

<b>Institution:</b> University of Huddersfield
<b>Unit of Assessment:</b> UoA4 - Psychology, Psychiatry and Neuroscience
<p><b>1. Unit context and structure, research and impact strategy</b></p> <p><b>Unit context and structure</b></p> <p>Research in the Department of Psychology has never been more vital and exciting. The work we do is valued by our collaborators and funders and is having a positive impact on people's lives, both nationally and internationally. Our growing research profile and confident outlook is reflected in our enhanced status within the University of Huddersfield. The Department of Psychology, located in the School of Human and Health Sciences (SHHS), emerged from the Department of Behavioural and Social Sciences to become an independent department in July 2017. With the recruitment of a new Professor as Head of Department (<b>Clough</b>) and subsequent recruitment of several new early career academics, the department has been at the forefront of the university's ambitious strategy to transform itself into a world-class, research-focused institution. The department now has two research centres, 35 members of academic staff supported by three dedicated psychology technicians and in the last five years has achieved a rapid growth in the number of postgraduate students at both masters and doctoral level. Psychologists are active researchers and research leaders with productive links across the University and fruitful collaborations with both national and international partners.</p> <p><b>Expansion and development since REF 2014</b></p> <p>In the 2014 REF exercise psychology researchers were incorporated into the University of Huddersfield's submission to UoA 22 (Social Work and Social Policy). At that time, psychology staff were divided into two research centres: the Centre for Applied Psychological Research (CAPR) and the International Research Centre for Investigative Psychology (IRCIP), both under the overarching Institute for Research in Citizenship and Applied Human Sciences (IRCAHS). Psychology research has always been tightly integrated into the School's multidisciplinary research strategy and psychologists have played a vital role in several key prioritised research areas, specifically child protection, vulnerable children and families; investigative psychology; long-term conditions, cancer and palliative care; mental health and wellbeing; reproductive and child health; and understanding and responding to crime.</p> <p>The research agenda set out in 2014 aimed to build on these established areas of strength, to continue the expansion of postgraduate taught (PGT) and postgraduate research (PGR) student numbers, and to identify new priority areas for growth in research that align to the most significant international and national drivers and the needs of research users (our School has a long-standing ethos of user engagement and participation in research, for example through our public partnership group). Psychology researchers have been crucial to the implementation and expansion of this agenda over the last six years.</p> <p>To strengthen our research in forensic psychology and child protection and to respond to external drivers (e.g., the Horizon 2020 "Secure societies" societal challenge, the UNICEF child protection agenda), two strategic appointments were made in 2016. <b>Boduszek</b> was promoted to Professor of Criminal Psychology and <b>Wager</b> was appointed to Reader in Forensic Psychology. Since then, <b>Boduszek</b> has played a key role in the cross-school None in Three project, initiated in 2016 and funded by the Global Challenges Research Fund (£4,303,604), P.I. Jones [UoA20],</p>

which developed and employed innovative approaches to prevent domestic violence in the Caribbean (described in detail in one of the UoA4 impact case studies). The success of this research led to the establishment in 2017 of the None in Three Research Centre for the Prevention of Gender-Based Violence, a multi-disciplinary team of national and international experts who have expanded the reach of the research to also include India, Jamaica, Uganda, the UK and Brazil. None in Three was formally recognised as a University Research Centre in 2020 and is now led by **Wager**.

Investigative psychology has also continued to thrive and evolve since 2014, boosted by the recruitment of three early career academic staff (**Pepelasi**, **Mojtahedi**, and **Hunt**) and a successful MSc in Investigative Psychology. Following the departure of the Director of IRCIP, a new leadership team was appointed which steered the integration of investigative psychology into the university-wide Secure Societies Institute (SSI) which brings together experts in a range of disciplines including forensic science, architecture, digital forensics, policing and law to address a diverse set of security challenges, including terrorism and extremism, modern slavery, child sexual abuse and cyber crime. Two investigative psychologists originally from IRCIP, **Ioannou** and **Synnott**, are the Director and Associate Director of SSI respectively.

#### **A new direction for psychology research**

Following a School-wide review conducted after the 2014 REF exercise, a strategic decision was made to strengthen psychology as an independent research unit and to focus on cognition and neuroscience as a priority area for growth in psychology research. The aims included: to build upon existing strengths in applied cognitive science (**Pebbles**, Reader in Cognitive Science since 2012, promoted to Professor in 2020); to grow further research in human factors and organisational psychology; and to develop new lines of inquiry in cognitive neuroscience that would augment existing research in the School. A significant investment by the University resulted in the appointment of a Professor of Applied Cognitive Psychology (**Ward**) and lecturers in organisational psychology (**Parmak**) and cognitive neuroscience (**C Retzler**) in 2014 and two further early career academics, **Street** in 2015 and **Wilson** in 2016. In the subsequent four years, five more early career academics (**Duke**, **Hallam**, **Noyes**, **J Retzler** and **Vogt**) with expertise in cognition, neuroscience and related fields also joined the department.

With the critical mass of researchers in place, a new research centre, the Centre for Cognition and Neuroscience (CCN), was created also in 2020 with **Pebbles** as its lead. The centre is vibrant and interdisciplinary, containing 13 academic staff and 34 postgraduate students and researchers, with experts in cognitive and behavioural science, artificial intelligence and neuroscience. CCN research comes under five primary themes: (i) human and machine face recognition, (ii) mechanisms of reward and addiction, (iii) cognitive processes of deception and lie detection, (iv) the neural underpinnings of cognition and emotion in healthy and brain damaged individuals, and (v) computational modelling of mechanisms and processes underlying learning, decision making and spatial cognition. Other research focuses on the atypical development of executive function and attention, health-related decision making, and using machine learning to screen for autism and dementia.

The strategy has proved successful and research in the Centre is attracting grant income from a range of external sources, for example a project seeking to understand the cognitive mechanisms underlying people's decision making when confronted by fraudulent text messages (**Street**, ESRC £125K) and a Knowledge Transfer Partnership (**Street**, Innovate UK, £159K)

which aims to develop the first evidence-based psychologically-informed cyber security training program in collaboration with a local business (Bob's Business).

A significant proportion of the research in CCN is funded by the UK Ministry of Defence. For example, staff have conducted projects investigating the viability of using computational cognitive architectures for the control of artificial autonomous agents (**Peebles**, £19K), modelling human performance of drone pilots (**Peebles**, £40K), investigating behavioural cues associated with loss of trust in complex socio-technical systems (**Street, Noyes, Knights, Peebles**, £158K) and optimising training schedules for Ministry of Defence personnel (**Peebles**, £71K). Other work funded by UK Government agencies conducted by members of this group has applied cognitive theory to accelerate coaching and improve the sensemaking of cyber security analysts (**Ward, Wilson, Peebles** £94K) and a project funded by the Department of Transport to identify cyber threats to autonomous vehicles (Parkinson, **Ward, Peebles**, £13K).

### **Building upon existing strengths**

The Centre for Applied Psychological Research has continued to be the locus of most psychology research and is the larger of the two centres, consisting of 23 academic staff and 52 postgraduate students and researchers. Research in CAPR comes under the two broad research themes that encompass the primary research areas outlined above: Criminal, Forensic and Investigative Psychology; and Health and Wellbeing.

Researchers under the Criminal, Forensic and Investigative Psychology theme work with a wide range of national and international penal and criminal justice agencies such as the Ministry of Justice, the Police, HM Inspectorate of Prisons, Courts, Secure Mental Health Services and Probation services to investigate criminal and forensic psychology phenomena. Research includes psychopathy and criminal social identity (**Boduszek**) and restorative justice practices and sexual victimisation (**Wager**). Investigative psychology research focuses on geographical offender profiling and criminal personal narratives (**Youngs**), individualistic antecedents to offending and crime modelling (**Ioannou, Sinnott**), eyewitness behaviour (**Mojtahedi**), and deviant/atypical sexual expression, including serial offending (**Wager**) and murder (**Boduszek**). In the centre, forensic mental health expertise involves mental disorders and criminal behaviour including suicide, self-harm and sexual violence (**Gavin, Hunt, D Kola-Palmer, Wager**).

Examples of work conducted by people in this group include a study into the prevalence and variation in antidepressant prescribing across Northern Ireland (**Boduszek**, funded by ESRC £137K). Working with community partners, academics in this group also work to evaluate interventions for victims of modern day slavery (**Wager**, funded by Thames Valley Police and Crime Commissioner £25,000), examine the effectiveness of preventive interventions against child sexual abuse and exploitation (**Wager**, funded by Barnardos and the Centre for Expertise into CSA, £14,630), quantify the scale of online-facilitated child sexual abuse (**Wager**, funded by the Independent Inquiry into CSA, £25,000) and explore the pathways leading to sexual revictimisation (**Wager**, funded by the British Academy, £10,000).

Psychologists working in the Health and Wellbeing topic area investigate the psychological aspects of care, therapy, and wellbeing, health behaviour (**Gomersall, S Kola-Palmer, Leeming**), music and wellbeing in dementia (**Shibazaki**), end of life care practices (**King**), the relationship between engagement with nature and the natural environment and wellbeing (**Burr, King**) and mental toughness and resilience (**Clough**). These achievements have been matched

by developments in methodological expertise with a focus on ethnographic and phenomenological approaches (**Burr**) and template analysis (**King**).

Much of the health and wellbeing research conducted by psychologists in the department has continued to involve highly multidisciplinary cross-School collaboration. As a result, the research outputs of two psychology professors (**Burr** and **King**), as in previous REF exercises, is being included in the University's UoA20 (Social Work and Social Policy) submission. The increased focus on research at all levels of the institution has resulted in a rich environment for collaborative research in the area of health and wellbeing—much of it within the School of Human Health Sciences. For example, in addition to psychologists, the None in Three project involves academics from sociology and behavioural science and the School of Art, Design and Architecture as well as a range of computer game design and development professionals.

### **Research culture**

#### **Research integrity**

In the development and conduct of our research we maintain adherence to high standards of research integrity according to University guidance which adheres to GDPR and the UK Concordat to Support Research Integrity and ensures research is conducted according to appropriate ethical, legal and professional frameworks, obligations and standards. Oversight is provided by the School Research Ethics and Integrity Committee (SREIC) and professional standards maintained through regular staff development training provided centrally in the University and through the active role of School Research Integrity Champions. All research activities in the School, without exception, require ethical consideration.

#### **Open Research**

The replication crisis currently affecting psychology has alerted the discipline to the limitations of certain methodological approaches and the importance of open, replicable science. One of our academics, **Street** has been particularly active in the replication debate, taking part in the Many Labs 2 initiative in 2018 in which 186 authors from 36 nations attempted to replicate 28 previous research findings with approximately 7,000 participants per study (Klein et al., 2018).

We have made substantial progress towards creating an open research environment with regard to data, methods and research findings and are actively working towards full compliance with the UK Concordat on Open Research Data. We actively pursue a policy of open access to our research and encourage staff to integrate strategies into research proposals to maximise engagement with and use of research outputs by research users and different audiences. An increasing number of research projects in the department embrace the practice of pre-registration and open storage of research data on the Open Science Framework (e.g., **J Retzler, Street, C Retzler, Mojtahedi**) or PROSPERO (**Mojtahedi**). Experimental data and cognitive model code are also made available on GitHub (**Peebles**) and PGRs are encouraged to conduct research using the Human Connectome Project's open source data set (e.g., Westerman).

#### **Research and impact strategy**

Psychology research at Huddersfield is having a significant positive effect on people's lives, both here in the UK and in the wider world and these successes are a result of the research priorities and impact strategies implemented at the time of the last REF exercise. The quality of our research is also impressive, with SciVal data showing that 25% of our publications in the top 10% journal percentiles by CiteScore percentile. The three Impact Case Studies for this UoA

have been selected to illustrate the wide range of research activities Huddersfield psychologists are engaged in around the key areas of health and wellbeing (**Shibazaki's** work employing music to improve the quality of life of people with dementia in the UK and Japan), domestic violence and child protection (**Boduszek's** research using innovative methods to reduce domestic violence in the Caribbean), and forensic psychology (**Roach's** work improving the identification of criminals in the UK and abroad by changing the approach police take to understanding criminal behaviour). These research areas continue to be priorities for psychology and the School.

Having achieved the goals set out in REF 2014 and established Psychology as a strong, independent research community capable of producing its own REF submission, during this cycle we have developed a further set of strategic aims to underpin our work leading into the next REF after 2021. The departmental research strategy has been based around the identification of key research groupings within CCN and CAPR (listed above) with the intention of developing critical mass of methodological and domain expertise upon which a set of research priorities can be established. Research centre directors are tasked with devising strategic plans for achieving their research KPIs and are required to report five times a year to the School Research and Enterprise Committee (SREC). A key driver for research planning and development are the University's Areas of Strategic Research Interest (ASRIs) which identify key research themes that will be focused upon across the institution. Cognition and Neuroscience has been identified as an ASRI to be established during 2020-2022 and there are a number of other current or emerging themes in which members of UoA4 are playing a key role, including Artificial Intelligence, Robotics and Mechatronics, Big data, Analytics and Visualisation, People Engagement and Psychology of Industry 4.0, Policing and Crime Reduction, Cyber Security and Mental Health. The University's new National Health Innovation Campus and confirmed £45m investment in health research and innovation will also provide a focus and impetus for relevant psychology research. Our strategy therefore is to boost psychology research by integrating our key strength areas more tightly into the medium to long term research goals of the University in order to create a genuinely interdisciplinary research environment with close and productive links across the university and beyond. The underpinning strategic aims of our development plan are:

- To consolidate and grow our proven research excellence in forensic/investigative psychology, health and wellbeing, and cognition and neuroscience and continue to scan the horizon for new areas for research growth.
- To increase our capacity to do research by recruiting, developing and retaining high quality staff and PGRs and ensure its sustainability and relevance by attracting external funding and investment.
- To generate clear applications for our research and maximise its impact, influencing policy and practice and implementing these in collaboration with research users.
- To enhance external engagement with our research—both locally and internationally—by building partnerships and collaborating with research end users in pursuit of knowledge transfer opportunities and social/economic impact.
- To strengthen our research culture by integrating strategic objectives with individual research priorities and fostering an environment in which staff feel personally invested in the strategic development of the Department.
- To raise our research profile by increasing our public engagement activities and promoting the work of all staff.
- To strengthen our postgraduate provision by expanding postgraduate teaching related to

our areas of research strength and increasing training and support for PGRs.

The University includes impact as an important aim in its Strategy Map. The School supports this aim through this Strategic Framework and through its External Engagement Strategy. We create an enabling environment for impact through:

- Engaging public stakeholders. Ensuring our research is accessible and understandable to our research users and beneficiaries;
- Building meaningful and mutually-beneficial research partnerships. Promoting responsible research, adapting to changing contexts, and supporting the translation and two-way transfer of knowledge and insight that comes from relationships built over time with our research users and beneficiaries;
- Co-production. Encouraging and enabling opportunities for impact to be built into the co-design and co-creation of all our research, engaging with our research users and beneficiaries from the start, and building on and extending our expertise in using different approaches and methods for achieving impact;
- Influencing. Building trusted relationships that maximise opportunities for change;
- Evidencing impact. Facilitating an accurate assessment of our impact activities so that we may nurture and sustain our knowledge exchange relationships (and support activities such as REF);
- Recognition and reward. Nurturing colleagues by sharing good practice, and recognising and celebrating our impact achievements;
- Strengthening capacity for impact. Actively recruiting academic staff who are known for generating impact beyond academia, ensuring a widespread understanding of the concept of impact, and supporting all members of the School to engage in activities that facilitate the positive impact of our research.

The Associate Dean (Research & Innovation) is responsible for implementing this impact strategy within the School, supported by the School's REF Unit of Assessment leads and Senior Research Fellows who, as part of their role, act as Impact Champions, leading Impact-related activities and supporting staff with collecting and evidencing impact. Furthermore, the School also benefits from the support from the University's Impact Coordinator and has two co-Directors of External Engagement who provide regular updates at Research Group meetings on ways to achieve impact.

## 2. People

At the staff census date, UoA4 consisted of 33 Category A staff with submitted outputs, 51% of whom are female and all of whom belong to the Department of Psychology (apart from one who is a member of the Department of Biological and Geographical Sciences in the School of Applied Sciences). The submitted staff constitute 86.5% of academics in the Department of Psychology (some staff are being submitted to other UoAs) and includes 4 Professors, 4 Readers, 4 Principal Lecturers, 18 Senior Lecturers and 3 Lecturers. Eleven members of staff obtained their PhD since the last REF census (all submitted staff hold doctorates) and four members of staff are currently classed as early career researchers (ECRs) according to the definition in the REF guidelines.

### Staffing strategy

Our staffing strategy is directed by the strategic goals of the research centres devised with the Head of Department and in accordance with the overarching University strategy map and key

performance indicators. Our aim in developing Psychology at Huddersfield has been to nurture excellence in historical areas of strength while developing new priority areas which respond to contemporary national and international drivers and combine productively with other research in the School. This strategy has been implemented by the targeted recruitment of additional staff at all career levels to develop a critical mass by focusing expansion around a common core of activities and themes.

Underpinning the support offered to academic staff is the core principle that although there is a set of strategic imperatives at all levels of the University, staff should retain autonomy over their research careers and should not feel compelled to pursue particular research goals purely to serve these strategic aims. Consequently, the strategic aims for UoA4 have emerged through the accommodation and integration of individual research agendas into medium- to long-term planning for the two research centres through a negotiated agreement on priority areas identified by the University ASRIs and other external drivers. In this way we have been able to foster an environment in which all staff feel personally invested in the strategic development of their subject area where they can play to their strengths while working towards shared goals that satisfy the agendas of the centre, School and University. This approach has been complemented by a strategy of targeted investment in recruitment and development to fuel the prioritised research areas.

#### **Recruitment and staff development**

The University has open and transparent recruitment and internal promotion procedures, with relevant guidance and documentation available on the University's website. There is an annual call for applications for Principal Research Fellow, Reader and Professor and since the last REF, five psychology staff have been promoted to Reader or Professor (**Burr, Street, Ioannou, Peebles, Youngs, Synnott**). All academic staff are required to hold a Doctorate on appointment, or are supported to undertake one. For newly-appointed staff (and for staff who have recently completed a Doctorate) the School offers a structured induction programme and aspires to: one year of minimal teaching, tailored active research mentoring, and the possibility of a start-up financial package for consumables.

The University adheres to the principles of the UK Concordat to Support the Career Development of Researchers and is committed—as recognised by the European Commission's HR Excellence in Research Award—to the implementation of the European Charter for Researchers and Code of Conduct for the Recruitment of Researchers. The School actively encourages the inclusion of post-doctoral positions and PGR studentships in larger grant applications and seeks to award indefinite contracts whenever possible to Research Fellows.

#### **Support for academic staff**

All ECRs are required to identify primary affiliation to one research centre. Support for developing research is encouraged through bid training, mentoring, writing for publication workshops and writing buddies. Staff are encouraged to include ECRs on bids and where appropriate ECRs are encouraged to actively engage in leading on bids with support from senior staff. ECRs benefit from an allocation of dedicated research time according to the standard University workload allocation model. Staff, particularly early- and mid-career researchers and their line managers, strive together to manage non-research workloads, to protect allocated research time, and to prevent the use of research hours for the completion of other responsibilities.

Workloads are monitored by Heads of Department and research workload allowances are based on prospective research performance, including quality of research output and salary offset from research grants, and individual career and research development plans. Allowances are agreed as part of the Personal Development and Performance Review (PDPR) process. Sabbatical or study leave is considered on a case-by-case basis in line with the University policy and specific School guidance and can be utilised for a wide range of research purposes. For example, in 2014, **Peebles** used a one-term sabbatical to develop a new research project related to the visualisation of large data sets. The research was presented at a workshop on Cognitive Biases in Visualisations at an IEEE VIS conference in Paris and subsequently led to his involvement in a multinational €5.2M bid to the European Union Horizon 2020 programme in 2016 to develop a real-time big data visualisation system.

Dedicated competitive research investment funding is available to all academic staff within the School (with positive action to encourage applications from early- and mid-career researchers) for staff development and strategic research investment. A proportion of the Research Investment Fund is allocated at least annually as competitive 'seed corn' funding to pave the way to the development of larger bids, such as to high quality competitive peer reviewed schemes (e.g., RCUK and NIHR) and programme grants. Psychologists have benefited from this fund to acquire new equipment to initiate research programmes. For example, in 2015, **Peebles** obtained £5K from the fund to purchase a NAO humanoid robot which has supported an ongoing cross-school collaborative project investigating reasoning by anomaly detection to improve planning robustness for autonomous robots in changing environments. In 2019, **Hallam** also obtained £5K to obtain equipment for transcranial direct current stimulation (tDCS) to support his research in cognitive neuroscience. The School has also been ready to respond rapidly to emerging needs, for example by providing funds to support research in response to the Covid-19 crisis (an initiative that was subsequently adopted University-wide), which, amongst other projects, supported a team of psychologists (**Leeming, Shibasaki**) to investigate how vulnerable older people in the community experience and cope with living under lockdown.

A proportion of indirect costs associated with successful grants is returned to Research Centres to allow investigator-led investment in research support (this is in addition to fixed funding of £5k per annum to support the management of each Research Centre). The University also provides significant financial support to deliver its strategic aims of accelerating the growth and internationalisation of research in the form of its University Research Fund (URF) framework. During the current cycle, staff from UoA4 have been awarded a total of £392,639 from the URF, for example to support the creation of the Secure Societies Institute.

### **Staff progression**

We support the development and career progression of existing staff at all stages of their research career through research training, mentoring and tailored coaching (e.g., through the 'research buddy' scheme) to support research career progression and by actively developing opportunities for staff to gain first-hand experience in research.

Research training is delivered at both School and University levels and there is a clear interface to ensure coordination, consistency and quality. All staff, in particular early- and mid-career researchers, are also able to access postgraduate research training courses and relevant Masters modules. Executive level management training is available to research leaders



(Professors and non-professorial Research Centre Directors) through the Chartered Management Institute. To date, 59 staff across the School (11 from the Department of Psychology) have undertaken leadership training with the Chartered Management Institute to ensure they have the skills and knowledge to lead on research.

All staff undertake an annual Personal Development and Performance Review (PDPR) with a senior researcher to allow critical self-reflection of research plans and performance (on income, outputs and impact) and unmet training and support needs. Review outcomes feed into clear performance targets and help to inform research workload allocation. We are exploring the potential benefits of all staff maintaining a 3-5-year research plan as part of PDPR and the development and nurturing of an international research profile will be an expectation.

The School recognises and rewards staff for research through promotions and increased allocation of time for research in response to proven performance (e.g., grant capture and publications). Staff Development funds are available to support training and academic conference attendance with priority given to ECRs and newly research active staff. In line with the University's commitment to become an environmentally sustainable institution, staff are required to provide an environmental impact statement and consider alternatives to flights where possible when applying for funds.

### **Support for postgraduate research students**

#### Developing interest in postgraduate research

We aim to support research across the whole potential span of a career, from undergraduate to professor, as this not only strengthens the psychology research community but also supports the recruitment of PGT and PGR students. The research culture that we have communicated at undergraduate level cultivates interest in our postgraduate programmes. Specific initiatives we have put in place to create this culture include the establishment of an undergraduate intermediate level "Research Apprenticeship" module which provides an early introduction to the practical skills necessary to execute a piece of research supervised by a member of staff, the creation of an online publication ("PsychTalk"), edited by undergraduates and staff which covers a range of topics, including research, and the opening up of research centre seminars to undergraduate students as well as postgraduates and staff. Undergraduate students are also always invited to attend the annual "Engage" PGR Research Conference which is led and organised by PGR students in the School. In a recent cross-School research project investigating inclusion in higher education led by member of UoA4 (**Tobbell**) all students—from first year undergraduates to final year PhD students—in SHHS were invited to collaborate with the academic staff to collect and analyse data. Overall, 251 students from SHHS participated in the research and responded to statements which elicited their subjective meanings of inclusion (Tobbell et al., 2020).

#### Developing a postgraduate community

We foster a vibrant PGR community, seeking close alignment with Research Centre themes and we aspire to providing world-class PGR training, mentoring and coaching. The primary focus in postgraduate researcher (PGR) recruitment is on quality and secondary focus on relevance and fit, in order to maximise the chances of timely and successful completion. We maintain an active pipeline of excellence from our undergraduate programmes, through our postgraduate taught programmes (MSc Psychology and MSc Investigative Psychology), to PGR and subsequent academic posts. Four current members of academic staff in Psychology (**Daly, Ali, Hunt, and**

**Mojtahedi**) have made the journey from a Huddersfield undergraduate psychology course while one (**Tzani-Pepelasi**) has progressed from a Huddersfield MSc degree. PGRs are also able to access financial support from the University Research Fund to apply for a fast-track PhD bursary and during the current cycle two PGRs from UoA4 have made successful applications. Each year the School and the University offer highly competitive fee waivers and scholarships for exceptional candidates. The School also offers a number of external PhD scholarships (this year supporting specifically projects initiated by by ECRs) and has supported three PGR students (including two psychology PGRs) through the University Alliance Doctoral Training Alliance, involving a fee-waiver bursary of £15K p.a. and access to training at Alliance Universities.

We offer a personalised research training programme to each PGR student via their supervisory team, and via a coordinated programme of research training which is delivered within the School (research ethics and integrity and discipline-specific training to support the programme) and at University level (generic transferable skills training, to support independence and employability e.g., knowledge exchange, impact and citizen engagement). All applicants are interviewed as part of the admission process and if successful, start their studies with a structured induction, including a skills plan and training development needs assessment is used to identify skills, training, development and support needs. This is reviewed and updated through the SkillsForge system, regular supervision and at key progression points. Each element of PGR training is mapped to the Vitae Researcher Development Framework to ensure coverage and to avoid duplication.

In common with our staff, all psychology PGRs are associated with and treated as members of one of the two research centres and are encouraged to fully engage with activities in order to ensure strong support from active researchers and opportunities for peer mentoring. PGR students are also encouraged and expected to attend the monthly Journal Club meetings, deliver research seminars, and contribute to the School seminar series organised by PGR students. Internal presentations are a condition of receipt of funding for external conferences. Psychology PGRs are also strongly encouraged to organise and present at the annual PGR-led School Engage research conference and at the annual University-wide PGR conference. In addition, the University Research Environment Development Fund has provided support to groups of PGRs in SHHS to organise day conferences and seminars on topics such as food poverty and measuring crime seriousness.

Many PGR activities are student-led. We maintain meaningful pathways to consultation with PGR students and have PGR student representation both on SREC and on the PGR committee. We encourage regular informal meetings of the PGR community in addition to online engagement. The PGR community also manages its own research seminar series. There has also been a concerted drive to foster an active and vibrant research culture in the department by supporting postgraduate students to work together in developing a community through various research oriented activities. This has recently borne fruit when a group of our Psychology PGRs successfully bid for and hosted the prestigious 33rd British Psychological Society annual Psychology Postgraduate Affairs Group (PsyPAG) conference over 4 days in summer 2018.

#### Supervision and career development

During the last REF cycle, staff in the UoA have supervised 28 (PhD) doctoral level students and 38 masters level students to successful completion. They have also examined 23 doctoral level

students at other institutions (three international) and 3 masters level students during this period.

Supervision sessions are held at least once per month on average for full time students and records of these meetings documented including agreed actions, responsibilities and timelines. The broad range of disciplines and methodological expertise across the School ensures that PGR students can receive the benefits of multidisciplinary supervisory teams and are able to consult directly with staff who hold identified research expertise in an advisory capacity. We offer pastoral support to all PGR students and work actively with disability support services to ensure that our provision takes full account of the needs of students with personal learning support plans. Maintaining a high level of supervision and support (e.g., wellbeing, financial hardship, technology etc.) during the pandemic has been a key priority for the University. Annual student progression reviews (or biennial for part-time students) are carried out by academic staff (both internal and external), independently of the supervision team. PGR student progress is monitored via the University Postgraduate Progressions Board which highlights anomalies to the Director of Graduate Education.

We expect and support all PGR students, particularly those benefitting from fee waiver or scholarship, to write for publication. Participation at national and international conferences is encouraged and supported through the postgraduate research student support fund, which provides additional financial support for project, travel and other costs. We plan to implement an annual competitive PGR award across our Research Centres.

For 2019 the level of satisfaction with PGR supervision in SHHS as recorded by the Postgraduate Research Experience Survey (PRES) was 82.8%. We use all of the data provided by the PRES to improve the PGR function and student experience and we are exploring the introduction of confidential annual progress reviews by supervisors and self-evaluation reviews by students.

### **Equality and diversity**

In line with University policy, we actively strive to achieve an inclusive culture and are committed to enhancing equality and diversity at all levels and we take positive action to maximise the chances of recruiting, promoting and allocating the best person for any particular role. All staff are required to undertake training on diversity and unconscious bias with additional training for staff reviewing outputs and preparing the REF submission. We seek to review all research-related policies and procedures and recruitment/promotions data annually and highlight anomalous trends for action.

Through an Equality Impact Assessment, differences between the Unit as a whole and staff identified as SRR/IR for gender, nationality, ethnicity, disability, sexual orientation, religion, age and marital status were negligible. Output selection followed a common approach according to the University's REF Code of Practice, that sought to minimise bias by involving multiple internal and external reviewers on the same output, whilst ensuring staff representation across the submission. Due to the relatively small number of required outputs, we did not need to judge outputs based on the final criterion in the Code of Practice, namely: choosing outputs to ensure diversity of the staff is represented as far as possible. 51.5% of the psychology staff submitted to the REF identify as female and 42.3% of the publications submitted are from female staff. Our current eligible staff also includes 12% who identify as BAME and 9% with a declared disability.

School staffing policies support flexible working, career breaks and part-time working and we seek to accommodate carers' responsibilities whenever practicable. Academic vacancies are advertised as suitable for job share, part-time or flexible working, in order to enable a balance of work and home requirements. The duties of those on parental leave are fully covered (also for some time after return, with accommodation of the needs of breastfeeding mothers). The School also strives to support staff and students with disabilities and has a set of policies and procedures in place to ensure that people with disabilities are actively recruited, supported in their development and progression and are able to thrive in an inclusive and accessible environment.

The School subscribes to, or actively aspires to join, a range of external equality and diversity initiatives, either at University level or at School level, in order to guide and sustain best practice:

- The University participates in 'Every Researcher Counts' to improve equality and diversity for researchers in HE
- The University has an implementation plan that aligns with the UK Concordat to Support the Career Development of Researchers, the European Charter for Researchers and Code of Conduct for their Recruitment, UK Quality Code for HE, and the Vitae Researcher Development Framework
- The University is a signatory to the Advance HE Race Equality Charter.
- The University is recognised as a Disability Confident Employer at Level 2, which covers the themes "Getting the right people for your business" and "Keeping and developing your people".
- The University has received the organisational Athena Swan Bronze Award and the School is actively working towards a School-level award.
- The University is a Stonewall Diversity Champion and has an active LGBTQI+ Staff Network.

The School is establishing a new Equality and Diversity champions group linked to the University Equality, Diversity Inclusion Enhancement committee to oversee, advocate for, and provide guidance on equality and diversity issues across the School and support the School's shared commitment to systemic change. The School is proactive in its commitment to promoting equality through enabling leadership potential and career progression of under-represented groups. For example, the University is a member of the Advance HE Aurora development programme for women. In addition, the University's BAME Staff Network represents the interests of BAME staff across the University and the School has instituted a new annual 'Race' lecture held as part of our Black History Month programme of events, which have previously attracting audiences of 300+ from the local community.

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

#### **Income**

Members of the UoA are active bidders and have achieved considerable success in generating external research and enterprise income on a competitive basis. Over the current REF cycle we have secured increasing amounts of external funding year on year with a total spend to date of £594,856 over the REF period. Bids have traditionally focused on non-UKRI funding sources such as the Ministry of Defence and The Wellcome Trust, but UoA members have also successfully submitted to UKRI funders. Our members seek out alternative funding streams, with one member (**Street**) being awarded the first Knowledge Transfer Partnership contract for the

School. Early Career Researchers in the UoA are already strong in bidding activity and the department has sought to harness this research mindset to attract new talent and promote contract bidding. In addition, staff in the UOA have also secured funding from a range of non-HESA-recognised sources. This funding includes £2k in Santander Mobility Awards to support the development of collaborative links with international institutions (**Peebles**). Examples of research grant awards from UoA members are selected to indicate the range and diversity of income streams during the REF period include:

- None in Three (India, Jamaica, Uganda) A Centre for the Development, Application, Research and Evaluation of Prosocial Games for the Prevention of Gender-based Violence. (Global Challenges Research Fund (GCRF)/AHRC, £4,303,604, **Boduszek, Gomersall**, P.I. Jones [UoA20])
- None in Three: the prevention of domestic violence in the Caribbean, Barbados and Grenada. (European Union, €400,000, **Boduszek**, P.I. Jones [UoA20])
- Study on Knowledge, Attitudes and Practices on Violence against Children in Tanzania. (UNICEF, £282,082, **Boduszek**, P.I. Jones [UoA20])
- Using genetic and environmental risks to understand variation in social, emotional, and educational outcomes in individuals with language impairments. (ESRC, £200,000, **Clough**)
- Knowledge transfer partnership between Bob's Business and University of Huddersfield. (Innovate UK and Bob's Business, £158,747, **Street**)
- A computational model of lie detection in SMS scams. (ESRC, £124,523, **Street**)
- Prevalence and variation in antidepressant prescribing across Northern Ireland. (ESRC, £136,971, **Boduszek**)
- Risk factors and outcomes associated with postoperative delirium after cardiac surgery. (Kolegium Nauk Medycznych, Rzeszow, Poland, £70,000, **Boduszek**)
- Personalised training using the Predictive Performance Equation. Defence Science and Technology Laboratory. (Ministry of Defence, £56,300, **Peebles**)
- Evaluation of 'Past Times'. (Reaching Communities Fund, £40,000, **Leeming**)
- Understanding the cyber threat to autonomous vehicles. (Crown Commercial Service (on behalf of the Department for Transport), £30,000, **Peebles**)
- Autonomous agents. Defence Science and Technology Laboratory. (Ministry of Defence, £39,779, **Peebles**)
- Abusing the man in the middle: Investigating the causes, effects, and coping strategies of referee abuse. FIFA and International Centre for Sport Studies (CIES, \$15,000, **Mojtahedi**)
- Impact of sport on wellbeing. (Independent Schools Council, £10,000, **Clough**)
- Gender, sexuality, identity and memory: A psychogeographical study of Kirklees with the LGBT community. (British Academy/Leverhulme, £6,337, **Gomersall, Bridger**)

### Strategies for generating future income

Huddersfield psychologists are well placed to respond to the UK Government's grand challenges related to AI and big data and the ageing society and a key priority for the department going forward is to plan and invest so that psychology can play a leading role in the wider School and University strategies aimed at responding to these challenges. Psychologists in the department are already using machine learning to screen for dementia and autism (**Peebles, J Retzler**) and to analyse large datasets for neuroscience research (**Hallam, C Retzler**), while others are being proactive in forging collaborative relationships with other health professionals to develop new research programmes in mental health and wellbeing. The University's new National Health

Innovation Campus and confirmed £45m investment in health research and innovation will further boost these strategic plans. In addition, we will continue to support the expansion of the world-leading international research into gender-based violence within the None in Three Research Centre and now led by Huddersfield psychologists (**Wager**). Our key strategy is to maintain our success in securing external funds from a variety of sources to support areas of strength while horizon scanning and identifying new sources of income, such as NIHR, the third sector and industry, to target other aspects of the UK grand challenges.

### **Infrastructure and research facilities**

#### Information infrastructure

Psychology research is supported by a wide range of information systems. The University uses the PURE research database to record all research activity and the Scopus abstract and citation database as a main source of performance measures. Psychology staff and students have access to a wide range of research databases including PsycINFO, PsycArticles and PubMed and a dedicated subject librarian to support their research. The research bidding process is supported by several systems, including the Pre-Award/Post-Award (PAPA) and Agresso financial information systems, Microsoft Dynamics for resource planning and customer relationship management, and the Peer Review of Research Applications Management System (PRAMMS) which manages the mandatory internal peer review of all research bids. The University also employs the SkillsForge system to help PGRs manage progression and skills training.

#### Management infrastructure and processes

Research in SHHS is supported by a number of groups, committees and services that help to drive, monitor, coordinate and govern activity. These include:

- The School Research and Enterprise Committee (SREC) including Professors, Heads of Department, the School Diversity and Inclusion Champion, Associate Deans and representation from Readers, academic and professional services staff, ECRs and PGRs. SREC reports into the School Leadership Team and the University Research and Enterprise Committee and is responsible for interpreting central policies, procedures and guidance into the School and for delivering the School research strategy.
- The School Research and Ethics and Integrity Committee (SREIC) reports into SREC and the University Research Group (which is responsible for strategic and policy matters in relation to research at the University) and is responsible for delivering good research governance across the School. SREIC reviews and oversees all research conducted in the School and maintains the School's research governance policies.
- The University-wide Graduate Board is responsible for PGR policy and reports to the University Research Committee. The School Postgraduate Research Committee is responsible for delivering the School PGR function and reports into SREC and the Graduate Board.
- In addition to supporting the School's PGR function, the Research Support Office (comprising a wider group of School- and University-based professional services staff) offers personalised, seamless, end-to-end research support from idea, through funding, to exploitation (including research intelligence, grant-writing, budgeting, ethics, marketing and contracting).
- The School augments the dedicated support delivered by central Research and Enterprise in its provision of specific administrative support for research management and governance, including the PGR administrative function, performance monitoring, and

event management.

- The REF Management Group reports into SREC and is responsible for delivering on the School REF agenda.

#### Physical infrastructure and research facilities

The University's confidence in, and continued support for, psychology research has recently been demonstrated by its commitment to invest in a new premises for Psychology which will include new laboratory space and other research facilities. It is expected that psychology will also play a key role in the University's confirmed £45m strategic investment in health research and innovation, with additional investment in facilities which will form part of a new University-wide National Health Innovation Campus.

The Psychology Department currently has three laboratories for teaching and research: an eye tracking laboratory, a neuroscience and biopsychology laboratory and a virtual reality laboratory. We also hold 64 psychometric tests for the measurement of a wide range of cognitive skills and knowledge, abilities, attitudes, personality traits and educational achievements.

#### Eye tracking laboratory

The eye tracking laboratory is equipped with an SMI 250 Hz Remote Eyetracking Device and an SMI 60Hz Eyetracking Glasses 2 wireless system. In addition to own devices, psychologists also have access to a Tobii Pro/x3-120 desktop eye tracker and a Tobii Pro Glasses 2 wearable eye tracker maintained by the 3M Buckley Innovation Centre, a centre for enterprise and innovation for businesses situated at the University.

#### Neuroscience and biopsychology laboratory

The neuroscience and biopsychology laboratory is equipped with a range of devices for electroencephalography research, including a BrainAmp 64 channel amplifier and an actiCap 64 channel electrode system and an EGI 64 channel amplifier and 64 channel electrode system. The lab also has a NeuroConn DC stimulator plus for Transcranial Direct-Current Stimulation (tDCS) research. For biopsychology research, the laboratory contains 28 Biopac MP36 systems for taking physiological measurements such as GSR, ECG and respiration rate and cold pressor for measuring pain tolerance.

#### Virtual Reality laboratory

The VR Laboratory is equipped with a range of high specification hardware and related software for research into spatial cognition and cognitive neuroscience and for understanding human behaviour in virtual reality environments. This includes a gaming PC with a dedicated VR ready graphics card and expanded memory, a HTC Vive VR headset and an Oculus Rift DK2 VR headset. The lab also has an Emotive EPOC Electroencephalography headset device designed for human brain research in experimental designs using VR headsets for brain computer interfaces and other cognitive neuroscience research.

#### Queensgate Grid HPC cluster

Psychology researchers have access to—and have extensively used—the University's high-performance computing cluster, maintained by the School of Computing and Engineering, to run computationally intensive cognitive models.

Postgraduate facilities

Since REF 2014, the School has invested in a state-of-the-art PGR suite and provides dedicated administrative support for the PGR function in addition to any central support from the Graduate School. PGR students are provided with dedicated shared office space with workstations (although this has had to be suspended since the Covid-19 pandemic), storage for personal belongings, quiet areas, an interview/meeting room with data projection facilities, a room for private study, a kitchen area and an adjacent relaxation room. PGR students have access to free printing. Viva voce examinations are conducted whenever possible in the familiar School research meeting room.

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

Our research seeks to maximise impact by working collaboratively to develop knowledge that informs policy and practice and supports professionals and citizens to bring about lasting changes in society. For example, **Wager** has produced several independent reports for the Government and institutions such as the Thames Valley Office of the Police and Crime Commissioner relating to various forms of exploitation, one of which has recently been identified by the Independent Anti-slavery Commissioner as being influential in developing a new service for victims of modern slavery. **Wager** has also worked extensively with Elmore Community Services for people with complex needs in the Thames Valley region. Elmore developed a new support service for adult survivors of child sexual exploitation (CSE) in the wake of Operation Bullfinch which had uncovered a large CSE ring in Oxfordshire. **Wager** created an evaluation framework at the outset of the new service and continues to assist by conducting evaluations and acting as a member on board of trustees. **Wager** has also recently submitted responses to two Government consultations on gender-based violence and justice for adult survivors of child sexual abuse. **Mojtahedi** was a consultant for a report on improving witness testimony published by the Parliamentary Office of Science and Technology in 2019 and has also produced a commissioned report for FIFA on the causes and health consequence of football referee abuse and to make policy recommendations. **S Kola-Palmer's** research has led to a number of policy and practice changes within the Rugby Football League Super League to welfare provision. As a result, all Super League clubs are now recommended to have a full time Player Welfare Manager (PWM). The PWMs are better trained and supported in their own welfare and are able to more fully support the welfare needs of the players. In addition, psychologists in the departments are making increasing use of public engagement (e.g., "Psychologist in the Pub" and "Café Scientifique" **Street**), social and public media (e.g., The Conversation (e.g., **Wager, Pepelasi, Mojtahedi, Gomersall**) and a Huddersfield Psychology Twitter feed) to promote and disseminate our work. **Clough's** extensive research into mental toughness has been utilised by several educational institutions (e.g., The National Collaborative Outreach Programme, Hull Business school) and local authorities (e.g., Doncaster, Wigan) to develop programmes for developing mental toughness in individuals.

**Contributions to the research base, economy and society**

The achievements of psychology staff have been recognised by prizes and awards. In 2016 **Wager's** paper "Understanding children's non-disclosure of child sexual assault: Implications for assisting parents and teachers to become effective guardians" was selected by the Emerald Literati Network Awards for Excellence as a Highly Commended Paper while in 2019 **Street** received an APS Rising Star Award from the US Association for Psychological Science.



UoA4 staff are embedded in wide international research communities and benefit from an active and fruitful set of publishing and bidding collaborations with other researchers and labs worldwide. SciVal data shows that 39% of psychology publications were co-authored with researchers in other countries. Examples of national collaborations involving either publication or grant application submission include the universities of Edinburgh (**Hallam**), Newcastle, Warwick (**Bagri**), Cardiff (**Wager**), Sussex (**Peebles**), Nottingham (**C Retzler**), Manchester (**Murphy**), Birkbeck (**Peebles**), Imperial (**Murphy**), Sheffield (**Hallam**), Cambridge (**Murphy**), Oxford (**C Retzler**), Glasgow (**C Retzler**), York (**Hallam**) and UCL (**Street**).

International collaborations involving either publication or grant application submission include the universities of Copenhagen (**Street**), UBC in Canada (**Street**), Salamanca (**Street**), Ulm (**Duke**), Padova, Texas at Dallas (**Noyes**), Bonn (**Duke**), Melbourne, Amsterdam (**Street**), Utrecht (**Murphy**), New South Wales, Zurich, George Mason University (**J Retzler**) and Padova (**Hallam**).

The expertise of staff in the UoA is regularly called upon to review grant applications for major national and international research funding bodies including ESRC, European Commission Horizon 2020, National Institute for Health Research, Medical Research Council, Polish National Science Centre, EPSRC, The Royal Society, Israel Science Foundation, US National Science Foundation, The Leverhulme Trust, The Netherlands Organisation for Scientific Research, Chinese Academy of Sciences, and Autistica.

In addition to the above activity, all staff are committed to providing service to the wider discipline of psychology. During the submission period, psychology staff have conducted 31 invited keynote presentations at various conferences and meetings. Staff in the UoA have also served on editorial boards for a number of prestigious national and international journals, including the Journal of Interpersonal Violence, the Journal of Investigative Psychology and Offender Profiling (**Ioannou**), the Journal of Experimental Psychology: Applied (**Peebles**), the Journal of Human Lactation (**Leeming**), the Internet Journal of Restorative Justice (**Wager**), the Journal of Education and Learning (**Tobbell**), EC Psychology and Psychiatry (**Synnott**, **Ioannou**), the Journal of Criminal Psychology (**Boduszek**), Frontiers in Psychology (Cognitive Science) (**Peebles**), Deviant Behavior (**Boduszek**), the Journal of Criminal Justice (**Boduszek**), PLoS ONE (**Boduszek**), the Polish Psychological Bulletin (**Boduszek**), Current Issues in Personality Psychology (**Boduszek**), and Topics in Cognitive Science (**Peebles**). Staff in the UoA also regularly review manuscripts for international and national journals. The headings below reflect the main strengths of the department.

#### Forensic/criminal psychology

Homicide Studies; Aggression and Violent Behavior; The Journal of Forensic and Legal Medicine; Journal of Criminal Psychology; Victims and Violence; Contemporary Social Science; Criminal Justice and Behavior; Violence Against Women; Psychology, Crime and Law; The Police Journal: Theory, Practice and Principles; Journal of Forensic Psychiatry and Psychology

#### Health and wellbeing

Paediatrics and International Child Health; BMC Systematic Reviews; British Journal of Health Psychology; Trials; Chronic Illness; Health & Quality of Life Outcomes; Human Lactation; Maternal & Child Nutrition; Psychology & Health; Acta Oncologica; Pain Medicine; Psychiatry Research; European Journal of Pain; Annals of Behavioral Medicine; Journal of Psychosomatic

Obstetrics & Gynecology; British Journal of Health Psychology; Women's Health Issues; British Journal of Cancer; Neuropsychiatric Disease and Treatment

Cognition and neuroscience

Cognitive Science; Human Factors; Journal of Experimental Psychology: Learning, Memory and Cognition; Journal of Experimental Psychology: Applied; Current Directions in Psychological Science; Quarterly Journal of Experimental Psychology; Topics in Cognitive Science; The International Journal of Human-Computer Studies; Computational and Mathematical Organization Theory; Psychological Research; Interacting with Computers; Addiction, Drug and Alcohol Dependence; Frontiers in Psychology (Cognitive Science).

Miscellaneous

Personality and Individual Differences; The Journal of Personality; Frontiers in Psychology; Journal of Sport Sciences; PLoS ONE; Qualitative Research; Qualitative Research in Psychology; Gender, Place and Culture; Feminism & Psychology; The Irish Journal of Psychology; Journal of Psychological Applications; Journal of European Psychology Students; Aggression and Violent Behaviour; British Journal of Social Work; Frontiers in Psychology; Personality and Social Psychology Bulletin; British Educational Research Journal.