

<b>Institution:</b> York St John University
<b>Unit of Assessment:</b> Allied Health Professions, Dentistry, Nursing and Pharmacy (UoA 3)
<p><b>1. Unit context and structure, research and impact strategy</b></p> <p><b>Context and structure</b></p> <p>York St John University (YSJU) has delivered health-related professional education for over 40 years, and health-related research is primarily conducted across two schools: Education, Language, and Psychology (ELP; Counselling and Mental Health) and the newly formed School of Science, Technology and Health (SSTH). The latter consists of four distinct subject areas: Biosciences; Allied Health; Sport and Exercise Sciences; and Computer and Data Science. The outputs submitted within UoA3 were produced by staff from Counselling and Mental Health (CaMH), Biosciences and Allied Health.</p> <p>Over £10m of infrastructure investment has occurred since 2014, including £1.1m to develop new Biosciences laboratories and a further £400,000 to double capacity within this research and teaching space. In the process, Physiotherapy was relocated with expanded research facilities. Recruitment of excellent early career and experienced research staff into Biosciences and CaMH has substantially enhanced our research capacity. The formation of the Institute of Social Justice and establishment of collaborations with local NHS Trusts and charities are enabling sustainable, high-quality, impactful research to be undertaken.</p> <p>Our UoA3 REF2014 submission included six staff (5.5 FTE), 21 outputs and two impact case studies. A third of these outputs were world-leading and internationally excellent (4.8% = 4*; 28.5% = 3*). Our research environment was considered conducive to producing internationally recognised research (62.5% = 2*). However, since REF2014, significant changes in personnel and organisational structure have occurred, resulting in a shift away from previous research themes. All personnel submitted to UoA3 in REF2021 have either joined YSJU since 2014 (61%) or gained significant responsibility for research (SRR) status since the last REF. Personnel changes, coupled with the major institutional structural reorganisation, strengthened our capacity to produce world-leading and internationally excellent research through the appointment of new staff and investment in the physical environment and research resources. It enabled the unit's research to be reorganised into three coherent themes:</p> <p>(1) Disease Detection and Prevention (DDaP; Baumgartner, Odell, Taylor, Kavanagh).  (2) Health and Wellbeing (HaW; Laver-Fawcett, Boyes, Sinani, Spring, Bryan, Purton, Thompson, Yoward)  (3) CaMH (Charura, Hobman, Edwards, Gabriel, McGivern, Shepherd).</p> <p>Our current REF2021 submission includes 18 staff (17.4 FTE), 44 outputs and two impact case studies, reflecting the substantial recruitment undertaken over the last six years.</p> <p><b>Research and impact strategy</b></p> <p><u>Progress in research and impact since REF2014</u></p> <p>The strategic aims of our REF2014 submission and key achievements against these are summarised below:</p> <ol style="list-style-type: none"> <li>1. To promote research as a key form of learning: All research staff are either higher education academy fellows or senior fellows, reflecting YSJU's emphasis on excellence through effective research-informed teaching. Engaging students in research co-creation with academics is an important strategy to enhance knowledge transfer and nurture the next generation of researchers. This enables students to gain valuable real-world research experience and has been highly successful, as evidenced by the co-production of outputs (11% of journal outputs include undergraduate students as co-authors; InCites), positive student feedback and enhanced student employability. This is exemplified by the occupational therapy team, where a strong track record of student involvement in primary</li> </ol>

research and service evaluations with community partners (e.g., City of York Council Health and Wellbeing Board) has resulted in co-authored national and international conference presentations and peer-reviewed journal publications (Spring, Laver-Fawcett). Physiotherapy also embedded collaborative research opportunities, generating outputs with students including service evaluations (York NHS Hospital Physiotherapy; Purton) and peer-reviewed journal articles (Yoward). Interdisciplinary Masters level research conducted in Biosciences, with colleagues in Sport and Exercise Sciences, was also published (Kavanagh).

YSJU's Students as Researchers programme, which supports undergraduate students to participate in research projects outside their degree, has provided further opportunities to engage students with research. Enhancing collaboration with external research and service evaluation partners (including York Foundation Hospital NHS Trust, Leeds and York Partnership NHS Foundation Trust and City of York Council) has enabled development of crucial community strategic partnerships and increased the accessibility of our research for end-users.

2. To create a critical mass of sustainable research and increase the percentage of staff with doctorates: In 2014, YSJU invested (£1.1m) in the development of Biosciences. This included construction of teaching and research laboratories and recruitment of research active staff with doctorates (57% of whom are submitted to REF2021). A further £400,000 investment in additional research and teaching laboratories has doubled available laboratory space (January 2021), enabling two recently appointed early career academics to develop research profiles over the next REF cycle and contribute to the generation of critical research mass. Physiotherapy also benefited from investment, including the purchase of a diagnostic ultrasound machine.

At the REF2021 census date over 50% of academic staff from SSTH now hold a doctorate which is a significant improvement from the previous REF cycle, where 37.5% of staff held doctorates. For research income, a total of £67,240 was generated between 2008 and 2013, while a total of £189,240 has been generated since 2013, confirming our improved ability to attract external funding.

3. To achieve research degree awarding powers (RDAP) with increasing numbers of students and high completion rates: Prior to March 2015, research degrees were awarded through an agreement with the University of Leeds. The awarding of RDAP to YSJU represents a significant milestone. It provided impetus and resources to improve our research infrastructure and training capabilities. In REF2014, UoA3 recorded a total of 6.5 research doctoral degree awards. In the REF2021 cycle, eight PhD postgraduate researchers (PGRs) were supervised by UoA3 staff to completion, of which four were solely supervised by UoA3 staff and four co-supervised with colleagues from other units. When this co-supervision is accounted for, 5 research doctoral degrees were awarded in UoA3. This cycle, a higher completion rate has been achieved and there are currently eight doctorate students assigned to supervisors in UoA3, representing our largest cohort to date. The recent establishment of NHS clinical research fellowships with two of our NHS Trust partners is enhancing our capability to attract talented PGR students, and it will provide further opportunities for staff to achieve sole supervisor status.
4. To engage with and influence research locally, nationally, and internationally: Staff are engaged with informing research policy, directing research endeavours and conducting scholarship activities at local, national and international levels. Through membership of advisory boards and organising committees, academics have successfully influenced research direction, approaches and wider policy. By serving on grant review panels (e.g., the National Institute for Health Research [NIHR], the Physiotherapy Research Foundation, the Australian National Health and Medical Research Council and the UK Medical Research Council), academics utilise their research expertise and demonstrate high reputational standing within the research community. Staff are actively involved in peer-reviewing book chapters, journal articles and conference proceedings, including editorial board membership

(e.g., on editorial boards for *Health Information and Libraries Journal* and *Annals of International Occupational Therapy*). Several staff hold honorary positions at external universities including Bryan (Visiting Professor, University of Warsaw), Thompson (Associate Professor at SOMT University of Physiotherapy, Netherlands), Odell (associate scientist, University of Leeds) and Spring (Visiting Professor at Pacific University Oregon, USA). Staff expertise is acknowledged by membership on national and international guidance panels (e.g., developing advanced clinical practice for physiotherapists in Netherlands, Thompson). Launch of the institutional repository Research at York St John (RaY) in 2015 enabled an increase in accessibility of our research outputs. The percentage of our open access research outputs has increased from 5% (REF2014) to 46% (REF2021) (InCites/Web of Science), and further efforts to increase this are underway.

5. Research activity through effective research management, tied to work planning systems and exceptional learning and teaching:

Institutional level: Research at YSJU is led by the Pro Vice Chancellor for Research and Knowledge Transfer, who is supported by School Research and Knowledge Transfer Leads (SRKTLs) and UoA Leads. As members of the University Research Committee, which provides oversight of the university's research, SRKTLs are responsible for driving strategic research development, while ensuring research integrity and ethical standards are maintained. The central Research Office (RO, established 2018) is responsible for overseeing research governance and compliance, supporting grant applications, managing the PGR student experience, coordinating staff research training, and monitoring school research performance. This has helped to increase and diversify grant applications from within UoA3. The work of the RPO is complemented by the Business Development and Knowledge Exchange Office (BDKEO) which is responsible for supporting schools in increasing the range and scope of applied research, business development and knowledge exchange. The BDKEO is a key conduit for creating and evaluating impact and public engagement related to UoA3 outputs.

Researcher level: Our success in increasing research activity is evidenced by the increased number of staff being returned in this REF2021 cycle (18 staff; 17.4 FTE), with more than double the submitted outputs (44), compared to REF2014 (six staff, 5.5 FTE, 21 outputs). YSJU's academic workload allocation model stipulates an upper limit of 450 hours per year face-to-face teaching activities to ensure time is dedicated to research. Staff work plans are reviewed annually through the performance development review process, where supported research activities are aligned to the strategic priorities. New staff are supported to complete the research continued professional development (CPD) programme, which is aligned to the Vitae Concordat to Support the Career Development of Researchers (YSJU is a signatory). This standard directly informs our approach to staff development, which recognises that, although a core set of personal and professional skills underpins all successful research careers, the development needs of staff vary depending on their stage of career and research area and must be individually assessed. The training programme includes over 40 CPD sessions aligned with the four core Vitae competency areas, delivered by our professoriate and other external providers. Several themes are targeted specifically to early career researchers (ECRs), as illustrated by the "Open and Accessible Research" workshop that coincided with the introduction of our new open data repository service Research at York St John Data Repository (RaYDaR), aiming to increase the impact and transparency of research at YSJU.

#### Current approach to research and impact

Our impact strategy since REF2014 has been primarily focused on growing research capacity, coupled with mentoring ECRs, with aligned interests of improving the overall health and wellbeing of individuals and societal groups. There were seven elements to the strategy: **(1)** research impact consultation between staff with key beneficiaries; **(2)** raising awareness of the importance of research impact through integration of impact considerations in staff personal research plans; **(3)** involving key beneficiaries and audiences in initial planning and development

of research; **(4)** nurturing research partnerships with key beneficiaries; **(5)** engaging beneficiaries in the process of establishing impact; **(6)** ensuring that UoA3 research informs the CPD portfolio offered by the schools and **(7)** working with YSJU's marketing department to ensure that the impact of UoA3 research has a positive media profile.

Strategy implementation can be illustrated in two main ways:

First, by two new impact case studies. One of these relates to the impact of research undertaken in the Counselling and Mental Health Centre (led by Gabriel). This focuses on the mental health and wellbeing of people experiencing a range of disturbances to circumstance, including mental ill-health, domestic or partner violence, bereavement and anger management training. The other (led by Laver-Fawcett) explores the benefits of two occupational therapy assessments for older people; one developed entirely at YSJU and the other a substantially improved second edition of an established assessment.

Second, by strengthening and supporting burgeoning research areas where significant future impact is likely. This is exemplified by current research within Biosciences exploring the utility of biomarkers for assessing and monitoring human health (Kavanagh, Odell and Taylor).

Against this backdrop, our REF2021 UoA3 submission reflects research performed within (a) Biosciences (four staff, 4.0 FTE), (b) Allied Health Professions (eight staff, 7.4 FTE) and (c) Psychotherapy and Counselling (six staff, 6.0 FTE). These staff are aligned to three distinct research groups within UoA3: DDaP, HaW and CaMH:

1) Disease Detection and Prevention (DDaP): This recently established group hosted within Biosciences is a central hub for integrating cross-disciplinary, multi-school research activities where a biological read-out is desirable. This is evidenced by strong collaborations with Sport (based around quantifying the benefits of exercise at the cellular level) and Education (evaluating biological markers of chronic and acute stress). Research is focused on understanding the aetiology of non-communicable diseases including cancer, cardiovascular disease, dementia and immune disorders. Through the sub-groups of Biomarkers in Health and Disease, Cancer and Genotoxicity, and Microbiome in Action, DDaP explores methods of detecting and characterising changes in relevant biomarkers, alterations to cellular and genome architecture and most recently the public health risk of environmental pathogens. Research activities are further supported by the recent acquisition of specialist equipment (£16,900) for biomarker analysis.

2) Health and Wellbeing (HaW): This is a more diverse theme, encompassing several groups from across the UoA, including Occupational Therapy, Physiotherapy and Health Studies, all aligned to improving public and patient health. Research activity is broadly divided into support and rehabilitation projects and the development and implementation of healthcare assessments.

Support programmes are epitomised by the Refugee and Asylum Seekers Project, established in 2016 by Spring and involving close links with existing community support groups. Research was undertaken by staff collaborating with undergraduate students through our Student as Co-researcher (SCORE) group project approach. This provides meaningful research opportunities for students and staff to collaborate with community partners and is aligned with the Institute for Social Justice. Related studies involved 42 students between 2016 and 2020 and included evaluating the value and meaning of a community drop-in service for asylum seekers and refugees. Academics (led by Spring) were awarded £5,000 quality-related (QR) funding to develop and evaluate a craft and cooking group for women accessing a community refugee project. A further £6,000 was awarded from the university's research development and innovation fund to set up a local community allotment in York. This funding enabled landscaping work and the purchase of gardening equipment, furniture and a greenhouse. The allotment is used by members of Refugee Action York and is supported by YSJU staff and students, with part of the allotment managed by the YSJU Occupational Therapy Society. It is used for teaching and research and remains accessible to other service users and community members. Current research explores the value and

benefits of using the allotment for refugees' health, wellbeing and occupational lives. Physiotherapy staff (Thompson, Purton, Sinani, Yoward, Boyes) contribute to the design and implementation of community and hospital rehabilitation programmes, particularly focused on upper limb function and mobility. The importance of adverse development and ageing on language, communication and cognition is also reflected within our research portfolio (led by Bryan).

Assessment and outcome measurement research (led by Laver-Fawcett) forms an impact case study. Here, research has facilitated improvements to the Structured Observation Test of Function (SOTOF) and enabled the publication of an open-access second edition. This has directly benefited occupational therapy assessment of older people with neurological problems and aids patients' insight into their functional problems and abilities. The Activity Card Sort-United Kingdom (ACS-UK), developed at YSJU, is used in health and social care settings to assess older people's engagement in domestic, leisure and social activities. The development and evaluation of ACS-UK has provided opportunities for several groups of undergraduate and pre-registration masters occupational therapy students to undertake collaborative research, presented at a European occupational therapy conference and published in *British Journal of Occupational Therapy*. ACS-UK and SOTOF SCORE projects have been undertaken with external collaborators including Age UK York and Dementia Forward. Knowledge transfer was demonstrated by enabling Eden Marrison, an occupational therapy clinician formerly based at York Hospital, to complete an MSc by Research supported by a £1,000 Council for Allied Health Professions Research (CAHPR) grant and a further York Hospital grant. QR funding has supported the evaluation of SOTOF and ACS-UK in occupational therapy practice in two NHS Trusts.

3) Counselling and Mental Health (CaMH): This group, centred around a community mental health clinic, represents our most well-developed and impactful research in this submission and will remain a critical source of research activity moving forward. Since opening in mid-2016, the YSJU Counselling and Mental Health Centre (led by Gabriel) has engaged over 800 citizens, addressing key areas of mental ill-health and challenges in living, including domestic violence, anger management and bereavement. YSJU recently committed to expansion of the centre by allocating the 32–34 Clarence Street premises for refurbishment and enlargement. The recruitment of Charura as professor of counselling psychology in 2019 further exemplifies YSJU's commitment to supporting research in CaMH, through working with refugee and asylum seeker groups. Peer-reviewed grants obtained by staff in this group include: PRaCTICED, £450,000 multi-university randomised controlled trial (with Gabriel as a co-investigator), of which £22,000 funding came to YSJU (reported as general income), and a Feoffees' grant (£10,000) to support a research project with Independent Domestic Abuse Services (IDAS) a specialist domestic abuse charity in Yorkshire. A recent £220,674 grant application was submitted to the Global Effort on COVID-19 (GECO) Health Research (Charura). In 2018, the clinic established a Research and Training Clinic Consortium (RTCC) involving YSJU, Abertay University, Newman University and University of Salford. RTCC's inaugural project involved testing a new outcome measure – Recovering Quality of Life (ReQoL), which the clinic is licensed to deliver – within the context of humanistic and pluralistic therapies. Following the move to online working during the Covid-19 pandemic, the clinic is leading on an RTCC and Open University collaboration to rapidly review the evidence for online therapy. A research group, which includes two external honorary research fellows, is also being piloted by the clinic to provide accessible support during traumatic loss. Since opening, the clinic has supplied eight work-related placements for undergraduate and postgraduate students and enabled four graduate internships. The clinic's work has generated employment for local students with three students currently employed as clinic administrators. The clinic's legacy has resulted in all former employees securing funded PhDs or graduate teaching assistant (GTA) posts. Building on the success of the clinic, the University has recently invested £17.2m in larger, dedicated facilities for the clinic which will be ready for occupation in September 2021.

**Strategic AIMS for 2020–26**

The YSJU 2026 strategy has three priorities: inspiring learning, impactful research and enabling students to be clear about their careers. The research strategy emphasises interdisciplinary working, demonstrating greater research excellence through external recognition, and wider dissemination of research as key goals. Within this context, our UoA research aims are:

1. Continued focus on publishing internationally excellent and world-leading research, supported by developing research active staff (increasing percentage with PhDs) and providing appropriate infrastructure and staff training opportunities.
2. Continue to increase interdisciplinary research by collaborating with other schools internally, and with external partners from world-class institutions nationally and internationally.
3. Further enhance the sustainability of research by increasing external grant income.
4. Increase the volume, quality and interdisciplinary nature of our research and the production of impactful research with real-world benefits for individuals and communities.

To achieve these aims, we have based our research strategy around our three research groups. In Health, because academics are predominately hired for their clinical experience and skills, the priority is upskilling staff (AIM 1). We will further establish Biosciences, through the DDaP group, as an exciting, fundamental and increasingly essential research hub by providing DDaP members with time, infrastructure and resources (AIM 2). Biosciences will increasingly be placed at the centre of enhanced sustainability across the school (AIM 3). Counselling is the most well-established research group and most reflective of impactful research across the school (AIM 4). This includes a counselling service run by Gabriel, a newly established clinical doctorate programme with York NHS Trust and enhancing links with York's new Foss Park Hospital for mental health.

**2. People****Staffing strategy and staff development**

In line with university strategic priorities and following substantial institutional reorganisation, this UoA submission consists of 18 staff (17.4 FTE; all with PhDs) drawn from counselling and mental health, allied health, and biosciences, with four professors (Gabriel, Edwards, Bryan, Charura), one associate professor (Laver-Fawcett), eleven senior lecturers (Kavanagh, Baumgartner, Taylor, Odell, Thompson, Purton, Spring, Boyes, Sinani, Yoward, Hobman) and two lecturers (McGivern, Shepherd). All staff are employed on permanent, open-ended contracts. Eleven (61%) academic staff were recruited after REF2014 to enhance capability in the priority research areas of mental health (CaMH), wellbeing (HaW) and biosciences (DDaP). We have laid the foundation in these three areas for creating critical mass, building our research identity and developing sustainable research activity.

Heads of School and SRKTLs are part of the School Academic Leadership Teams (SALTs) that support research and succession planning through the recruitment and promotion of research staff aiming to enhance the sustainability and growth of research excellence. As well as ensuring teaching expertise, we use new appointments and promotions to enhance our research portfolio; this is reflected in the increased number of staff with significant responsibility for research. This includes six appointments at lecturer and senior lecturer levels in Biosciences; three of these lecturers have progressed to senior lecturer. All new appointments should have a doctorate or register for doctoral studies on appointment. REF eligible appointments are made whenever possible. We will invest in research leadership as a key stimulus for growth in areas of strategic priority. Senior management now complete a leadership and management CPD programme.

Staff have an annual personal development review (PDR), with research as an integral part. Topics discussed include reviewing progress, setting objectives for published outputs, research engagement (grant applications, PGR supervision, scholarship, knowledge exchange) and

research development (external visibility, conference attendance, networking). YSJU is a signatory on the Vitae Concordat to Support the Career Development of Researchers, which directly informs our staff development approach. Our centralised open research CPD programme is aligned to the four core Vitae competencies and recognises staff individual development needs while also acknowledging that a common set of requisite personal and professional skills are needed for success. CPD delivery by external speakers has been provided; for example, staff engaged in workshops on research impact delivered by Professor Mark Reed and sessions on writing grants for health and social care funding and research impact provided by Professor Diane Cox. Our new open data repository service (RaYDaR) and research repository (RaY) will further increase the impact and transparency of research at YSJU and support researcher development.

All staff are appointed on teaching and research contracts and allocated time for research and scholarly activity within their workload. The PDR process promotes, supports and celebrates research excellence. Career development is supported through promotion following institutional guidelines. This includes an accelerated promotions route, allowing staff to apply for senior lectureship up to three years prior to reaching the top of grade. Several staff in the UoA have been promoted via this route (Kavanagh, Odell, Taylor). All academics are encouraged to progress their research career through scholarship and training activities. This is reflected by three UoA3 staff having completed PhDs (Thompson, Spring, Hobman) with institutional support during the current REF cycle. In addition, academic leave, flexible working, remote working, special leave and career breaks are available to all staff. to improve overall staff satisfaction. Importantly, regardless of contract type, staff have the same flexible internal funding opportunities available to support research, scholarship and conference activities. Variations in contractual arrangements are also available to facilitate changes in staff circumstance, including additional support for carers, parents and staff who have a disability or ill-health.

Associate professorships were introduced in 2013 to recognise outstanding contributions to teaching and research, raise career aspirations and provide a development route to full professorship. During this REF cycle, one UoA3 academic was promoted to associate professor and then professor (Gabriel), and another was promoted to associate professor (Laver-Fawcett). Gabriel was externally recognised for her outstanding contribution to research and community support. Gabriel was appointed chair of the University Research Degrees Committee, while Laver-Fawcett served on the University Research Committee (as School Research Lead) and the University Research Degrees Committee, and is now joint co-ordinator for the university's Postgraduate Supervisor's Forum.

### **Support and training for postgraduate research students (PGRs)**

YSJU has well-established processes for induction, training, and monitoring of PGR students. Formal reviews of PGR student progress are conducted every six months by academics external to the supervisory team. Progress is monitored centrally four times a year (by Research Degree Committee). All supervisory meetings are logged. Supervisory teams are made up of multiple academic staff from the PGR student supervisory register. To be added to the register, staff are required to meet stringent criteria for PGR supervision eligibility pertaining to engagement in research, continual professional development and formal YJSU training. Endorsement from Heads of School or SRKTL is also required. Applications are assessed by a central committee of senior research staff (again, by Research Degree Committee). It is mandatory that all supervisory teams have at least one member of staff with experienced supervisory status (have previously supervised a PhD student to successful completion). In addition, all PGR students have a PGR tutor who is available to provide support outside of the supervisory team.

All students undertake needs analysis periodically and an individually tailored training programme is created. The needs analysis is based on competencies in the Vitae Researcher Development Framework. Support is provided by supervisory teams and via a centralised PGR training programme that includes core and supplementary workshops at each year of study. Like our staff training programme, our PGT training programme aligns with the Vitae Researcher

Development Framework. Core parts of the programme include Research Ethics and Integrity, General Data Protection Regulation (GDPR) for Research, Data Management, and Copyright and Intellectual Property rights. These sessions are compulsory for all PGR students. A range of other central and local support is available to PGR students that include (1) access to centralised services (e.g. Student Services, Chaplaincy, Library and Learning Services, Careers); (2) access to a stipend of up to £900 (£450 part-time) to support travel and consumables associated with their research and professional development; (3) access to the YSJU Graduate Centre providing study space and remote access to a range of specialist software (e.g., AMOS, MPlus, Comprehensive Meta-Analysis); (4) opportunity to complete a postgraduate certificate in academic practice to achieve associate fellowship of the Higher Education Academy (HEA); (5) administrative support provided by the School and Research Office and (6) various PGR events held throughout the year (e.g., Three Minute Thesis (3MT), Bake Your Thesis, and the annual PGR conference). PGRs also benefit from schemes aimed at retaining our best undergraduate students. This includes alumni scholarships, which provide first-class students a 50% fee reduction for MSc by Research. Currently, there are three PGRs in UoA3 who are in receipt of similar internal scholarships (one in HaW, one in CaMH and one in DDaP).

### Equality and Diversity

UoA3 sits within a broader context of support for equality and diversity at YSJU which has implemented several initiatives which ensure policies and practices relevant to researchers are inclusive, equitable and transparent. This is formalised in the YSJU Equality, Diversity and Human Rights Policy and the targets within the YSJU 2026 strategy (e.g., 10% BAME student and staff population; all staff are engaged in equality and diversity training and development appropriate to their role; median gender pay gap below 10%; 95% of staff think the university is a good place to work). Equality impact assessments are a routine part of annual monitoring and progress towards YSJU targets are reported to executive board and the governing body on a yearly basis. Of additional note, YSJU is a member of the Athena SWAN Charter (and is currently applying for a Bronze Award), a Stonewall Diversity Champion (ranked 49th place on the 2020 Top 100 Employers list) and Top 20 Trans employer, a Disability Confident employer, and a Mindful Employer. There are also several active staff networks available for staff to join that align with these awards and this agenda including the LGBT+, BAME and Disability staff networks.

UoA3 complied fully with the YSJU institutional code of practice in selecting research outputs. The UoA lead also undertook Advance HE training on equality and mitigating bias as part of the role. Due to the small size of our submission, it is not possible to report a profile at UoA level here while also complying with HESA guidelines on anonymous reporting when presenting Equality and Diversity data (e.g., all our percentages would be based on less than 22.5 FTE). However, equality and diversity data for the UoA was reviewed internally following the completion of output selections and reported to both the SALTs and Athena SWAN development groups as part of promoting greater diversity and inclusion at UoA, school, and institutional levels. Our data was also included as part of an equality and diversity impact assessment at institutional level. We have a strong female leadership as highlighted in Section 2.

We recognise that greater inclusivity, equality and diversity in practice and research requires ongoing work and improvement in the school. Furthermore, in keeping with the central ethos of YSJU, the issues of inclusivity and fairness are directly targeted through involvement with the Institute for Social Justice. Several UoA staff (Spring, Gabriel, Charura) are directly involved in research working with marginalised groups within the Institute, and wider UoA staff involvement will be promoted. The type of research being produced in the UoA is a key way in which equality and diversity is continuously promoted.

**3. Income, infrastructure and facilities****Income**

Our external research income has more than doubled since the REF2014 period, from £67,240 to £189,240 with a further £270,000 applications awaiting decision.

Much of our income is from UK-based charities. Academics have predominantly targeted smaller funding bodies, societies and local charities (e.g., the Physiotherapy Research Foundation awarded £13,931 in 2014 [Yoward]). We have used QR money and other funding sources (e.g., internal “Catalyst Funding”; £3,055) to support a range of research projects (e.g., enhancing the learning and teaching of helper skills). This has included a recent emphasis on interdisciplinary research collaborations between Biosciences and Sport, supported by substantial investment in UoA24, including a purpose-built campus with a Human Performance Laboratory (£158,000 in new equipment). In addition to research income (HESA return), service evaluation funding has been awarded from: (a) Armed Forces Covenant Trust (Laver-Fawcett, Boyes) for an evaluation project (£9,939) with the Sheffield Mind charity (to complete by July 2021); (b) Healthwatch York for two evaluations of stakeholder views (Laver-Fawcett, £1,000 2016, £1,000 2017) and (c) City of York Council (Laver-Fawcett, £3,000) to evaluate a new social prescribing service.

Overall, supported by a significant investment in research infrastructure, staff recruitment and training capability, we are in a much stronger position to continue our upward trajectory of developing a sustainable and competitive research climate.

**Infrastructure and facilities**

Senior research roles that directly feed into the UoA include SRLs, chair of school research ethics committee (SREC) and a public engagement lead (PEL) who sits across the UoA (Spring). The SRTKL is responsible for strategic development of research within the school and is a member of the University Research Committee, which provides oversight of the university’s strategic plans for research and issues of research ethics and integrity (via devolved university and school-based ethics committees). The SREC chair is responsible for implementation of YJSU’s Research Ethics Policy at school level and is a member of the University Research Ethics and Integrity Sub-committee. The PEL has oversight of public engagement activity in the schools, working with the BDKEO to seek out and co-coordinate public engagement activities.

We have benefited from a new central RO, which includes a head (1.0 FTE) and 5.15 FTE staff. The RO is responsible for overseeing research governance and compliance, supports grant applications, manages PGR student experience, coordinates staff research training and monitors research performance. This has relieved academics in the UoA of substantive administrative duties associated with research supervision, allowing us to maintain a high-quality experience as we expand our PGR cohort numbers. The RO directly improved the quality of support for research grant applications, as evidenced in the increased number, range and type of the UoA’s grant applications.

The new BDKEO, which includes a director (1.0 FTE) and 13.5 FTE staff, supports schools in increasing the range and scope of applied research, business development and knowledge exchange and is our main conduit for impact and public engagement. It helped gain accreditation for Knowledge Transfer Partnerships (KTPs) and registered YJSU with Innovate UK, as an approved KTP knowledge base deliverer. It was integral to YJSU achieving Silver Watermark accreditation from the National Co-ordinating Centre of Public Engagement (NCCPE). Our community-focused work with refugee groups (Spring, Charura), community groups (Boyes) and mental health clinics (Gabriel, Hobman) was included as part of this submission. Moving forward, this office will support our engagement with business, policy makers, professionals and civil societies (e.g., charities, associations) and ensure that research impact is fully embedded in our research culture and practice.

Major investment (£1.1m) in the development of Biosciences, including the construction and furnishing of teaching and research laboratories, has occurred since REF2014. Facilities include

cell culture capability (two class II hoods, two incubators), spectrophotometric, fluorescent and luminescent plate readers, UV/vis spectrophotometers, microscopes (light, upright and inverted fluorescent systems, including an EVOS-FL2 system), electrophoresis equipment (SDS-PAGE, agarose), Gel Doc Systems (iBright and Syngene systems), PCR (4) and QPCR (1) machines, and a Pentra C300 Clinical Chemistry Analyzer. Biosciences have purchased a state-of-the-art Luminex MAGPIX system (from infrastructure and QR funding) for progressing research into biomarkers and related health-screening applications. This system will enable high throughput multiparametric analysis of a wide range of analytes and offers a unique research capability that is attractive to external partners including the local NHS Trust.

Substantial investment has been made in supporting and enabling microbiological research, with the purchase of a dedicated automatic plate sterilisation/pouring/drying system and extra incubator capacity. Research is now supported by 3.4 FTE technicians, whose duties include the maintenance and upkeep of equipment, consumable ordering and general health and safety (all new appointments). 1.6 FTE technicians contribute to cell culture handling, microbiology and imaging applications directly related to research activities. The Bioscience laboratory facilities are currently being expanded to: enable research staff to supervise postgraduate research students and further develop independent research profiles, as well as accommodating growing apprentice numbers (arriving from NHS and Industry) and growth in the recent Applied Biosciences degree courses.

These facilities complement those existing within Allied Health and the new £9.2m investment in sports and exercise to create the sport and recreation campus (which includes a Human Performance Laboratory). Direct investment in this UoA has seen the expansion and development of the Counselling and Mental Health Centre, the establishment of dedicated physiotherapy and occupational therapy rooms, the creation of a physiotherapy research space (including purchase of a diagnostic ultrasound machine) and postgraduate and undergraduate research activity. The physiotherapy labs, together with the sports hall, provide an extensive environment in which to undertake movement and exercise-based research and are utilised for both staff and student projects. Occupational therapy now has two converted research spaces for teaching and research related to performance of activities of daily living. Allied Health research activity is supported by a 0.6 FTE technician.

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

##### **Collaboration**

At the core of our research strategy is the need to foster interdisciplinary research and engage with external partners to facilitate this process. With the introduction of Biosciences and the recruitment of experienced academic staff with existing research portfolios, there are now the facilities and expertise to begin developing a robust interdisciplinary research profile. For example, biomarker and disease-related research is supported by substantive equipment and infrastructure investment. The creation of effective research partnerships across schools and with the wider Yorkshire research and health community (e.g., NHS, AVIVA Health, Covance, Mind) is valuable. There are new collaborative initiatives between researchers within UoA3, UoA23 (Education) and UoA24 (Sport and Exercise Sciences, Leisure and Tourism), culminating in joint research grant submissions and MSc by Research student supervision. Activities have extended beyond the YSJU environment, with a collaboration between the i2i Football Academy and academics in Bioscience and Sport investigating the role of vitamin D in performance and injury susceptibility.

Recently, an important memorandum of understanding was developed and signed between YSJU and the York Teaching Hospital NHS Foundation Trust. The trust provides a comprehensive range of acute hospital and specialist healthcare services for 800,000 people living in and around York, North Yorkshire, Northeast Yorkshire and Ryedale. The memorandum aims to increase collaboration between researchers and clinicians to facilitate greater patient-public involvement in research activities. Following the memorandum between YSJU and the

York Teaching Hospital NHS Foundation Trust, York Hospital Research Department staff delivered seminars for academics and PGRs on the NHS Ethics application process and governance issues related to conducting research with NHS patients or staff. Collaborative grant applications for NIHR and Health Foundation funding are being targeted to increase income generation. The link between the university and local NHS trusts is strengthened by the establishment of an IBMS-accredited Level 6 Healthcare Scientist apprenticeship within Biosciences, with the first intake from York, Scarborough and Hull NHS hospital laboratories in September 2020. In addition, Allied Health academics have developed collaborative research and evaluations projects with numerous external partners including York NHS Foundation Trust Teaching Hospital, Tees, Esk and Wear Valleys NHS Foundation Trust, Leeds and York Partnership NHS Foundation Trust, Dementia Forward, Age UK York, Healthwatch York, City of York Council, York Centre for Voluntary Service and Sheffield Mind (together with the Armed Forces Covenant Trust). Many other external collaborations exist within the UoA, including links with international institutions in Austria, Belgium, Netherlands, Norway, Germany, Sweden, USA, Hong Kong and Australia and national universities (Keele, Huddersfield, Leeds, Leeds Beckett, Bradford and Newcastle). An exciting collaboration was recently established with the University of Zambia and local Zambian community groups (Charura) to ensure young people living with HIV and AIDS are supported during the Covid-19 pandemic.

### **Contribution to the research base, economy and society**

Staff are encouraged to support the research community and we have recorded a substantial increase in publications, editorships, editorial board memberships, ad-hoc reviewing for journals and conferences, grant reviewing, research degree examination, invited talks and other public engagement activities (e.g., media interviews). Examples are described below.

#### Editorial positions

Several academics hold editorial positions, including Spring (*Health Information and Libraries Journal*), Laver-Fawcett (*Irish Journal of Occupational Therapy*, *Annals of International Occupational Therapy* and previously *Occupational Therapy International*) and Charura (Open University Press Editorial Advisory Board, *European Journal for Qualitative Research in Psychotherapy*).

#### Plenaries, invited lectures and conference presentations

Engaged dissemination of research is a critical requirement of YSJU academics and is also a marker of professional standing. Examples of UoA3 academics selected or invited to present at national conferences include: British Society of Immunology (Odell), Royal College of Occupational Therapists Annual Conference (Spring, Laver-Fawcett) and Occupational Therapy Show (Laver-Fawcett). International conferences include: International Development Coordination Disorder Conference (Sinani), CSP Physiotherapy UK (Purton), European Association for Health Information and Libraries Conference (Spring), European Network of Occupational Therapy in Higher Education Conference (Spring, Laver-Fawcett), World Federation of Occupational Therapists Conference (Spring), 13th Person Centred and Experiential World Conference (Charura) and 2nd Annual Forensic Mental Health Conference (Charura as a keynote plenary). The excellent professional standing of our returned UoA3 Allied Health academics is reflected by the numerous invitations to share relevant research and applied practice outcomes, for example: Advanced Physiotherapy Practice conference (Thompson), World Confederation for Physical Therapy Congress Geneva (Thompson) and Annual Polish Occupational Therapy Conference (Laver-Fawcett).

#### Conference and workshop organisation

Academic staff have been members of the scientific organising committees of five conferences: Management of Falls workshop (Yoward), Food Integrity Conference (Kavanagh), 17th International Symposium for Health Information Management Research (Spring), 2<sup>nd</sup> Council for Occupational Therapists for the European Countries and European Network of Occupational Therapists in Higher Education Congress (Laver-Fawcett).

Committee and working group membership

As members of various working groups, UoA3 academics can steer local, national and international agendas in their specialist fields and promote public engagement activities. Several examples are outlined below.

As a former member of the Leeds Public Engagement Network, a founding committee member of University of Leeds Early Career Groups and current City of York Pint of Science coordinator, Odell has promoted professional development opportunities and science outreach across the local community.

As chair of Yorkshire Council for the Allied Health Professions Research (CAHPR) committee, Sinani is directly involved in promoting the research agenda of local allied health professionals. Sinani is also on the committee of the International Society for Research into Dyspraxia (and Yorkshire Forum lead), member of the York AHP Research and Effectiveness Forum (now Yorkshire Council of Allied Health Professions Research), theme co-ordinator for the Yorkshire CAHPR (children with neurodevelopmental disorders and cerebral palsy) and co-ordinator of the Pan Yorkshire Specialty AHP (now Yorkshire Council of Allied Health Professions Research) research network.

As a member of the Applied Clinical Research in Neurology Group, based at Keele University, Purton is actively involved in developing NIHR Research Design Service submissions. Laver-Fawcett is a member of the Occupational Therapy Europe Foundation Board and chair of the Research in Occupational Therapy and Occupational Science (ROTOS) Europe foundation. Laver-Fawcett has provided expert consultancy related to dementia services and teaching for interdisciplinary groups funded by the Ministry of Health in Singapore.

Charura is chair of the UK Council for Psychotherapy (UKCP) research working group and chair for the education working group. Charura makes specialist recommendations to the board of trustees and other professional bodies and training institutions nationally to ensure that UKCP psychotherapy, training and research are of the highest quality.

Journal reviewing

Academics have reviewed for 32 peer-reviewed journals: *Frontiers in Cell and Developmental Biology*, *Heliyon*, *PLoS One*, *Cellular Signaling*, *Microvascular Research*, and *Current Aging Science* (Odell); *Food Chemistry*, *Food Analytical Methods*, *Journal of Virological Methods*, *BMC Veterinary Research*, *Frontiers in Immunology*, *Immunotherapy & Vaccines* (Kavanagh); *Disability and Rehabilitation* (Purton, Laver-Fawcett); *Child: Care, Health and Development*, *Developmental Medicine & Child Neurology*, *European Psychomotricity Journal*, *Human Movement Science*, *Journal of Autism and Developmental Disorders*, *Physiotherapy*, *Research in Developmental Disabilities* (Sinani); *Scandinavian Journal of Occupational Therapy*, *International Journal of Occupational Therapy*, *British Journal of Occupational Therapy*, *Annals of International Occupational Therapy* (Laver-Fawcett); *Biomolecules*, *BMC Cancer*, *BMC Complementary Medicine and Therapies*, *BMC Urology*, *Human Fertility*, *International Journal of Molecular Sciences*, *Journal of Histochemistry & Cytochemistry* and *Mutation Research* (Baumgartner).

Grant reviewing

Members of the unit have reviewed twelve grants for various national and international organisations: Devices for Dignity Healthcare Technology Co-operative fund (Sinani); NIHR Advisory Panels (Sinani); Action Medical Research (Sinani); Program Grants for Applied Research (Sinani); Research for Patient Benefit Scheme (Sinani); Scottish Executive Health Department (Sinani); Physiotherapy Research Foundation (Sinani); Posture and Mobility Group (Sinani); NIHR Health Technology Assessment (Laver-Fawcett); Royal College of Occupational Therapists' Research Foundation (formerly the UK Occupational Therapy Research Foundation) (Laver-Fawcett); NHMRC, Australia (Odell) and Medical Research Council UK (Odell).

**Public engagement and knowledge transfer**

Within Biosciences, academics host regular science clubs for local primary schools to conduct experiments. For three years Biosciences have hosted four-week summer placements for disadvantaged secondary students to gain valuable experience designing, conducting and analysing a research project through Nuffield Research Placements (Odell). Additional science outreach programs include: an annual summer three-day science residential compact scheme aimed at widening participation in science and higher education (Kavanagh, Odell, Taylor), local career fairs, York Festival of Ideas York Bloom! Festival and the annual Inspirations event, which celebrates STEM in education. Academics are also involved in public engagement and outreach events through STEM ambassador roles (Odell), social media platforms (Kavanagh), talks at Café Scientifique events and involvement in Pint of Science as presenters (Odell, Kavanagh, Beaumont) and York city event host and coordinator (Odell). Research by Laver-Fawcett has developed two clinical assessment tools (ACS-UK and SOTOF) for integration into wider occupational therapy practice, demonstrating substantial knowledge transfer and impact. Charura was an invited speaker at the Leeds International Festival 2019 discussing “What does it mean to be human?”. Charura has been interviewed on radio and ITV News, speaking on the impact of trauma, ageing, death and bereavement and on the long-term mental health impact of the Covid-19 pandemic on staff and residents in care and nursing homes.

**Contributions to the local community and environment**

An important attribute of graduates from YSJU is the desire to remain local and contribute to the surrounding community. This is also evident in graduates from Occupational Therapy, Physiotherapy and Biosciences This aspiration to give back was demonstrated by two recent final-year Biosciences students returning to York Hospital NHS laboratories to assist with screening for Covid-19 while continuing to complete their undergraduate degrees remotely. Former Biosciences graduates are also actively engaged in the national effort to develop Covid-19 vaccination and screening strategies. Furthermore, from a total 32 Biosciences graduates to date, nine (28%) have gone on to undertake research higher degree programmes in the north, with one directly involved in Covid-19-related vaccine production. A further fifteen (47%) graduates are employed either within local NHS Trust laboratories or private contract research organisations, with another four involved in additional healthcare-related roles. The research and clinical training provided by the Biomedical Science programme supports the development of skilled and valued graduates, reflecting the teaching excellence and research knowledge of the staff.

A recent collaboration between Biosciences, Exercise Physiology, Physiotherapy and Occupational Therapy has established a community outreach programme to develop assessment and intervention strategies for tackling post-stroke fatigue in members of the Different Strokes community group. This will provide lasting benefit to the community stroke rehabilitation group and lead to external research funding strategies. Through additional diverse community-based research projects directed by Boyes, and performed together with Allied Health students, incremental improvements in the local community are being fostered (e.g., Walking for Wellbeing, Beliefs and Attitudes of Staff toward Safeguarding, An Activity Toolkit for Use Within the Nursing Home Setting and Goal Setting Interventions). Charura explores the impact of ageing on psychological wellbeing (specifically dementia) and was recently awarded research development and innovation funding to engage in interdisciplinary research with refugees and asylum seekers in Northern England. The research is an exploration of practice-based evidence around the integration experiences of asylum seekers and refugees. This research is supported by regional agencies that assist these groups, including Refugee Action York, Solace (Surviving Exile and Persecution) and Refugees and Asylum Seekers Project Stockton (RASPS). The development of links with RASPS by Spring and Charura has led to the establishment of a drop-in support service for local asylum seekers and refugees, resulting in positive improvements in the wellbeing and inclusion of this community group, and has overseen the development of a community allotment space.