

<b>Institution:</b> University of the West of Scotland
<b>Unit of Assessment:</b> 17: Business and Management Studies
<p><b>1. Unit context and structure, research and impact strategy</b></p> <p><b>1.1 Structure of research</b></p> <p>The School of Business and Creative Industries (SBCI) provides the institutional home for all research activities in UOA17 alongside UOA34 for Creative Industries which constitutes nearly one third of the School. A further 10 colleagues have been returned to other UOAs, including UOA20 and UOA24. From the business and management side of the School a total of 44 staff are submitted to REF2021. There are strong links between the constituent parts of the School, for example, with collaborations on digital teaching and research and in the co-location of our doctoral student community.</p> <p>This part of the School has experienced two significant reorganisations since 2014 and the creation of SBCI in early 2019. Within the new structure business and management has retained its strong identity and has reinvigorated its longstanding commitment to working with leaders, business, enterprise and professional bodies.</p> <p>These changes have been pivotal for our PhD completions increasing from 3 per annum to 7 per annum. The number of staff with PhDs and engaged in supervision has increased through recruitment and staff development, from around 40% in 2014 to 70% today. We have had 7 staff participate in the UWS Grant Accelerator programme, and 4 in the UWS Crucible programme. These staff are a key target for further support and mentoring to bring on our next generation of research leaders.</p> <p>We have nearly tripled the average annual level of grant income and have recently become the top Business School provider of Management Knowledge Transfer Partnerships in the UK, securing approaching GBP2,000,000 income.</p> <p>The research is currently structured within 4 groupings: (1) Social Innovation, Leadership &amp; Management, (2) Business Innovation and Transformation Technology, (3) Centre for Africa Research in Enterprise and Economic Development and (4) Management and Professional Education.</p> <p><b>(1) Social Innovation, Leadership &amp; Management (SIL&amp;M);</b> Centre Directors <b>Gibb</b> and <b>Harrison</b>.</p> <p>The group includes 18 active researchers, and approximately 36 PhD students.</p> <p>The group has projects ranging from supporting female entrepreneurship in migrant camps, through fair and decent work in health and social care, to Corporate Social Responsibility (CSR) leadership in the private sector. This is seen in funded projects involving <b>Harrison, Gibb</b> and <b>Hassan</b> from the UWS Protracted Crisis Research Centre (PCRC); <b>Crammond</b> with ESS colleagues Sidhva and Kaparounaki on 'Empowering Syrian Refugee Women in Protracted Crisis Situations through Enterprise Education in Jordan'. These all involve training programmes focusing on building resilience through skills development and enterprising education. This grouping accounts for the impact case study in Decent Work.</p> <p><b>Gibb</b> and <b>Ishaq</b> are members of the <b>Oxfam-UWS partnership</b>, which has conducted inter-disciplinary research (in social science, education and health) in fair and decent work (FDW), contributing to policy development for addressing poverty in Scotland with Oxfam. As a result, Oxfam has developed and produced a manifesto and reports influence the Scottish Parliament to maintain and extend progress on paying the <b>Living Wage Scotland</b>. Other examples include, <b>Ishaq's</b> research on equalities themes with the ethnic minorities' staff experiences of academic libraries (<b>SCONUL, Society of College, National</b> and University Libraries). His research is of an applied nature with implications for policymakers, societies, organizations and communities. During his time on the Board of the Scottish Football Association (SFA), Ishaq had significantly advanced equality in all aspects related to the development of the game at both professional and grassroots</p>

level (e.g., the establishment of a para-football league, the only in the world; the achievement of the Advanced Level of Equality Standard for Sport).

A second strand, of the group's work, complementing the first, concerns leadership within Social Innovation. **Harrison's** interests are in Leadership, in organisational learning and crisis, and his text is used in several business schools and is in the top 25% most downloaded e-books in the Palgrave MacMillan collection. **Mackie's** work on Talent Management in Scotland's Public Services resulted in a dissemination event supported by **The Improvement Service** and held in Edinburgh in June 2017 with over 50 human resource management (HRM) practitioners attending from across Scotland's public services.

A third strand relates to social innovation, enterprise and entrepreneurship. **Reilly's** work focuses upon third sector entrepreneurship and employability. This facilitates companies to develop more effective services, which means more people back in work, through Routes to Work, a virtual reality product, as a '3rd Safe Space' to allow vulnerable groups to access workplace environments via VR simulations. **Livingstone** is supporting the development of enterprises in remote and rural areas through the Oak Tree Inn Knowledge Transfer Partnership (KTP), which involves strategic support and digital, social and transformational technologies including developing cloud commerce, digital marketing and virtual tourism and promotions. A direct impact has been the protection of jobs and survival during the COVID-19 emergency, and scope to adapt and thrive thereafter.

A fourth strand focuses on the responsibility in finance and operations. **Guo** conducted original research on CSR, and social and environmental accounting; he was awarded '**Best Developmental Paper**' by the International Business & International Management Special Interest Group at British Academy of Management Annual Conference 2016. **Fletcher** looks into financial literacy (including personal budgeting, inclusion and gender) and accounting, focusing on image and corporate social responsibility/social and environmental accounting and emerging markets. **Kouroukilis** focuses on reconfiguration methodologies for retail supply chains, sustainability assessment of bio-fuel to energy supply chains, knowledge management in the supply chain for new product development, and sustainable performance evaluation in supply chains. **Beloucif** has investigated the links between strategy, corporate reputation and Islamic studies.

Strategically, looking ahead to the UWS plan for future research foci, this group is connected to the United Nations Sustainable Development Goals (UN SDGs) in Growth (Goal 8), Industry (Goal 9), Gender Equality (Goal 5), and Equality (Goal 10).

## **(2) Business Innovation and Transformation Technology (BITT); Directors Frew, and Tarbert**

BITT is an interdisciplinary unit for applied research specialising in knowledge exchange, digital, social, and transformational technologies. It is dedicated to realizing the positive and integrated potential of digital, social and transformational technologies for sustainable business growth, future education, health and wellbeing. There are overlapping applications of Accelerated and Immersive Education - educational innovation integrating digital, social and transformational technologies to enable fully online live to curated education. This allows students to engage, interact and learn via a personalised ecosystem of digital to immersive educational experiences remotely.

BITT builds on a portfolio of research including **StalkerVR** - a pioneering digital and virtual reality project for **Action Against Stalking** (Innovation Voucher (GBP5K) with follow-up Digital Transformation project (GBP10K). **DigitalSelf**, a consultancy project (GBP10K), involved building a major platform to service virtual and augmented reality lifestyles. An enabling ecosystem offering 'intimate immersion' where consumers can virtually placeshift to experience travel and tourism, sport, music and entertainment, arts and heritage, and education.

Knowledge exchange activities play a major role in developing pathways to impact. The original work by **Struthers** and **Johnston** has been pivotal to SBCI's current leading position in KTPs.

This has since evolved to include a large portfolio (GBP776,000) of **UK government** funded management KTPs (mKTP). 'Digital Growth and Training Programme' for North Ayrshire's Enterprise and Business Growth Teams, for example, is to be scaled up for Scotland and UK wide enterprise network. **VisitArran** is a project working with business across Arran. This project integrated VR with interactive TouchCast, promotions and a digital campaign. We are also incorporating applications for virtual and augmented reality for North Ayrshire Council, as part of "**Routes to Work**" **KTP** and with Celtic Football Club (FC) in developing CyberCoaching using accelerated and immersive education applications for nutritional education. **Frew** and **Tzanidis** were shortlisted for educational innovation integrating digital, social and transformational technologies for the Guardian Education Award, Herald Higher Education Awards and Digital Pioneers Awards.

The research of this research grouping is aligned with UWS strategic themes, and the World Economic Forum Centre for the Fourth Industrial Revolution, United Nations' 'Sustainable Development Goals' and Scottish Government's Scottish Technology Ecosystem Review.

Several colleagues (**Conlon, Johnston, Frew, Reid, Struthers, Tzanidis**) have recently secured KTP funding to support the development of impact, with a range of organisations. These include West Coast Construction – a project integrating the Cloud Commerce and Business Transformation approach designed to digitally and technologically transform the company.

Other projects include the inaugural global conference 'Action Against Stalking, Future Events: ExperienceXR' focusing on how transformational DARQ technologies will challenge and change events and event experience, social Isolation and Loneliness - 'New Frontiers in Wellbeing: Immersive Technologies and Digital Dreamscapes', all examples of the future applications of transformational technologies to break digital divide, open education, enterprise and innovation. This thematic grouping is associated with UN SDG Growth (Goal 8), Industry (Goal 9), and Equality (Goal 10).

### **(3) Centre for Africa Research in Enterprise and Economic Development (CAREED)**

**CAREED** (<https://www.uws.ac.uk/research-2021/research-institutes-centres-groups/careed>) was established in 2015 and has 12 academic staff and 15 PhD students. The key mission of CAREED is twofold: a) to conduct applied research on Africa in a range of topics to enhance enterprise, economic development and livelihoods, especially within the agricultural sector; and b) to collaborate extensively with a range of international organisations, including at UN level, who focus on African economic development, and with African diaspora organisations within the UK.

This twin mission and the research outputs of CAREED cut across 5 main research areas: *commodities and trade in Africa; supply chain/logistics and value chain analysis; entrepreneurship (especially female) in Africa; governance and ethics; and microfinance and social business*. CAREED members have interacted, individually and collectively, at different levels of society and economy in relation to Africa. Examples include UN level interactions in the commodities and female entrepreneurship research areas; ongoing research on logistics/supply chains through funded projects in African countries such as Kenya and Rwanda; and in female entrepreneurship both in African countries (e.g., Uganda) as well as with African diaspora organisations in the UK.

The reach of these collaborations is possibly unique among similar Africa focused research centres across the UK. The crucial role of diaspora organisations is often ignored in relation to ongoing research on African economic development, despite being vital stakeholder communities who can raise awareness of the challenges but also the opportunities within African economies).

CAREED also has a strong group of ongoing and completed PhD students who are either from the continent or are studying various aspects of African economic development. These PhD students play an active role in contributing to the Centre including planning the annual conferences and fortnightly seminars. 5 CAREED conferences have been organised to date, attracting a growing audience with high-level speakers from around the world including leading UN experts from UNCTAD (United Nations Conference on Trade and Development); African embassies based in the UK; and African diaspora organisations in the UK.

UN SDGs are relevant to the work of CAREED:

- The *UNSDGs* are key to the research work carried out in the above inter-connected areas by CAREED researchers. Specific SDGs that apply include: 1. (*No Poverty*); 2. (*Zero Hunger*); 5. (*Gender Equality*); 10. (*Reduced Inequalities*); 12. (*Responsible Consumption and Production*); and 17. (*Partnerships for the Goals*).
- SDGs 5, 10 and 12, in particular, are pivotal to the applied nature of the research carried out across: *commodities and trade*; *female entrepreneurship*; and *supply/ global value chains in Africa*. Indeed, having an SDG focus has been a strong factor in steering CAREED to concentrate its research in and across these inter-connected research areas.

**Struthers** is a researcher in the area of commodity price volatility in developing countries. He has collaborated with a number of UN organisations such as the FAO in Rome and UNCTAD in Geneva. In 2015 he was appointed Honorary Consul for Ethiopia in Scotland and in 2018 was appointed Chancellor of Mount Kenya University, one of the largest private universities in Africa.

**Adewole's** research focuses on: Humanitarian Relief Logistics and Supply Chain; Logistics and Supply Chain Infrastructure in Developing Countries; Green Logistics and Sustainable Supply Chain Management. **Nziku** has a particular interest in female entrepreneurship and government strategies/policies for promoting enterprise and innovation in developing countries. She has presented at the **International Council for Small Businesses (ICSB)** Conference and has made several keynote speeches in research conferences, such as the **Think-Tank International Conference on Women Entrepreneurship**. She has also taken part in the United Nations Conference on Trade and Development (**UNCTAD**) Panel on "*Multi-year Expert Meeting on Investment, Innovation and Entrepreneurship for Productive Capacity-Building and Sustainable Development*" where she was invited to speak on Sub-Saharan Female Entrepreneurship. External involvements include: UNCTAD's EMPRETEC programme on female entrepreneurs; the **Global Women Entrepreneurship Project**.

**Gemech** is an econometrician with a research portfolio that includes commodity price volatility and with Struthers has co-authored papers on the coffee sector in Ethiopia and India. **Beloucif's** research focuses on strategy, corporate reputation and Islamic studies. **Hassan** conducts research on environmental accounting, among other research areas and her research paper won 'best paper' at a Cairo University International Conference on Accounting in 2015. **Harrison** conducts research on Leadership in Africa and is chair of the British Academy of Management (BAM) Leadership section and co-chair of the BAM Africa section. He recently secured a grant for studying women in protracted displacement in Nigeria.

#### **(4) Management and Professional Education (MPE) Directors; Turner, Crammond**

This thematic group is associated with UN SDG Education Goal 4 (Gender Equality) and Goal 5 (Equality). **Crammond** is author of a text on entrepreneurship education, and an editorial board member and reviewer for multiple journals in teaching practice fields. From 2018 he was involved in a national, cross-university 'Scale Up' project, aiming to implement an educational and training programme for Scottish businesses. He is a Fellow of the Management and Business Educator (CMBE). **Duff's** research concerns social mobility and accountancy and relations between teaching and research. Given UWS is the UK's leading HEI in widening access, this focus on social mobility plays a vital role in developing accountancy education within UWS. **Gustafsson's** research on entrepreneurial cognition and leadership can be defined as fruitful cross-fertilisation between cognitive psychology, entrepreneurship theory and empirical research in entrepreneurial context. She has links with Faculty of Economics at Moscow State University (EF MSU). **Gillon** researches leadership in education, as well as supporting professional development in Organization Development. **Johnston** researches and writes on the teaching of economics in Universities. **Keegan** researches and publishes in student retention and integration, especially in the context of management education. **Turner** has interests in research in event bidding, has operational leadership in teaching and learning and is an active researcher and promoter of research in this. **Murray's** work in developing human capital in entrepreneurs further complements this group



UWS has worked with BAM in developing the BAM Education Practice Award which recognises inspiring and impactful management education practice. UWS hosted a BAM Teaching Excellence, Scholarship and Impact Symposium in 2016.

## 1.2 Current REF period: Review of REF2014 Objectives

Since REF2014, we have adapted and grown our research activity, in the number and quality of outputs, the size of our PGR community and in almost **trebling grant funding**. Our interest in corporate social responsibility, knowledge exchange and socially relevant projects and research reflects UWS's long-standing values, which align well to the UN SDGs. Recent recruitment has radically altered our staff portfolio with a growing number of early career researchers (ECRs), most recruited because of their fit with current and evolving research areas.

SBCI works in collaboration through its many partnerships with an emphasis upon applied research that contributes to clean economic growth, social innovation and development nationally and internationally. We are multiple-accredited, interdisciplinary business school and the **no. 1 provider of management KTPs in the UK (25% of UK's total number of mKTPs)**. Alongside our growing PGR community, we have a flourishing DBA programme. Knowledge Exchange, Enterprise and Impact lie at the heart of who we are.

REF2014 has been based on three subject groups: **Accounting, Finance and Law** (Financial Accounting and Tax Unit, Management Accounting and Applied Economics Unit, Law Unit); **Management Organisations and People** (Management Unit, Strategy and Leadership Unit, People and HR Unit); **Marketing, Innovation Tourism and Enterprise** (Events and Tourism Unit, Marketing Unit, Innovation and Operations Unit). Therefore, we identified four priority areas in REF2021:

- **Focus Research & Knowledge Exchange** in Enterprise and Innovation, Leadership, Organisational and Performance and People Management and Accounting and Financial Markets.
- **Embed research** with knowledge exchange to achieve greater impact.
- **Internationalisation.**
- **Increase the number of submitted staff** by 100%.

**Focus Research & Knowledge Exchange:** Our 2014 submission included the three small, concentrated groups listed above. These have evolved into the much larger subject knowledge groupings presented above.

**Embed research:** this has been achieved through our **sector-leading uptake** of funding successes for mKTPs and being instrumental for the institutional growth of KTPs to the current **combined portfolio of GBP6,900,000**. These span across technical innovation, people, organisational performance and finance spectrum.

**Internationalisation:** Central to a focused approach in developing the international element of research is our Centre for African Research on Enterprise and Economic Development (CA-REED). Additionally, UWS has been the **first and only Scottish university** to have developed professional training stemming from our research activity for the **China State Administration for Foreign Experts Affairs (SAFEA)** that delivered 23 training courses to more than 500 senior executives from across China (GBP1,200,000).

**Increase the number of submitted staff:** we have more than trebled the number of staff returned. By submitting **34.2 FTE Cat A staff in REF2021** against the benchmark figure of **10.9 FTE Cat A staff in REF2014**, BCI UOA17 has increased the submission by more than three times. This increase is due to many factors including the recruitment of research active staff; institutional staff development programmes supporting staff to complete doctoral study; researcher development opportunities within Grant Accelerator and CRUCIBLE programmes; a formalised approach to providing mentors to support ECRs from within the School; external mentors for aspiring research leaders; allocating increased research allowances to established researchers.

Reflecting the interdisciplinarity of our work, some senior colleagues' outputs are to be submitted to other UOAs (e.g., MacPherson, McGillivray, to UOA24; Johnston to UOA23; Elliott to UOA20). This phenomenal growth in research active staff has occurred throughout a period of significant organizational change, showing our ongoing commitments to supporting research.

### 1.3 Strategy: Next Five Years

As we move onto the next phase of our development our objectives are to:

- Maintain a supportive research environment aligned with UWS strategic goals and UN SDGs.
- Invest in the development of our early and mid-career researchers and providing mentoring support.
- Focus upon our research strengths by investing in existing and emerging signature research groupings.
- Value and deliver high-quality outputs and world-class impact from all stages of the academic career.
- To expand our impactful research, building on the KTP portfolio to support innovation in enterprises across priority sectors (including public and third sector) and communities we serve.
- To develop a new generation of business and management research leaders and researchers, aligned with UWS local, national and global priorities.

SBCI aspires to be the partner of choice for enterprise and our various communities of practice. Due to the pandemic, during 2021, we will renew and refresh our research strategy as we grow the new senior research leadership within the School. Our plan highlights growing recognition of our work with enterprise from CPD, masterclasses, KTPs and creating incubator space to support new businesses. Our aim is to be embedded and leading within the economic ecosystem.

Although the existing research groupings will be central to the UOA's development, we recognise that additional groupings will emerge. As part of this and in addition to the above objectives, we have set the following priorities in further strengthening our research environment:

- Use a targeted approach to recruit new staff and build a significant critical mass of researchers in each area with a goal to produce internationally excellent research.
- As partner of choice for enterprise, we will establish an Enterprise Subject Group, drawing together our existing work with small and medium-sized enterprises (SMEs) and our work with business support professionals to make an impactful contribution to economy and society.
- We will maintain a supportive research environment through structures, workload management and allocation, and culture which demonstrably enables our researchers to flourish.
- Having robust succession planning by investing in staff development for mid-career researchers, our senior leaders of the future.

### 1.4 Achievement of Impact

UWS was created from a merger of the former University of Paisley and Bell College in 2007. The roots of business and management, with strong links to industry and enterprise, stretch back to the creation of the original Paisley Technical College in 1897. Since REF2014 business and management within the School have continued to generate significant knowledge exchange and impact with practitioners and policy makers nationally and internationally. We are embedded within the community of the West of Scotland and nationally with strong relationships with **Scottish Enterprise** and regional **Chambers of Commerce, Inverclyde, Renfrewshire, South Lanarkshire Councils** and with **Ayrshire economic development consortia**. We work with **Chartered Management Institute (CMI)** and the **Small Firms Enterprise Development Initiative (SFEDI)** to provide support to management professionals and training the business support professionals who work closely with SMEs to build efficiency and effectiveness and who will play a major role in the post- COVID-19 recovery.

Although our School Board has oversight and responsibility for impact, a dedicated enterprise group is driving our agenda around upskilling and business support for SMEs. Some of this is through our growing KTP portfolio and some through training business support professionals. The

investment of resource reflects our strategic aim to be partner of choice for enterprise. The KTP programme is supported by a School lead as well as by a dedicated UWS Research and Innovation Business Development Officer.

Our aspiration is to maximise benefits of inter-organisational workplace learning and innovation. This clear impact mission and our focus bode well for our ongoing impact strategy, one that is grounded in knowledge co-creation and shaping practices. While nationally embedded, our footprint is international across the research groupings. All researchers are thus encouraged to consider international impact from their research from the inception of a research proposal through to the dissemination of knowledge and a commitment to monitor and evaluate impact over the longer term. Research and impact form part of the assessment in recruitment and are considered for each member of staff through our MyContribution performance and development process. With recent investment in new posts and strong growth in other areas of activity, research and impact will see investment increase for academics within the School.

#### 1.4.1 Impact Case Studies and Impact Approach

The overall focus of SBCI on knowledge exchange as a key route to impact and its strategic positioning within the sector resulted in the following impact case studies:

***Improving commodities and trade, logistics/supply chains and the role of female entrepreneurship in Africa*** are 3 established and inter-related areas we have had a prolonged impact across. The research underpinning this impact can be identified and measured individually and collectively, and at different levels of society and economy. Examples include **UN level interactions** in the commodities and female entrepreneurship research areas; impact on logistics/supply chains through funded projects in **African** countries such as **Kenya** and **Rwanda** and impacts in female entrepreneurship both in African countries (e.g., Uganda) as well as with African diaspora organisations in Scotland and the UK. The crucial role of African diaspora organisations has been a major element in CAREED's mission as a facilitator or "influencer" in this process.

***Fair and decent work (FDW)*** is a newer area of research, addressing the major global challenge of progressing job quality, living standards and wellbeing. Our research starting in 2016 within, and beyond, the **pioneering Oxfam-UWS partnership** has contributed to a culture supportive of FDW. We have contributed to social policy developments in Scotland concerned with decent work as a pathway out of poverty. Beyond this, among employers, we contribute to a climate of support for progressive Organization Culture Development and change to deliver FDW. This is evidenced in the larger employment sectors such as Local Authorities, and also the harder to reach and influence SME sector, more recently in social care work in care homes for the elderly.

***Knowledge Exchange (KE)*** impact has been developed over years, following from early research that looks at workplace learning within and between organisations, intra- and inter-organisational innovation and relationships within KTPs. Johnston and Struthers were pioneers in linking the well-established areas of research with the world's oldest government-funded knowledge transfer scheme, and through this influencing the rapid development of UWS's current portfolio. This institutional steering has had wide-reaching economic benefits directly through businesses we support and indirectly through the long-term partnerships with these businesses that contribute to the growth of the KTP portfolio and other types of joint innovations beyond KTPs (see the impact case study).

#### 1.5 Interdisciplinary Research

Each of the research groupings thrive because of their inherent interdisciplinarity. We have UOA17 staff engagement in the UWS-Oxfam partnership, and in the teams working with Scottish Funding Council Global Challenges Research Fund (GCRF) projects with the PCRC. We also work with social science and engineering colleagues and CAREED projects, which incorporate logistics and leadership. Although led from within UOA34, the Protracted Crisis Centre pulls together Business alongside Arts & Media, Sociology and Law.

The impact of these efforts to encourage interdisciplinarity may be seen in the outputs of CAREED. For example, **Adewole** and **Struthers** work in logistics and value chains in Africa and **Nziku** and **Struthers** work combining economics and enterprise. Similarly, **Gibb** and **Ishaq's** contribution to fair and decent work within the Oxfam-UWS partnership project team, which also includes, Social Science, Law, Education, and Health.

### 1.6 Open Research Environment

Open access, open data and open platforms are all strategic concerns for UWS, which we as a School and UOA support. Versions of all outputs are made available through the institutional repository, which goes above and beyond the REF open access policy. Collaborative and citizen science projects have great potential in our areas of research, and we are highlighting this as a key area for development across all groupings. While KTPs are the leading edge of our engagement into practice, we are targeting greater public engagement through local, national and international virtual and actual events via non-academic networks and partnerships.

### 1.7 Research Integrity

UWS has a rigorous process to maintain research integrity that includes a multi-level steps to any relevant issues through School and University Ethics Committees. All research projects are submitted for ethical approval and are peer reviewed on methodological and ethical grounds. We also undertake in-school peer reviewing of funded research applications, including a consideration of ethical issues.

## 2. People

### 2.1 Staff Development Strategy

UWS provides a generous provision for maternity, parental, compassionate, domestic and personal leave as well as a policy on flexible working. In the REF period, several members of the school have taken advantage of these arrangements without any detriment to their career development. Central to our staff development strategy is to thus build and maintain a supportive research environment in which excellent research and impact can flourish. The School supports early career researchers and career development at all stages in research careers. We are mindful, throughout, around issues of equality and diversity. Resources, strategy and culture to support our research excellence have been the primary focus throughout this REF period. We have strengthened the visibility of individual PURE profiles, and research presence on platforms like Research Gate and Google. This has helped all staff develop and review research objectives and the School to develop priority areas.

We provide support for ECRs whereby we target output development through coaching rather than mentoring for writing, led by **Gillon** arranging writing workshops. The dialogue on research activity and plans which emerges from these, can help inform on REF goals and more widely evolve the research culture. Seminars on impact have been delivered to PGR students and School staff, as part of our popular school seminar series, augmented by some special seminars on, for example, Business Beyond Brexit.

We nurture new and fresh research leadership within the School, through targeted continuing professional development for aspiring research leaders inside UWS, for example with **Gibb** participating in the research leaders UWS in-house programme; **Hassan** being mentored by **Tarbert**; **Crammond** and **Johnston** being given challenging roles in external networks representing the School in Scotland wide initiatives.

The increased international diversity of staff reflects our commitment to be a School with an internationally leading knowledge exchange position. Most staff in BCI are engaged in active collaborative relationships with researchers in other academic institutions, nationally and internationally. The first international KTP in Scotland with an African partner is one example of our international aspirations.



Complementing our development, recruitment and promotion practices, we support our researchers with research time tariffs in their workload allocation model. Our Divisions are the main units for managing individual research objectives, while the School Research Strategy Group oversees development of the research strategy and culture. The MyContribution process identifies individual research plans and ambitions for outputs, knowledge exchange, impact and generating research income. While the expectation is that staff meet on a regular basis, the processes requires a 6-month and annual review.

Research mentoring plays a vital role. Support is available for any member of staff especially for staff in their first full-time academic position and where our MyContribution process identifies mentoring as an important individual developmental need. An activity plan (workload model), ensures the fair allocation of duties, including appropriate, reduced, teaching loads for the ECRs and those carrying major administrative roles. All research staff are guaranteed research time within the activity plan.

There has been a significant investment and knowledge exchange activities, including KTPs and other engagements with industry to enable ECRs and researchers at different career stages to propel the impact of their research and as the school seeks to develop its impact in the broadest possible sense.

## 2.2 Staffing and Recruitment

Recent recruitment of 32 staff across the school has been at the ECR level. Our School and UOA is recognised to be imbalanced at the Professorial level, currently. Two professors returned to another UOA play vital roles within the entire School by including ECRs in grant applications and developing outputs. We will continue to recruit fresh talent and develop their research capacity and skills well. This is seen in the number of staff we have developed who have been able to successfully move on to other institutions, here still represented in our Category B pool this REF.

## 2.3 Support for Early Career Researchers

**Harrison** is a co-leader of the University wide Early Career Research Network, so we are intimately involved in this at all levels, from the strategic to the practical. We have enjoyed the use of mentoring, probation, appraisal and training, and the unit's implementation of the Concordat to Support the Career Development of Researchers. The participation in the UWS grant accelerator programmes is an example. It is designed to develop and enhance the knowledge and skills needed to develop successful grant applications for external funding agencies. This includes mentoring and an emphasis on female participants, with a ratio of 6:1, contributing to their development **Reid, Burnett, Will, Fletcher, Hassan.**

UWS Crucible is a flagship project to develop research leaders, which runs in some years. It is a programme for early career researchers that aims to provide participants with the time and space to see the bigger picture with relationships which may lead to interdisciplinary collaborations now or in the future. In Crucible 2017 UOA17 participants were **Harrison** and **Reilly** and in Crucible 2020 UOA17 participants were **Leung** and **Crammond**. **Crammond** subsequently developed a cross school research project emerged from this which obtained internal funding. **Harrison** developed the GRFC project in Nigeria. **Reilly** developed 2 KTPs.

Support for our ECRs is available in the form of targeted training, research mentoring, reductions in teaching load during their first three years of appointment and the completion of a career development plan combined with a variety of courses provided by University for their personal and professional development. Subject Groups have systems of peer review for publication and grant applications. ECRs are expected to join one or more groupings and present their work to research seminars.

## 2.4 Academia – Industry Exchange

Our flagship KTP programme is the key pillar of our rich industry engagement, across the three existing research groupings identified above, and it drives wide-ranging industry engagement at the institutional level (e.g., KeyFM Ltd. is now involved in two KTP projects across UOA17 and

UOA12 and has led to a strategic partnership, co-designing ISO Standards for facilities management). Our strategy is to build on this to create KTP clusters with research groupings, resulting in greater research income, demonstrable and measurable impact and to fund PGR studentships. More than 20 colleagues have been involved in KTPs. Further, our long-standing work with CMI, delivering Certificate/Diploma programmes in coaching and mentoring, provides another opportunity for staff to engage with industry. An emerging strand is our work with SFEDI (Small Firms Enterprise Development Initiative) in which we train the trainers, the business support professionals who will play an important part in our emerging from the COVID-19 emergency. This work has been ongoing since 2015 (**Murray, Frew, Burns**).

## 2.5 Research & Impact Rewards

KTP success of staff has resulted in reinvestment into KTP teams to support their further engagement with industry and academia through so-called staff development accounts (e.g., costs of industry-related travel, organising joint events, conference attendance). Some staff have been put forward for rewards based on their research and impact. These include some who received a financial reward. Others have been promoted because of their research and impact, including **Reilly** (to Senior Lecturer) and **Gibb** and **Ishaq** (to Reader).

## 2.6 Research Students

During this REF period, there have been 50 verifiable doctoral completions associated with UOA17 (23.5 submitted to REF4a). This is due to growing demand and a sign of our vision for, and commitment to, research as well as institutional partnerships and collaborative supervisory arrangements exist with Hochschule der Medien (HdM) Stuttgart, Germany. Doctoral students benefit from separate funds administered by the School and each student receives an additional GBP1,000 research funds towards fieldwork and conference attendance in addition to a laptop and networked workstation with laptop dock and monitor. The School, supported by the University's Doctoral College, provides subject-specific support (i.e., doctoral research training including sessions on ethics, fieldwork and practice-based research).

Strategically, we support our postgraduate researcher development through-life from the transition into higher education to employment and later ambassadorial roles. On the latter, we have in this period specifically focused on other academic institutions, enriching their diversity. **Somoye**: Dean of a Business School at a Nigerian University; **Kolade**: Lecturer at Northampton University; **Freese**: Lecturer at Hamburg University of Applied Sciences; **Omeihe**: Lecturer at Edinburgh Napier University. **Afridi**: Assistant Professor in Management at Hail University in Saudi Arabia. **Parajuli**: Assistant Lecturer at Coventry University. **Rahman**: Lecturer at the University of Sunderland. Other employment and ambassadorial destinations have been in employment in various sectors that are relevant to our UOA. **Zhang**: Syndicated Banking Consultant for Chinese Investment Bank in London; **Wang**: Economist in Central Bank of China; **Obasi**: Researcher in Oil and Gas Company in Nigeria; **Isah Dara**: Statistician at UK Office of National Statistics (ONS); **Schoelhammer**: Project Leader Innovation Management Intedis GmbH & Co KG; **Abijo**: started his own business as independent/freelancer to advise start-ups and small businesses on aspects of sustainability businesses; **Reuther**: Executive Director – Continental Network (British Academy of Management).

Several PhD graduates have joined UWS. **Harrison** in Management; **Burnett** lecturer in HRM; **Hofmann** lecturer in HRM; **Khan** Lecturer in Management; **Clark** Lecturer in Management; **Chacha** in HRM; and **Murray** Entrepreneurship. The percentage of staff either with a PhD qualification or studying for one has therefore risen from approximately 40% in REF2014 to 70% in 2020.

Our PGR admissions focus upon the quality of applicants, and alignment with our thematic interests. A thorough induction within the School complements our Doctoral College's programme.

In addition to rigorous progression monitoring, the Doctoral College, in tandem with the UWS Academy, is responsible for generic research training across the University. These training courses are important, especially in relation to training needs assessments and alignment with the

Vitae framework, but students across the Schools of ESS and BCI also need to access more bespoke research training opportunities, especially those related to social sciences and arts and humanities. The University focuses on its strategic priority areas and aligns its provision to the requirements and expectations of the Scottish Graduate School of Social Science and the Scottish Graduate School for Arts and Humanities – UWS is a paying member of both.

Following the creation of two new Schools - Education and Social Sciences (ESS) and Business and Creative Industries (BCI) - in the summer of 2019, there was an expressed desire by both Deans to maintain and extend elements of good practice in managing the PGR student experience built up by McGillivray and Matemba in the then Schools of MCS and Education, respectively, and to find a mechanism to smooth the reorganizational transition, involving staff from what was the School of Business Enterprise. **Hassan**, who was a Reader in the former School of B&E is currently Deputy Director for PGR and mentored by Vice Principal Research, Innovation and Engagement.

The central location of the PGR community facilitates good access to supervisors, although in 2020 most of this has been conducted virtually. The doctoral student community is housed in a central location, around a large, open shared space with self-catering facilities to encourage the less formal aspect of community. The space provides an area in which informal gathering supplements the research seminar programme. The rationale is that not only does this arrangement create a critical mass of doctoral students, but it ensures continuity with arrangements that existed within three schools which merged into two. Such arrangement encourages a truly cross-disciplinary approach with a wide range of visiting speakers and internally delivered seminars. Finally, our development of new and established supervisors involves experienced researchers working with less experienced researchers. For example, **Gibb** with **Zhang**, **Tarbert** with **Tzanidis**, **Ishaq** with **Hoffman**, **Gillon** with **Jeffries**, **Harrison** with **McQuade**, and **Struthers** with **Nziku**.

There is a planned schedule of fortnightly events (research colloquium) held in a shared space and designed for ESS and BCI students (and staff when appropriate). These events include student presentations, a 'research topic' (including ethics, publication, vivas) and supportive discussion about PGR related matters. Each PGR student is expected to present at least twice during their studies. First, within the first 12 months to present to others besides the supervisors the area of research interest and then later after data collection (second/third year) another paper/presentation to share how the research has progressed and what findings are emerging. This is also accessible remotely, and regular "teachmeets" have taken place during the COVID-19 lockdown.

## 2.7 Equality & Diversity

The School applies all University equality, diversity and inclusivity strategies and processes to create a diverse and inclusive research culture. All researchers complete Unconscious Bias Training and relevant research integrity training. The Dean sits on the University Equality, Diversity & Inclusivity Committee and ensures updates are cascaded quickly to all staff. The Dean is also the University's "senior disability ally" and works with colleagues across all the Schools, championing the commitment to disability equality through development of a Disability Staff Network. Staff with protected characteristics (e.g., disabilities) are supported through Occupational Health to access enabling equipment, including IT, to support them to reach their full academic potential including in research.

Almost one third of our 34.2 FTE Cat A returned researchers are female, which closely reflects the proportion of female colleagues within the School. Staff on parental leave have optional 'keeping in touch' days, popular with those who have delegated research project leadership. The School provides an informal but flexible approach to support carers including scheduling of learning and teaching activity and no school meetings before 9.30 am. Indeed, the School supports all staff with flexible working arrangements where the business need can support this. Staff returning from prolonged absence are encouraged to make use of a central fund to support the re-establishment of research.

All applications for promotion are viewed equally irrespective of status, mode of work, or protected characteristics. For example, a lecturer combining part time work with caring responsibilities

achieved promotion to reader, recognising the high quality of research outputs rather than quantity. The School's professoriate consists of 5 males and three females with 3 female readers and two males. Six staff have completed the Aurora Women in Leadership Programme.

We aspire to be a diverse and inclusive research community and more than one third of Cat A returned researchers are from ethnic minorities from a corresponding workforce of one quarter. This represents a significant increase since 2014 and reflects a more inclusive approach to recruitment and staff development support for new colleagues alongside investment in the development of external research networks. Ishaq is co-chair of the BME staff network. The age range of our Cat A staff extends from 28 to 70 years. Nineteen of our researchers are older than 50. Recent recruitment has seen an influx of 18 early career researchers, with potentially another 9 ECRs to be appointed in a recruitment round. We are also targeting mid-career researchers for staff development to ensure effective succession planning and to promote a diverse research leadership team.

### 3. Income, infrastructure and facilities

#### 3.1 Research Income and Funding Strategy

Aligning with our aspiration to be the partner of choice for knowledge exchange, enterprise and to build our reputation for research led impact, KTP funding remains a top priority. We have been extremely successful in this area. We now have KTPs with 12 partners; West Coast Group; The Oak Tree Inn; IPIG; ACS Clothing Ltd; Consult lifts; Albion Environmental Ltd; Key FM; O'Neill Gas; Routes to Work; FarmTrack; Lochlie Construction; MODO; Sonas; ISO. This includes the first Africa Agriculture KTP in the UK – also the first international KTP in Scotland) and **#1 in the UK for the BEIS funded mKTPs** with 8 awarded mKTPs currently. A KTP project, supporting Africa Agriculture is the first KTP in Scotland to be developed with an African partner.

Complementing the above, research income includes a range of research projects that are funded by national, local and international organisations. Examples of this include Action Against Stalking (GBP7,500; now resulting in the launch of the first of its kind Centre of Excellence in this area in the UK), Poppy Scotland Project (GBP22,000), GCRF funding for women in protracted displacement (GBP15,000), British Academy COVID-19 Special Grant (GBP10,000), Network on the Intersectionality of Women Entrepreneurs. (GBP15,000), World Bank Sponsor: World Bank (GBP30,664), Lottery Fund/Natural Heritage Scotland. (GBP10,000), Chartered Accountants in Australia and New Zealand (AUD20,000)

Processes to support this include a School level peer review of grant applications and a dedicated support from a professional research support office. The School's research from non-KTP funding has also secured research contracts with award values as shown below, the great bulk of these in UOA17. The School had a combined total of GBP298,000 in period 2008-2014. This period thus shows an increase, without including the significant income from KTPs secured in 2020 (approximately GBP2,000,000).

The research income (4b) for REF2014 for UOA19 was GBP298,000 and for REF2021 UOA17 this has increased to 334,590, an increase of 12.3%. The plan is to emulate the recent successes of staff members working in interdisciplinary teams, for example **Struthers**, GBP339,235 grant from the Department for International Development (DFID)/Innovate UK in 2019 has co-investigators who are submitted for UWS in UOA7 and UOA11.

Colleagues within UOA17 have acted as co-investigators in projects led by PIs within the School, but submitted to other UOAs, including the Centre for Culture, Sport and Events (CCSE), the GCRF-funded PCRC and the UWS Immersive Centre. Core to our School's funding strategy is to invest significantly in staff development. There are four highly active, research intensive, income generating centres located within the School with three submitted to other UOAs. In the 18 months since the School was created, a growing number of opportunities have arisen for ECRs to work closely with colleagues in the various research centres as co-investigators (i.e., buddy system)



which is central to their development and to the School growing grant income in all UOAs. Mentoring, grant writing workshops, pump-priming and the sharing of successful grants are all part of our developing competence in successful grant writing to complement the significant success of our KTP portfolio.

### 3.2 Organisational Investment

As a School with a desire to build its reputation through impact arising from its research, the focus upon enterprise funding is a high priority, with dedicated leads in KTP, enterprise and CPD, respectively. The School is at the centre of academic leadership within the UWS Student Innovation Hub initiative created in 2020 that will see **approximately GBP500,000 worth of investment in innovation spaces**. Our strategy for developing other sources of research income crosses the full breadth of our research groupings and we prioritise a collaborative and interdisciplinary approach to research bids with partners inside and outside the UK to maximise our opportunities. Processes to support this include grant writing workshops, a School level peer review of grant applications and dedicated support from a professional research support office.

### 3.3 Support Staffing and Infrastructure

The School has a dedicated member of the professional services staff to support research. Knowledge exchange activities within the school are supported essentially alongside a vibrant group of scholars who engage in a wide range of enterprise activities. This complements UWS's:

- Research Services team (providing advice, costing and management of grant applications jointly with academics and School-level support member of staff),
- KTP Centre (managing KTP projects through-life in liaison with the School-level support member of staff),
- CPD Centre (engaging with the School-level support member of staff to monitor expertise development and availability) and
- Doctoral College (engaging with School-level support member of staff for progress monitoring purposes).

### 3.4 Specialist Research Infrastructure for Impact

The **UWS Immersive media lab** (GBP205,000 investment) is located in Paisley where our VR headsets, cameras, specialised computing equipment are located alongside the **Fujitsu Innovation Lab** (GBP20,000 investment). Several of our UWS Immersive doctoral research students benefit from this dedicated research facility where they are co-located as a distinct research cluster. The labs have hosted two research symposia and VR exhibitions in 2017 and 2019 with international guests such as Catherine Allen from **Limina Immersive** (CEO of the UK's only VR cinema), Dan Tucker curator from **Sheffield Docfest's Alternate Realities** and Tobey Cofey, head of digital development at the **National Theatre**.

In addition to the above specialized facilities, our staff and research students benefit from access to a research seminar room where regular seminars are hosted by both the research students themselves and the research centres including the Centre for Culture, Sport and Events, PCRC, the Scottish Centre for Island Studies and the Centre for African Research on Enterprise and Economic Development, as well as the Business and Management seminar series.

### 3.5 Cross-HEI Infrastructure Collaboration

Our institutional partnerships with Universities of Applied Sciences in Germany bring together a formidable array of facilities that are used by our PGR students. While the nature of our research does not require substantial physical infrastructure, benefitting from complementary facilities that exist in Germany is of benefit for students who engage in research that due to a particular angle in the topic of research need facilities in both partner institutions (including access to national databases, facilities and academic/industry consortia).

### 3.6 In-kind Benefits

All KTP companies and industry partners provide in-kind benefits to UOA17. Our 'Gold-Silver-Bronze' approach to evaluate industry partnerships (see REF5a) includes business and enterprise

mentoring, contributions to education programmes and access to data and facilities (e.g., KeyFM developing smart built asset management testbed to benefit UOA17 and UOA12).

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

##### 4.1 Research Collaborations, Networks and Partnerships

We collaborate, engage with or develop relationships with networks and partnerships through several research groupings or initiatives, including the Oxfam-UWS partnership, CAREED, CMI, SFEDI, and the PCRC. External partners include **British Academy of Management (BAM)** as active members (Johnston, Gillon, Harrison, Telford, Jeffries) on BAM committees as well as attending conferences. UWS has also initiated the creation of the BAM Continental Network now led by one of our PhD graduates. Other research collaborations are created through the **Chartered Institute of Management (CMI)** (Burns, Ishaq, Will, Greener and Telford) and the **Small Firms Enterprise Development Initiative (SFEDI)** (Murray). **Ishaq** is an Equality and Diversity Advisory Board Member of the Scottish Football Association (SFA) since 2017; CIMA (Hassan, Tarbert); CIPD (Hoffman, Quinn, Gibb); DMI (Digital Marketing Institute) (Tzanidis).

Internationally, collaboration focuses on joint PhD supervision and exchange visits with research staff (e.g. **German** partner institutions; **Siberian Transport University**, which played a key part on securing a significant relationship with **SAFEA**). Further, **Gustaffson** has developed links with the **Faculty of Economics at Moscow State University (EF MSU)** and **Karelia University of Applied Science, Joensuu, Finland**; **Gibb** is a member of the **Social Innovation Academy**.

##### 4.2 Engagement with Users, Beneficiaries and Communities

The engagement emerges from the above research collaborations and specific external roles staff have developed over the years. **Livingston** is a member of the Digital Skills Strategic Advisory Board - commissioned by the Scottish Funding Council (SFC) to provide a report to the Government on digital skills development and education links with industry. **Telford** is on the Executive Committee of the Academy of Marketing. As a CMI Accreditation Centre, the largest in Scotland, with full Educational approval to offer CMI qualifications we engage with managers as a community through education programmes. We are currently working towards obtaining the Chartered Manager Assessment Centre status. Various colleagues who are members have obtained the membership via individual application and assessment. We run various events under the UWS/CMI banner, organising and operating these events ourselves.

We are the only university in Scotland approved by the Institute of Enterprise and Entrepreneurs (IOEE) and Small Firms Enterprise Development Initiative (SFEDI) to deliver its Diploma in Business and Enterprise Support, relevant to organisations with a wider economic development remit. We have full membership in Chartered Accreditation of Business Schools (CABS). As part of this membership, we have opportunities for staff to engage in a range of CPD, sector wide conferences/conversations. Staff within the School have the opportunity to obtain the CMBE (certified management and business educator), a recognised professional designation and framework for CPD. The School is currently reapplying for the Small Business Charter (SBC) which is an award for business schools recognised for their excellence in supporting SMEs. It provides business schools with a framework to deliver nationally recognised business support.

We have over 50 BAM members in the School who include early career researchers, mid-career researchers, experienced academics, and doctoral students. Some of the members also hold significant positions in British Academy of Management. **Gillon** is a member of the council; **Harrison**, the Chair of the Leadership and Leadership Special Interest Group and Track Chair of African Studies and **Jefferies**, the Chair of the Organisational Transformation, Change and Development Special Interest Group.

##### 4.3 Contribution to Economy and Society

Considering the Innovate UK assessment of **GBP7.5 return for every GBP1 invested in KTPs**, our major contribution to the economy and society across the UK and internationally stems

from knowledge transfer and CPD activities. In addition, several colleagues engage in activities that further our significant contribution to economy and society. **Talbot's** research about the entrepreneur as the driver of economic growth of smart specialisation informed the development of Dumfries' Midsteeple Quarter as a community-led regeneration effort through Dumfries High Street Limited. The Council amended its Town Centre Development plan and this experience also influenced the Scottish government nationally. **Carnicelli**, has through the School contributed to **The School Learning Community** project of the Renfrewshire Council; Events and Tourism service; learning Projects with Renfrewshire Council; the Glasgow Rocks Basketball project; and Development of an Impact Instrument for **the Lochwinnoch Arts Festival**; and development of the **Scottish Marine Science strategy**. **Smith's** research in the fields of entrepreneurship, leadership and criminology can broadly be unified under the rubric of applications and settings of entrepreneurship, and crime prevention in the food chain, which has informed both agriculture industry and policing policy. **McKinstry's** research in business and financial history, which contributed to the **Paisley 'City of Culture' bid in 2018**, alongside **Frew, Ding** and others. **Borodzicz's** research, on the other hand, particularly focusing on crisis and risk management, has informed the development of BS 11200:2014: Crisis Management. Guidance and Good Practice.

#### 4.4 Discipline, Interdisciplinarity and International Priorities

Our research groupings which relate to local and international (UN SDG) agendas are specifically designed to enable our contribution to the sustainability of the discipline, support for and exemplars of interdisciplinary research, and responsiveness to national and international priorities and initiatives. Engaging in research and innovation in close collaboration with the industry that leads to publishing highly impactful outputs, balancing discipline specifics and interdisciplinarity, is the main mechanism through which we enable vibrancy of our contribution to the discipline. This approach enriches research-informed teaching, providing the platform for PGR opportunities. We encourage cross discipline collaborations within and out with the divisional structure. We are consciously seeking to link these up through interdisciplinary themes concerned with, for example, digital and social innovation, most clearly evidenced in the KTPs we have and the scope of our future groupings.

Our international priorities will embody the key SDG themes we address in our groupings, with our priorities being as follows: (1) developing further our work in Africa, especially around agriculture and female entrepreneurship; (2) linking in research projects to our teaching led engagements with China, combining digital and social innovation; developing fair and decent work research projects with international partners.

#### 4.5 Wider Influence and Contributions

Staff have editorial roles in a range of journals; The Journal of Social Business, Journal of European Industrial Training, Leadership and Organization Development Journal International Journal of Intellectual Property Management, Humanities and Social Sciences Communications, International Journal of Business Research and Management, Industrial Marketing Management, Journal of Risk Research, Meditari Accounting Research.

Nziku has well-established relationships with the following institutions: University of Dar Es Salaam Entrepreneurship Centre (UDEC), Mzumbe University, Tanzania; Hochschule Bonn-Rhein-Sieg, Germany; Maastricht School of Management, Netherlands; and in advising potential women entrepreneurs in Scotland and in Africa in a mentoring capacity.

Our UOA has contributed around 128 conference papers in the period. We have 9 instances of media coverage, and 9 of public engagement. 18 talks have been given by 9 staff. 4 are members of boards, and 7 report having done consultancy projects.

Examples of our Industry connections are through CPD and Consultancy: for example, with North Ayrshire Business Gateway short CPD 'Digital Growth and Training Programme' for North Ayrshire's Enterprise and Business Growth Teams. A StalkerVR - a digital and virtual reality project for Action Against Stalking (Innovation Voucher (GBP5,000) with follow-up Digital Transformation

project (GBP10,000). Also, DigitalSelf, a consultancy project (GBP10,000) building a major platform to service virtual and augmented reality lifestyles. An enabling ecosystem offering 'intimate immersion' where consumers can virtually placeshift to experience travel and tourism, sport, music and entertainment, arts and heritage and education.

VisitArran – project (GBP17,000) working with a series of exceptional business across the island of Arran. This project integrated VR with interactive TouchCast, promotions and a digital campaign. This highly successful project demonstrated by the metrics that saw the promotion and digital campaign drive and increase new visitor traffic by over 177,000 over six weeks.

City of Culture 2021 - Project developing digital skill sets working with local authority and third sector groups. Including new web site build, social media marketing and interactive touch training and development (GBP17,000).

Accelerated and Immersive Education - educational innovation integrating digital, social and transformational technologies to enable fully online live to curated education. It allows students to engage, interact and learn via a personalised ecosystem of digital to immersive educational experiences from the comfort of their home.

Examples of conferences, Media and others include:

- Keynote for Action Against Stalking Conference - Cyberstalking 'iPredator to Virtual Stalker: The Rise of DARQ Dreamworlds' interviewed BBC and STV Scotland Tonight.
- Keynote for Royal Highland and Agricultural Society of Scotland (RHASS) – 'Future Events: ExperienceXR' focusing on how transformational DARQ technologies will challenge and change events and event experiences. In wake of COVID-19 the focus and content of this keynote has become highly apposite.
- Keynote for Open University and Glasgow University Conference on Social Isolation and Loneliness - 'New Frontiers in Wellbeing: Immersive Technologies and Digital Dreamscapes'.
- McKinstry was a substantial contributor to the BBC documentary "*The Town that Thread Built*".
- InstaVR - Interview for one of the global leaders in virtual reality technologies 'Societal Transformation via Digital and Transformational Technologies' highlighting the future applications of transformational technologies to break digital divide, open education, enterprise and innovation.
- Accelerated and Immersive Education – educational innovation integrating digital, social and transformational technologies and shortlisted for Guardian Education Award, Herald Higher Education Awards and Digital Pioneers Awards.