research School has developed comprehensive support and guidance for students and supervisors on mental health.

PhD students in the unit are required to engage with the central Research Student Development Programme (REF5a 3.3.4-6) to which staff in the unit regularly contribute. The programme has been mapped against Vitae's Researcher Development Framework. The programme offers a suite of modules, short courses and workshops, delivered face-to-face or online, some of which are compulsory for all doctoral students, focused on the following core areas: planning and managing research; academic writing; research methods; data analysis; research integrity and ethics; dissemination, engagement and impact; careers and employability. The University also supports students to engage with external training where this is specialist and not available through the University's programmes. Students are also able to access training offered through the GuildHE Research network. As part of the programme, students may also engage with Level-7 subject specific methods modules offered in the School. DBA students also have access

to the student development programme, much of which is provided through a Virtual Learning Environment. In addition to the central programme, the unit runs an annual Doctoral Student Colloquium for PhD and DBA students, run in partnership with Gloucestershire and Birmingham City universities.

Beyond the programme, the Research School offers a number of additional development opportunities. Research Students have opportunities to teach, particularly those on a PhD studentship and can access modules and workshops to develop their skills in this area, with the opportunity to gain associate or full fellowship of the Higher Education Academy. The University offers research student-specific dissemination opportunities including an annual “Images of Research” exhibition and student-led PGR Conference. Further the University provides funding opportunities for students to attend and speak at external conferences and events and separate funds to support students to develop inter and cross-disciplinary networks, seminar series, conferences and events. The University is also a member of the Brilliant Club, a charity focused on improving access to University, which provides opportunities for doctoral students to go into schools and deliver tutorials in their area of expertise. The Research School also provides more ad hoc opportunities: for example, in 2019 the lead for the development programme worked with a student team to deliver a University programme for Pint of Science.

The unit ensures the quality of its supervision in a number of ways:

- All registered supervisors (including Associate Supervisors) are required to complete the University’s Research Supervisor Development Programme (REF5a 3.3.8-9). The programme has been in place for some 20 years but was rethought and relaunched in 2018/19. The programme offers a wide range of support for supervisors at various career stages on themes such as: introduction to supervision, supervisory styles, regulations and processes, supervising international students, PGR mental health and wellbeing, supporting student progress. New supervisors must complete the whole programme but more experienced supervisors must also engage with core elements and all supervisors are required to engage in regular refresher training (every 3 years). The programme is complemented by supervisor lunches that bring together supervisors to discuss key topics and challenges in supervision.
- The unit established a DBA Supervisor Forum recognising that some staff had no previous experience of supervising professional doctorates.
- Associate Supervisors, as experienced supervisors, provide mentoring and support for less experienced staff
- All supervisors received dedicated workload allocation for this activity

Equality and diversity

The University has a fundamental commitment to equality and diversity (REF5a 3.4). It seeks to consider and apply equality and diversity principles in all that it does, from recruitment and selection, to appraisal and promotion, to staff development to flexible working and support for health and wellbeing. Its policies and processes are designed to disadvantage no-one and are subject to ongoing equality impact assessment to ensure this is the case.

The unit’s approach flows from this, with the Head of School ensuring that the University’s principles and policies are fully enacted.

- Recruitment of staff follows the institutional process, which require all those involved in the selection process to have undertaken equality training.
- Internal recruitment to positions of research responsibility, such as research coordinator, PhD course leaders, Research Group lead also follow a formal application process to ensure equality of treatment.
- All School funding schemes have clearly articulated policies (Research Conference Attendance policy, Research Tariff Scheme) which objectively define the criteria for support and the staff who can access support. So, for example, the tariff schemes provide a specific definition of ECR in this context.

- Line managers ensure staff are aware of and are supported to engage with, for example, the University's flexible working policy, its parental leave policies, its policies which support carers (such as its Critical Illness Policy) and its staff wellbeing initiatives (see REF5a 3.1.8).
 - Several staff in the unit have benefitted from the University's flexible working policy (REF5a 3.1.8) with a move to part-time or compressed hours. There is no evidence that this has impacted on research productivity, access to funding or progression. It is notable that both at institutional (REF5a table 2) and unit level, part time staff are as well-represented in the Category A submitted as eligible category.
 - Staff in the unit have taken parental leave in the assessment period. They have received active support to transition back to work after the leave period, through "keeping-in-touch" days, phased return, mentoring. It is ensured that where a staff member takes parental leave this does not impact on research leadership or supervisory roles.

The unit is committed to the wellbeing of its staff and research students. To support this, both staff and research students have access to the university-wide mental health and well-being support, including (for research students) access to the support offered by the disability service, the counselling and mental health teams, and (for staff) the Employee Assistance Programme which provides counselling and 24 hour support.

Staff in the unit are committed to equality and diversity. Two staff were members of the University's Athena SWAN self-assessment team; the University received its institutional Bronze Award in April 2018 and is committed to making departmental applications in the next 2 years. Staff are also engaged with various staff networks focused on protected characteristics and with the LGBTQ+ Allies scheme.

In preparing this narrative, it was recognised that there are opportunities to enhance practice at unit-level. There has been no equality impact assessment of local funding processes (e.g. support for conference attendance) and, whilst there is no suggestion that any group is disadvantaged, this is a clear area for development.

3. Income, infrastructure and facilities

Income

It was recognised at the beginning of the assessment period that to increase research funding income, the unit needed to enhance support for staff to engage in bidding for external income:

- Over the assessment period, the University's Research Office has developed a comprehensive research funding support function. Research Support staff work with researchers in the unit to identify funding opportunities, to develop and quality assure bids and to facilitate the gaining of appropriate internal and external approvals.
- The Research Office also offers training and development around bidding, both general and bespoke.
- Staff in the unit are given workload allocation to develop major funding bids
- The Research Tariff scheme described above rewards staff for developing funding bids

The unit has had moderate success in winning external funding over the assessment period and it is recognised that a more strategic approach is warranted. Hence, Research Groups are now expected to develop their own strategies for RKE income generation. They have been supported in this by the College Director of RKE. The Director's role is to provide leadership and guidance for Research Groups in developing their strategy, whilst an RKE Facilitator assigned to the College works with Research Group leads to develop a bespoke funding opportunities service for members of the group.

The unit has won funding from: British Council, Erasmus+, professional bodies (such as the Chartered Institute of Personnel and Development), NHS, and small businesses.

Examples of funded projects include:

- *Exploring Collaborative Research Opportunities for Participant-Centred Learning Techniques and their Impact on Learning and Innovation in Management Education (UK/Turkey)*, British Council Newton Researcher Links, 2014-15 (S Andrews). Funding supported the development of workshops to bring together senior researchers, ECRs and commercial practitioners from the UK and Turkey to focus on participant-focused learning techniques in management education.
- *Developing the cross-cultural skills of graduates in response to the needs of European enterprise*, Erasmus+, 2018-20 (Bell). This project, led by Worcester with partners from London South Bank University (UK), UC Leuven-Limburg (Belgium), Halmstad University (Sweden), and Bursa Uludağ University (Turkey), was developed in response to recent research highlighting the importance of intercultural competencies for graduates wanting to work in Europe, the employers' needs, and the intercultural competencies and skills higher education institutions provide. This project aims to develop the intercultural competencies of graduates in the EU but is underpinned by further research with students and employers exploring intercultural skills and cultural barriers.

Infrastructure and Facilities

The University has significantly expanded its institutional infrastructure for supporting research and impact over the assessment period, establishing a RKE Directorate consisting of a Research Office, Research School and College RKE infrastructure (REF5a 4.1). It has also expanded support for researchers offered by Library Services.

Its RKE Directorate provides wide-ranging support and guidance for researchers around identifying funding (including access to funding databases, such as *Research Professional*), bid development, KE and impact generation (including use of *Vertigo Ventures Impact Tracker*), project delivery (including contract negotiation, liaison with partners, financial and other reporting) and research governance (including data management, data sharing, protecting and exploiting IP). It also provides access for researchers to a current research information system (PURE).

The University has established robust Pre- and Post-Award processes for externally funded projects (approved in 2018/19 and subject to evaluation and review in 2020/21). These processes scaffold the Research Office support systems set out above and ensure good governance for bids and for projects.

It has been recognised that the processes need to incorporate Equality Impact Assessments at various stages of both pre- and post-award. In lieu of this broader development, the University has adopted the BBSRC EIA guidance and template for reviewing research bids. It has also been agreed to undertake a review of bidding over a 5-year period from an equality perspective and this will be completed in 2021. The review will inform the development of support mechanisms for bidding.

At School-level, in addition to the Research Coordinator and Impact Champion, there is dedicated administrative support for research, particularly focused on supporting the delivery of projects.

The University offers a range of research support schemes designed to support researchers at all career stages and, variously, to pump prime projects, develop international collaborations, and advance existing areas of work (REF5a 4.1.6).

Staff in the unit have been successful in gaining funding from these schemes:

- PhD studentships: as noted above, three fully funded PhD studentship have been

awarded to staff in the unit over the assessment period (Nicholls, Ross, Bowers).

- Vacation Research Assistantships (VRAs): staff in the unit have been awarded 14 VRAs. These have enabled staff to develop outputs and impact. For example, a VRA awarded to H Andrews in 2016 has led to two journal articles (Jones, R. J., & H Andrews, H. (2019). Understanding the Rise of Faculty–Student Coaching: An Academic Capitalism Perspective. *Academy of Management Learning & Education*, 18(4), 606-625; the other in the review stage) and three conference papers and a draft journal paper (out for review). Another VRA awarded to Emblen-Perry in 2017, focused on carbon emission reductions within SMEs, has led to three conference papers and two book chapters.

Funding is also offered at School-level. WBS established a small research grants fund in 2014-15 to support research which contributes to the research strategy and for which other internal sources of funding are not available, for example to pay the costs of pilot studies to support a subsequent research funding application, costs associated with data collection and costs of specific research tools

The Hive, the University and Public library, provides a significant space for researchers both to disseminate their research to the public, through public lectures, and events such as the University's *Images of Research* exhibition (which has run since 2016) but also as a location for research and for impact (see ICS1 Nicholls).

Library Services maintains a publication repository (WRAP – Worcester Research and Publications) and provides access to major citation databases (Scopus and Web of Science), as well as market research and business case databases and UK and international business and economic datasets. It also maintains the Kays archive, which contains papers, board minutes, accounts, mail order catalogues etc. relating to Kay and Co. Ltd and other companies with which it did business.

The School is home to:

- A Business Development Unit that provides support and guidance for local businesses, works closely with the County Council to deliver enterprise support (e.g. through ERDF programmes) and works with staff in the unit to develop research and consultancy opportunities.
- The Media Lab, a student-led business that provides services to business in creating web and social media content. The Lab draws on staff expertise in marketing to support the delivery of the service and creates opportunities for impact development

The School maintains various IT hardware for research purposes (particularly in relation to computing) including a research touch-table, a range of mobile devices, emotive hardware for brain-computer interface research, 3D printer, laser cutter, and a variety of games-related hardware including depth cameras.

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

Collaboration

Staff in the unit have engaged in collaborative research with other HEIs, both nationally and internationally:

- UK collaborations include: Aston (Jones and Loon); Bangor (Ross and Nichol); Birmingham (Bowers); Birmingham City (Bratby); Buckingham (Francis-Smythe); Cass Business School (Loon); Coventry (Emblen-Perry); Gloucestershire (Loon and Warren); Henley Business School (H Andrews); Hertfordshire (Nichol and Loon); Liverpool John Moores (Ross and Nichol); London Metropolitan (Francis-Smythe); Nottingham (Hong); Nottingham Trent (Ali); Roehampton (Ross and Nichol); Sterling (Kasem); Surrey (Jones); Warwick (Hong); York St John (Nichol).
- International collaborations include: Auckland University of Technology, New Zealand (Cox); Babson College, USA (Nicholls); Beijing Foreign Studies University, China (Bell);

Istanbul Technical University (S Andrews); Middle East Technical University (S Andrews); Nanjing University, China (Bell); Newcastle University, Australia (Loon); Open University of Hong Kong (Loon); Perm National Research Polytechnique (Mora-Avila); San Jose State University, USA (Loon); Sapir College, Israel (Jones); South East University, China (Bell); Trinity College, Dublin (Bowers).

Contribution to the research base

Staff in the unit have delivered invited keynote presentations at:

- Summit Forum on Entrepreneurship Education in Universities, Wenzhou University, 2016 (Bell)
- International Conference on the Quality and Assessment of University Student Affairs Administration, China University of Geosciences, Wuhan, 2016 (Bell)
- 8th National Annual Conference of Teaching Logistics in Vocational Education, Nanjing, 2017 (Bell)
- RISKID event, Dutch Embassy, London, 2017 (Taroun)

Other invited presentations include:

- Chartered Association of Business Schools (Sellick); the Employment Workshop of the Migration Mobilities Bristol project (Kasem); a public lecture on Time Management at the Café Scientifique, Oxford University (Francis-Smythe); a public lecture on Multicultural Issues in Marketing for the University of Applied Sciences, Vienna (Gad Mohsen); presentations on technology in higher education to HEA STEM conference and the CABS Learning, Teaching and Student Experience conference (Wilkinson).
- S Andrews has been invited to give workshop presentations at 13 conferences including the BAM annual conference, Birmingham, September 2019; Academy of Marketing Annual Conference, London, October 2018, the EFMD Middle East Africa Conference, Casablanca, November 2019 and the Midwest Academic of Management Annual Conference, St. Louis, October 2018, and a research presentation at the EuroMed Academy of Business Annual conference Malta, September 2018. He has also been invited to give public lectures in METU, Ankara (June 2019); UVAC annual conference November 2018, and the Middlesex University conference September 2018.

Staff have been on the organising committee for national and international conferences:

- S Andrews has acted as organiser of a British Council / Newton Fund Joint UK/TR Conference in Istanbul 21-25 March.
- Nichol has served as a stream leader at the University Forum for Human Resource Development.
- Staff have reviewed conference papers for the American Society for Human Resource Development conference (Nichol), the British Academy of Management Conference (Loon), and the IMRA-IIMB International Conference (Gad Mohsen).

Staff sit on external research committees and steering and advisory groups:

- Chair of the HCS/1/2/ International Human Resource Management within the British Standard Institute 2015-16, representing the UK on ISO TC 260 (Loon)
- Membership of the University Forum for Human Resource Development executive committee (Nichol and Ross)
- UFHRD programmes and qualifications committee (Nichol)
- International University Sustainable Development Research Programme (Emblen-Perry)
- Refugee Entrepreneurship Network (Kasem)
- World Business Institute (Hong)
- Associate membership of the European School of Sustainability Science and Research (Emblen-Perry).

Staff have acted as peer reviewers for the following UK and international research funders: the British Academy and Leverhulme Trust.

They have held the following editorial roles for the following journals/publishers:

- Rezaei is an associate editor of the Journal of Promotion Management and has been a guest editor of the Journal of Retailing and Consumer Services.
- Nichol has been co-editor of a special issue of Action Learning: Research and Practice.
- Loon has been associate editor of the Journal of Economic and Administrative Sciences and the International Journal of HRD Practice, Policy and Research.
- Staff sit on editorial boards for: the Journal of Sustainability Research (Emblen-Perry); the Journal of Services Marketing, International Journal of Hospitality Management and Medical Maestro Magazine (Nicholls); Journal of Global Marketing, Journal of Promotion Management, International Journal of Electronic Marketing and Retailing and Journal of Hospitality and Tourism Insights (Rezaei); Journal of Advertising Research (Mora-Avila).

Staff have acted as peer reviewers for the following journals:

- Organization Science (Bell); Business Horizons (Bell and Wiid); Studies in Higher Education (Bell and Nichol); Journal of Business Research (Rezaei); Industrial Relations Journal (Ross); Journal of Services Marketing (Nicholls and Warren); International Journal of Project Management (Taroun); Journal of Cleaner Production (Emblen-Perry); Journal of Advertising Research (Mora-Avila); Journal of Personality and Individual Differences (H Andrews); Business History (Cox); International Journal of Evidence-based Coaching and Mentoring (Jones); International Journal of Human Resource Management (Loon); International Journal of Health Care Quality Assurance (Walton); Journal of Management Development (Francis-Smythe and Jones); Journal of Systems Research and Behaviour Sciences (Warren); CHI (Bowers); Interact (Bowers); DIS (Bowers). Staff have also acted as reviewers for book publishers including Oxford University Press (Cox), and IGI Global (Rezaei).

Staff have contributed to external research degree programmes as follows:

- Nichol, Warren and Loon have acted as external supervisors on 10 doctoral research degrees.
- Emblen-Perry, Loon, Nichol, Sellick, and Taroun have acted as external examiners on research degrees.

Staff have received the following awards:

- Certificate of Outstanding Paper in the 2019 Emerald Literati Award (Rezaei)
- Fellowship at Hamburg University, Germany (Rezaei)
- Entrepreneurship Advisor Fellowship at Lanzhou Jiaotong University 2018-2020 (Bell)

Contribution to economy and society

Staff in the unit have made significant contributions to economy and society beyond that described in the unit's ICS. Some examples of this are:

- Loon produced a research report for Chartered Institute of Personnel and Development in 2014, [Learning & Development: New Challenges, New Approaches](#) made available to the institute's 150,000 members. The report aimed to help L&D practitioners consider how they can best respond to changes in the external environment in order to improve the effectiveness of their learning practice, and in turn enhance organisational performance. It formed part of a wider CIPD project on L&D.
- Nicol delivered a report for the NHS Leadership Academy exploring NHS Talent Management. The Deputy Director, NHS South West Leadership Academy identified the report as having the potential to shape 'end-to-end talent management in the NHS across the UK'.
- S Andrews has made a significant contribution to the *Case Centre*, a major resource for practitioners in management education. Through his research he has written numerous case studies for inclusion in the case centre, and developed more than 150 overseas case study staff development programmes which have been delivered in more than 30 countries and to a range of professional organisations such as the Chartered Association

of Business Schools (CABS), British Academy of Management (BAM), European Academy of Management (EurAM), Academy of Marketing (AoM) and the European Academy of Operations Management (EurOMA). He has recently published a new book on case teaching and writing and in 2019 produced an Online Interactive Case Study Guide in partnership with the Case Centre, which has since been adopted by more than 300 HEIs across 50 countries.