

Institution: Aberystwyth University
Unit of Assessment: 4: Psychology, Psychiatry and Neuroscience
<p>1. Unit context and structure, research and impact strategy</p> <p>Aberystwyth University's (AU's) newest academic department, established 12 years ago, is being returned to REF for the first time. The development of Psychology has been a key element in AU's expansion of its subject portfolio, with the REF 2021 assessment period forming a critical stage in which the Department has moved from an initial emphasis on teaching pre-2013, to the realisation of a balanced unit with academic staff engaged in research activity. Accordingly, the Department's Research Strategy during the assessment period has focused on nurturing a vital and sustainable research environment, building the research capacity of our staff, and consolidating external partnerships to facilitate research impact.</p> <p>The establishment of our research culture has been guided by the University's Strategic Plans, as outlined in REF5a, reflecting emerging principles of: encouraging ambitious, entrepreneurial research that challenges existing approaches and knowledge; creating a coherent research-led academic environment; enhancing inclusivity in research; and collaborating with external partners, in Wales and globally, both in generating research and in passing on the benefits of research through impact and innovation. Strategic support from the University has included investment in staff and facilities for research. The growth of the Department's research has also benefited from University strategies to promote interdisciplinary collaborations that have enabled the Department to achieve critical mass in key areas, including funding for Interdisciplinary Research Centres – notably the Centre for Excellence in Rural Health Research (CERHR), housed in the Department – and cross-departmental research coordination and collaboration within the Faculty of Earth and Life Sciences (FELS).</p> <p>As a relatively new, maturing, department, we have strategically focused our research activity on a small number of core themes in which we have been able to rapidly build expertise and achieve impact. These are represented in the Departmental research clusters of 'Evolutionary and Forensic Psychology', 'Health and Wellbeing' and 'Language and Learning' and include specific empirical concerns with rural health and with youth justice. Our research has a strong orientation to producing applications to address challenges for policy and practice in these areas, supported by iterative engagement with clients and stakeholders to enhance the impact of our work by understanding and targeting their needs. This approach has led to notable contributions assessing the feasibility of tele-health in rural areas, and developing an innovative tool to assess the risk of offending in young people and allow targeted interventions by Youth Justice teams to prevent reoffending, as detailed in our impact case studies.</p> <p>In line with the University's Research and Innovation Strategy (see REF5a), our research combines a special concern with local and national priorities in Wales and engagement with wider societal and scientific challenges. We have utilised access to local, regional and national stakeholders in Wales to form collaborations and develop projects that target the distinctive challenges of our immediate region in rural Wales, including research and engagement through the Welsh language, but which have potential for wider application. At the same time, we are a globally networked department, collaborating with partners in Europe, Asia, North and South America and New Zealand, and conducting research in countries including Brazil and Zambia.</p> <p>Through these efforts we have constructed a vital, inclusive and sustainable research environment that has considerable potential for further expansion and strengthening of research capacity and impact. We aim to nurture and match the research skills and interests of our staff, supporting and mentoring our strong cohort of early career researchers, whilst enabling our more experienced researchers to develop opportunities to lead major projects, including through increasing capture of external research funding. Our trajectory is guided by a continuing Research Strategy encompassing the following objectives:</p>

- Raising the profile of the Department in the discipline by supporting researchers to develop specific areas of expertise in which they are recognised for shaping debates, advancing methods or promoting new empirical areas of study. This has been delivered through individual mentoring and research planning and access to a personal research fund for all research-active staff (see Section 2).
- Supporting researchers in the Department to publish impactful research outputs, including open access articles in leading journals that contribute to advancing knowledge in Psychology and related fields. This has been facilitated by access to Departmental and AU funds for gold open access publishing and procedures for green open access publishing, detailed below.
- Building the capacity of researchers in the Department to successfully compete for external grant income, providing resource to support substantial research projects. This has been supported by participation in collaborative projects to build experience and use of small grant schemes to test ideas, and by professional development activities (see Section 3).
- Strengthening the research capacity and reach of the Department by encouraging staff to participate in interdisciplinary and international networks. Within AU, interdisciplinary engagement has been supported by the University's Interdisciplinary Research Centre scheme and the ESRC-funded Transformative Social Science initiative (see Section 4).
- Growing postgraduate research (PGR) student numbers, enhancing the vitality of the Department's research environment. Funding from the Knowledge Economy Skills Scholarship programme, AU's AberDoc competition and the Department has contributed to an increase in registered research students (PhD and MPhil) from 7 in 2013 to 18 (15.5 FTE) in 2020 (see Section 2).
- Enabling research in the Department to have an impact on wider society, culture and the economy, by supporting impact acceleration activity. This has included staff leave to focus on impact activity, teaching relief and dissemination support, resourced through AU funding (see REF5a).
- Developing partnerships with industry, public sector and civil society bodies to foster innovation and enterprise activity. These have been assisted by networking with key stakeholders and by support from EU Structural Funds.

The research strategy is implemented through a structure in the Department that connects staff in three research clusters, focused on 'Evolutionary and Forensic Psychology', 'Health and Wellbeing' and 'Language and Learning', which facilitate collaboration and mutual support within the Department, each with a designated leader. In addition, during the assessment period the Department has established two research centres to act as focal points for internal and external collaboration, research development and stakeholder engagement, and to highlight the research strengths of Psychology at AU. The first, the Centre for Excellence in Rural Health Research (CERHR) led by Rahman, is an Interdisciplinary Research Centre connecting researchers in Psychology with colleagues in Biosciences, Computer Science, Human Geography and Sports and Exercise Science. It builds on early collaborations with the Hywel Dda Health Board and Bronglais Hospital, located adjacent to the University campus, and has strong emphasis on addressing the health and wellbeing challenges of rural Wales whilst also developing opportunities for research, innovation and engagement nationally and internationally. As an Interdisciplinary Research Centre, CERHR has received start-up core funding from the University.

The second research centre in the Department, the Centre for Critical Psychology (CC-PSY), established by Riley and now led by Robson, seeks to create a "better everyday life" by using

the tools of critical psychology. Driven by concepts that regard the heart of most research questions or policies is a desire for people to think and act differently. In addressing this, CC-PSY takes a different approach to many established routes; rather, their research starts with questions of how a person makes sense of themselves, before understanding what they can say, think or do when they understand themselves this way. Alongside these questions are wider consideration of social, political, economic or material conditions that either enable or restrict this understanding. This emerging approach allows an understanding of the person in context, to value their sense making, and to identify new ways of reconceptualising problems to enhance lives. Research in CC-PSY has been funded by the British Academy, EPSRC and Canadian Social Science and Humanities Research Council.

The Department has adopted policies and procedures to facilitate the wide availability of our research through open access publishing, and to ensure standards of research integrity and ethical practice, working within the framework of University policies (REF5a). All peer reviewed articles are made available through either the 'green' or 'gold' open access routes. 'Gold' open access publishing has been supported by the JISC agreements with publishers, publication funds for UKRI-funded research administered by the University, and strategic use of Departmental funds. 'Green' open access publishing is facilitated by the Aberystwyth Research Portal, to which staff are required to submit final author manuscripts of all accepted papers. The Research Portal also enables archiving and sharing of datasets, supporting research integrity by facilitating the reproducibility of research.

All research in the Department follows robust protocols for research ethics and safeguarding the wellbeing of both researchers and research participants, which align with the British Psychology Society's (BPS) professional standards. These include measures to ensure the informed consent of participants and to avoid disproportionate risks. Technician support for laboratory research and training in the use of laboratory equipment ensures the safe use of research facilities. Ethics assessments must be registered for all University staff and student research prior to commencement using an online form. To comply with the BPS Code of Ethical Conduct (2018) and Code of Human Research Ethics (2014) all Psychology researchers are required to submit an extended ethics application to the Department of Psychology Research Ethics Committee (for staff and postgraduate research) or for an internal, independent review (consisting of two reviewers, separate to the supervisor) for low-risk undergraduate research. Any research proposals (UG, PG or staff) that include minors or those in vulnerable groups, or that raises specific issues, are referred to the AU Research Ethics Panel for more detailed assessment. Members of staff in Psychology have made significant contributions to the development of the AU framework for ethics in research and review system, including Kate Bullen (a member of the Department to 2015 and now Honorary Professor) as the University's inaugural Director of Ethics and Equality, and Sarah Riley (a member of the Department to 2018) as a member of the team responsible for developing AU's online ethics application. Subsequently, members of the Department have continued to contribute their expertise to the University's Research Ethics Panel (Robson and Ivaldi).

As a relatively small department, Psychology at AU has an inclusive approach to research planning and management that is responsive to initiatives by individual staff. The preparation of our first REF submission has been an inclusive and collaborative process involving all staff, that has allowed us to reflect on our progress in building a vital and sustainable research environment over the assessment period, and to refine our aims and ambitions for the future. In the next REF assessment period, the Department will continue to pursue the objectives of the ongoing Research Strategy, outlined above, with the following priority actions identified for the next 2-3 years:

- Building our research capacity in targeted areas and strengthening our research leadership by the appointment of a Chair in Psychology;
- Increasing our external research grant income and securing investment for further development of research laboratories;

- Developing our research excellence in interventions in youth justice into a third research centre;
- Introducing a competitive research fund for individual projects and groups to consolidate our research capacity and stimulate applications for external research funding;
- Developing bursaries from Departmental funds to support research students for key areas and for Early Career researchers;
- Expanding our collaborations with other disciplines at AU, with other HEIs and with commercial and public sector partners, including through contributions to the new AU interdisciplinary research programmes on Rural Futures (through CERHR) and 'The Lives We Want' (through CC-PSY) (see REF5a).

Our research in the next REF assessment period will continue to emphasise our cluster themes but seek to expand into new areas reflecting staff appointments and evolving research interests. Recent success in external grant capture will support new studies over the next 1-3 years on the impact of rest and recovery rooms on the wellbeing of NHS staff (Ivaldi, Royal Society £4k); changes in human behaviour following specific events (Jiaqing O with colleagues in AU, Royal Society, £9.8k); technology responses to epidemic outbreaks and the global economy (Jiaqing O with colleagues in AU, Royal Society, £9.8k); and on farmer decision making as part of the €7m Horizon 2020 MIXED project on 'multi-actor and transdisciplinary development of efficient and resilient mixed farming and agroforestry systems' (Payne, £8k to Psychology).

2. People

Staffing Strategy and Researcher Development

At its inception - prior to this assessment period - the Department was focussed on covering teaching needs and this drove staffing strategy. After 2014 however, embedding research into the Department's culture became a strategic priority and staffing strategy evolved to consolidate emerging areas of research focus. Compared to many psychology departments in the UK, the research-active staff cohort of 18 FTE is still relatively small, but an ambition to ensure that research is a driving priority has now been embedded into the Department's culture and its staffing.

Recruitment during the assessment period has targeted staff with research interests in Health and Mental Health (Aspden) and Counselling (Zhimin He). The appointments were made to consolidate the Department's Health and Wellbeing cluster, aligned with the University's strategic plans to grow health-related expertise. Elsewhere appointments have been made to support research in Evolutionary Psychology (Jiaqing O & Greengross) and Bilingualism (Binks). Additional capacity has included the transfer of researchers from other departments within AU including from Law and Criminology (Norris G. & Norris H.) and Sport and Exercise Science (Payne), bringing experience and contributing to capacity-building for multi-disciplinary research on Behaviour Change, and to a new research focus on Forensic Psychology. The further strengthening of the Department's research vitality through new appointments will continue in the next REF period, including the strategic appointment of a Chair in Psychology to provide leadership in the next stage of the Department's research development, and enhancing research grant capture and collaborations.

As a growing department with a significant contingent of early career researchers (5 out of 18) an important emphasis of staff development during the assessment period has been building individual and collective research capacity. All newly appointed staff have a mentor allocated to support their development, and established staff act as research mentors in this capacity. Ongoing support for all staff is provided through the University's Effective Contribution Scheme, which involves target setting and identification of training and development needs as part of an annual review, and which is linked to the completion and discussion of a Personal Research Plan. The Department provides a personal research fund of £1000 per annum to all research-active staff, ensuring equality of opportunity for participation in conferences and research meetings and undertaking small scoping projects. Staff additionally have access to the University Research Fund, which provides funds of up to £10,000 to support research activity

including pilot studies for larger external grant applications (see REF5a). Early Career Researchers are also specifically supported via an annual sandpit event for the development of projects and have the opportunity to apply for ringfenced University pump-priming funds.

Members of the Department actively participate in research-related professional development courses offered by the University (for example, writing grant applications and project management), as well as in pan-University research capacity-building and sharing initiatives, such as regular research café and engagement events (see REF5a). Staff have also been supported in completing more specialist training and development in areas relevant to their research - such as Counselling (Mackiewicz) and Coaching (Ivaldi), and in methodological techniques such as Q-methodology (Zhimin He) and Longitudinal Data Analysis (Norris G.), as well as in using new laboratory equipment such as EEG and Eye Tracking. Ivaldi also received training in the Conversation Analysis Role-play Method (CARM), a technique designed to apply research findings in non-academic environments and contexts. Several staff have also undertaken training in Systematic Review (Hall, Rahman, Ivaldi and Holt), a technique now used within the Department in research and as a support in the development of PG research projects. During the assessment period, five members of staff (Greengross, Hall, Ivaldi, Rahman and Riley) have been selected to participate in the prestigious Welsh Crucible programme, a HEFCW-supported intensive programme of personal, professional and leadership development for future research leaders in Wales.

Postgraduate Research Students

Postgraduate research has been cultivated in the Department during the assessment period as part of the development of a vital and sustainable research environment. This has been advanced through a strategy that has combined securing externally funded PhD studentships with Departmental funding for one-year MPhil research studentships, enabling the rapid establishment of a sizeable PGR group. In total, 5 PhD students (4.5 doctoral awards due to one joint supervision with Geography; REF4a) and 6 MPhil students have completed studies in the Department during the assessment period, and on the census date on 31 July 2020 there were 11 PhD students (9.5 FTE: 8 F/t and 3 P/t), 1 DProf, and 9 MPhil students registered in the Department.

The Department has been successful in securing 1 full PhD studentship from the University's highly competitive AberDoc scheme and 7 PhD scholarships from the Knowledge Economy Skills Scholarship (KESS) scheme (detailed in section 4). In order to proactively support the growth of research focussed training, the Department has funded six bursaries for MPhil degrees, with staff applying for access to them on a competitive basis, and awards made according to criteria including alignment to research themes and the development of impact. This approach has supported the development of small research clusters and boosted the vitality of the Department's research environment with a vibrant postgraduate group, injecting energy and activity. Additionally, staff contribute to PhD and DProf supervisory teams in departments elsewhere in the University – in Geography and Earth Sciences (DGES), the Institute of Biological, Environmental and Rural Sciences (IBERS), Aberystwyth Business School, Law and Criminology, and Computer Science. In addition to these, one PhD project is being second supervised in Bristol University.

Staff supervising PGR students attend training provided by the University to support their supervisory role. Staff in Psychology also contribute to the training of PGR students across the University, supporting sessions on research skill development and communication in science. PGR students are also encouraged to engage with the University Continuing Professional Development programme and to attend relevant student conferences. As PGR student numbers have continued to develop, individual and shared offices with appropriate IT facilities have been allocated, and the Department has invested in further facilities for PGR students, providing communal research rooms within the building. PGR students are encouraged to participate in research conferences and networks to disseminate their work; a number have published papers in journals, including the *Journal of Rural Studies*, *Personality and Individual Differences*, and the *Journal of Police and Criminal Psychology*. Students who have completed their PhD studies

during the assessment period have secured employment at Manchester Metropolitan, Swansea University, and within the Department here in AU.

Inclusion, Equality and Diversity

Principles of equality, diversity and inclusion have been central to the ethos of the Department since its formation, with the founding Head of Department Kate Bullen later playing a significant role in shaping University-wide policies as AU's first Director of Ethics and Equality in the early stages of the REF assessment period. These principles have guided both our staffing strategy and our support for research, contributing to the assembling of a diverse and gender balanced team of research active staff, with 10 female and 8 male staff, including international staff from Singapore and China. Members of the Department played a leading role in the development of the University's successful application for an Athena Swan Bronze Award and the Gender Equality Chartermark in 2014. Psychology staff remain engaged in University-level work on equality and inclusion, notably O'Hanlon, who has worked with the University on relevant Athena Swan developments during this REF period. The Department has staff acting as mentees and mentors on the University's female academic mentoring programme and embedded in the Women in Research Network, which enables female staff members from across the institution to feed into executive level decision-making and strategic planning. More broadly, the commitment of AU is recognised by a Disability Confident Employer accreditation and inclusion in Stonewall's Top 100 UK Employers for a LGBT+ friendly workplace. All staff are required to have completed Equality and Diversity Training and a number of networks promote equality issues and provide support for researchers, including the Women in Research Network, BAME Network, LGBT Network and Disability and Wellbeing Network. Additionally, members of the Department have participated in Advance HE's 'Aurora' programme and Academi Wales' 'Springboard' training for aspiring women leaders.

Principles of equality and inclusion have been incorporated into the REF 2021 selection process, as outlined in the University's Code of Practice, with all members of the REF Reading Committee and supplementary reviewers required to have completed unconscious bias training. The Departmental REF Reading Committee has also included an independent member from a cognate department in the Faculty of Environmental and Life Sciences to monitor fair practice. Applications for output reductions for Individual Staff Circumstances are assessed through an anonymous process, with decisions made at University level. Members of staff in Psychology at AU additionally have contributed to both discussion and action on equality, diversity and inclusion issues in higher education more broadly and in the public domain, through our research and public engagement work. Examples include Passam's involvement in the EPSRC Inclusion Matters programme that seeks to promote more inclusive cultures for under-represented groups in STEM university departments by collaboratively developing, trialling and evaluating a reverse mentoring scheme and facilitating long-term institutional learning and change.

As a department of Psychology located in Mid-Wales, we support a bilingual research environment in which English and Welsh languages have equal status. All research conducted in Wales follows AU's Welsh Language Policy with opportunities for research subjects to participate in Welsh and bilingual communication with research participants and the public. Staff and postgraduates are encouraged to present and publish research in Welsh where appropriate, and researchers in the Department have undertaken work that aims to improve policymaking on the Welsh language and strengthen inclusivity in the community. Examples include Binks' research on language and learning, and a collaborative study with colleagues in the Department of Geography and Earth Sciences on how English-Welsh bilinguals make decisions about which language to use when initiating a conversation. Research through the medium of Welsh is supported by the Coleg Cymraeg Cenedlaethol, to which Binks and Rahman contribute as members of the national subject panel for Psychology.

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

As a developing research department, our strategy with respect to external grant income during the assessment period has been to emphasise the importance of building capacity and gaining experience in order to equip our researchers to successfully compete for and lead substantial research grants, to enhance the vitality and sustainability of our research environment in the next REF period. Accordingly, we have targeted three main forms of research funding in the REF 2021 assessment period:

- (1) participation as partners in large collaborative projects that have allowed our researchers to access critical mass and gain valuable experience;
- (2) research contracts from public agencies and other sources that have strengthened connections with key stakeholders and facilitated applied research with potential societal impact;
- (3) small grants from internal and external sources to support scoping and pilot studies that have enabled staff to test ideas and develop a research profile.

Participation in large collaborative projects include Passam and Riley's involvement as co-investigators in the EPSRC Inclusion Matters project, with £120k in income for Psychology, including the employment of Christian Moller as a Post-Doctoral Research Assistant, and Riley's contribution to the €5m Horizon 2020 IMAJINE project on territorial inequalities and spatial justice (with £8.7k in funding awarded to Psychology).

Contract research for public agencies has included collaborative work with the Youth Justice Service funded by the Home Office and Youth Justice Service (Norris G., three awards to AU totalling £28k), and projects for the Home Office on government employment for women from lower socio-economic groups (Passam, £4.7k) and the Hywel Dda Health Board on acceptability of telehealth to monitor COPD and diabetes (Rahman, £10.4k). The Centre for Excellence in Rural Health Research, which is a key vehicle for developing stakeholder-focused research in the Department, has received core internal funding of £64k over the last four years of the assessment period, with a further award of £15.5k in 2020/21 as part of the University's Interdisciplinary Research Centres competition to cover staff time, network events and facilities.

Small grants for scoping and pilot research have been secured from external and internal sources. External income has included grants from the British Council (Hall, £15.7k) on sport and social transformation in Brazil; and the Joy Welch Fund (Jiaqing O; £2.2k - looking at how people develop perception of their environment, and also £4.9k - to develop a scale and measurement of wellbeing in humans). Several members of staff received funding for collaborative interdisciplinary scoping projects through the HEFCW Welsh Crucible programme, including a feasibility study on enhancing rural health services using unmanned aerial vehicles (Rahman: £5.9k), and a collaboration with Bangor in a Psychology and Linguistics project looking at Bilingualism and Humor (Greengross: £7.3k).

Rahman and Payne have received grants from the UKRI Global Challenges Research Fund, via the Centre for International Development Research at Aberystwyth (CIDRA): Rahman for work on addressing the challenges of nursing in rural Zambia (£14k), and Payne as seed grant for research on future-proofing knowledge exchange between farmers and scientists in Nigeria (£9k). Small grants have also been awarded to members of the Department from the ESRC-funded Transformative Social Science programme at AU (Rahman, Norris G., Payne, Ivaldi), and from the ESRC WISERD Civil Society Research Centre (Norris G.).

The AU University Research Fund (URF) has been a key internal source of funding targeted at removing small barriers to data collection and project development. Following an award, we encourage staff to maintain engagement and extend their thinking to larger collaborations and bids. Awards from the URF have been received in the assessment period by Rahman, Wright, Binks, Taylor, Ivaldi, Jiaqing O and Greengross.

The development of research proposals and applications for external funding are supported by the University's Department of Research, Business and Innovation, which includes a Research Development Officer assigned to the Department. Other initiatives include internal peer review of proposals and sharing of expertise, and participation of Psychology staff in activities including a 'Grants Factory' workshop, research cafés and sandpit events. Riley's involvement in the IMAJINE project followed her participation in a workshop and capacity-building 'resilient regions' network as part of the AU Transformative Social Science programme. The promotion of equality, diversity and inclusion in capacity-building for research grant capture is addressed through initiatives including the University's Women in Research Network and participation by women in the Department in external capacity-building programmes including the Welsh Crucible.

Facilities and infrastructure

Facilities for psychology research have been developed over the last decade alongside office and teaching spaces in the refurbished P5 building that has been the Department's home since 2011, following a strategic long-term plan for investment in laboratories and equipment. The bespoke laboratories were designed at that time to support research directions seen as key to the development of Psychology as a centre of applied research in the field. These facilities have played a key role in the transition into the current REF cycle, facilitating work with the EEG and eye trackers (Wright and Taylor) and work within the developmental labs by O'Hanlon. Additional investment and equipment design and acquisition (approximately £94k) has been made available from Departmental funds. The delivery of the investment plan during the assessment period has incorporated the acquisition and installation of facilities and equipment including:

- Data Acquisitions Systems BioPac Data Logger (Portable) (2019)
- Data Acquisitions Systems BioPac MP150 (2014)
- Tobii wireless, mobile eye tracking Glasses (2014)
- 0.51 Qualitative recording space with inbuild recording functionality (2018)
- Video and sound (stimulus) editing facilities (2018)
- Bespoke Laboratory control and EEG analysis PC (2018)
- Monitor Audio Speakers with Marantz amplifier (2015)
- Pedometers, Stopwatches, heart rate monitor watches, blood pressure monitors (2015)
- Cedrus SV-1 Smart voice keys and response pads (2014)
- Transcription software and pedals (2016/17)
- ANT Neuro 64 channel EEG (2018)
- Bespoke Head-Microphone for 3D Sound recording (2019)
- IAC acoustics Mini Audiometric Sound Room (2018)
- Lab kitchen facilities for food-based experiments (including lab spec fridges + cooking facilities) with hatch to research cubicle (2015)
- Autism Diagnostic Observation Schedule (ADOS) (2013-14)

These investments have supplemented equipment purchased prior to the assessment period, including Data Acquisitions Systems BioPac MP36; IAC Acoustics Sound Attenuated Chamber; video and sound (stimulus) editing facilities; Vista room surveillance system; pedometers, stopwatches, heart rate monitor watches, blood pressure monitors; and transcription software and pedals.

The development of the Department's research facilities has been supported by HEFCW capital investment delivered through competitive internal AU processes and planned expenditure from the Department's consumables budget. Investments have been guided by staff research needs within the framework of the Department's strategic planning. The flexible response to facility provision has led to project development and funding for research by Taylor, and for post-graduate research in a number of areas, including work with pro-biotics, EEG and language (Wright) and in aspects of developmental psychology including factors relating to Autistic Spectrum Disorder (O'Hanlon). Software packages for research, such as NVivo for qualitative analysis, are available either through central University licences or as a result of spend from Departmental funds. The University's library and electronic information resources and the

adjacent National Library of Wales copyright library offer access to an extensive range of books, scientific journals, and online databases for research. Through collaborative projects, researchers in Psychology are additionally able to access laboratory facilities and resources in other departments within the University, notably in Computer Science, and the Sports and Exercise Science laboratories of the Institute of Biological, Environmental and Rural Sciences (IBERS), where specialist equipment, such as Douglas bags have been used in research looking at stress and falls in the older population.

Technical support is integral to the Department's research environment, provided by a specialist technician. Training staff and postgraduate students in the use of the research laboratories is a significant part of the technician's work, including bespoke training with EEG, eye tracking & food handling. Where specialist technical support is not available within the Department, it is sourced elsewhere in the University or supported from Departmental funds as necessary. For instance, support for Taylor's work in stress and falls, and Holt's work on Temporary Hearing Threshold Shift, was provided by technicians in the Institute of Biological and Rural Science (IBERS) and the Department of Physics respectively.

Funds and space for further development of facilities for Psychology research have been confirmed, including the expansion of the Psychology laboratories to accommodate the continued development of psychophysiological research and an extension of the EEG facilities, as well as the provision of clinical testing facilities to support research collaboration with the Hywel Dda Health Board.

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

Collaboration

Collaboration is central to the establishment and development of research in Psychology at AU, adding to the vitality of our research environment by creating critical mass and expanding our capabilities, and strengthening its sustainability by forming long-term partnerships. These include fostering relationships with public agencies and industry that facilitate our contributions to the economy and society. Internally, Psychology researchers have ongoing collaborations with colleagues within AU in Computer Science (Rahman, He, Norris, G., Passam), Aberystwyth Business School (Norris, G.), and Sports and Exercise Science (Payne, Taylor). The largest collaboration is the Centre for Excellence in Rural Health Research, which brings together our psychologists with researchers from across AU, in bioscience, computer science, human geography and sports and exercise science. Members of the Psychology Department have contributed to the Aberystwyth Behavioural Insights (ABi) Interdisciplinary Research Centre along with geographers, notably on language choice.

Externally, our staff have engaged in collaborations with academic researchers in the UK and internationally. Notable examples include the EPSRC Inclusion Matters project (Passam) with Birmingham University (which also involves collaboration with Computer Science at AU); the 'Twenty-First Century Digital-Born Bibliography' at the University of Alberta project (Riley) funded by the Canadian Social Science and Humanities Research Council; and work with researchers at Coventry University on the 'Tube Crush' British Academy-funded study (Riley).

Rahman's work with the Zambezi Ecohealth Partnership, collaborating with partners in Aberystwyth, Canada and Zambia, will establish a rural nurse network in communities and facilitate important joint research in the forthcoming REF period. Hall has worked as part of a steering group for a British Council and Bond University (Australia) project on developing sport for diplomacy, and has collaborated with Premiership Rugby, the British Council and Serviço Social da Indústria (SESI), Brazil on projects relevant to the development of Rugby as an agent of social change. Payne has collaborated with colleagues in Nigeria in research using his knowledge of social learning, group dynamics and motivation in those responsible for the development of sustainable agriculture. Zhimin He is expanding her work on technology and mental health with collaborations involving colleagues in China. Jiaqing O has contributed with

co-researchers in 27 countries to a comparative analysis of social networks and the prioritisation of activities, published in *Perspectives in Psychological Science*.

Partnerships and research links have further been developed with Welsh and UK government and non-government agencies including Hywel Dda University Health Board, The Home Office, Ceredigion County Council, Dyfed-Powys Police, and the Youth Justice Service, as well as with several charities. Collaboration with the health sector is an especially important part of the research environment in Psychology at AU. Links with the local health board and hospital were developed through shared interests from the establishment of the Department and these were formalised with the creation of the Centre for Excellence in Rural Health Research (CERHR) in 2016. The Centre's steering group includes the Clinical Director for the Hywel Dda Health Board and representatives from the Powys Teaching Health Board, Rural Health and Care Wales, and other relevant stakeholders, helping to shape research and collaborative initiatives to inform the understanding and future delivery of high-quality healthcare meeting the needs of rural communities in the region. CERHR is fostering a community of university researchers and health service professionals, with opportunities for exchange and future co-working, including through a regular seminar series that disseminates rural health research. Talks have been given by AU academics, Hywel Dda University Health Board clinical staff as well as visiting speakers (including Worcester University, the Bevan Commission, the Transport Research Laboratories and Rural Health and Care Wales). The seminars are advertised widely through social media and relevant channels, with attendance by health professionals, Welsh Government, local authorities and interested members of the public.

Links with industry are at an earlier stage of development but include a collaboration by Taylor with a food manufacturer examining the neuropsychological base behind potential well-being benefits of probiotics, as well as support for postgraduate research. The Department has secured 5 collaborative PhD studentships, and 2 collaborative MPhil studentships through the EU-funded KESS (Knowledge Economy Skills Scholarships) scheme, facilitating work with industry, public sector and civil society partners. Notable examples have included projects on the wellbeing and care of carers in communities with Ceredigion County Council; on telecare and palliative care with the Beacon of Hope Hospice; on the health and wellbeing benefits of a new school curriculum in Wales with Orbis PLC, a special educational needs provider, on the role of colour in learning in children with autistic spectrum disorder; and on how internet-based films may help those at risk of diabetes, with PocketMedic, a company who develop Health communication media. Two further KESS projects have been sponsored by Hywel Dda Health Board looking at the wellbeing and resilience of those nursing cancer patients, and a project looking at support for those in crisis has been sponsored by Platform, a Cardiff-based charity.

Contributions to Economy and Society

The Department's collaborative relationships with public agencies and civil society groups enabled the development of applied research that is responsive to societal needs and which has made notable contributions to the economy and society, both in Wales and further afield. Our main contributions have been in three areas: enhancing health and wellbeing; public policy and practice on crime and justice; and promoting equality and diversity in society.

Contributions to *enhancing health and wellbeing* within society have included work by Rahman and the CERHR, notably on telehealth. As outlined in one of our submitted impact case studies, in response to the COVID-19 pandemic a hospice charity used evidence from Rahman's work to secure National Lottery funding to develop "a virtual hospice at home service" for use during and beyond the pandemic. This service will complement the existing palliative care telehealth service to deliver an online suite of supportive therapies such as counselling, art therapy, and relaxation sessions while enabling befriending volunteers to maintain contact with their clients. CERHR has also provided a briefing for the Welsh Senedd on the potential impact of Brexit on health and wellbeing in rural Wales, under the University's framework agreement with the Senedd's research services unit.

Elsewhere in the Health and Wellbeing cluster, Zhimin He has developed methods for looking at technology designed to improve the health and wellbeing of those with a range of mental health difficulties, including schizophrenia, depression and those engaging in self-harm. This important and very timely work allows support to patients living in the community, by effectively monitoring their symptoms. Alongside the individual beneficiaries, the impacts enable the more careful allocation of resources in healthcare. To support these emerging sub-topics, Aspden was recently recruited to explore how health related behaviours can be encouraged using principles of messaging and priming. He has also worked closely with clinical research teams in UCL developing and administering trials, and assessing the effectiveness of treatments, contributing to a wider skills base and knowledge exchange in the Department and University.

Other contributions to enhancing health and wellbeing have included work by Payne on effective communication strategies for nurses helping cancer patients; Taylor's probiotic Kefir project examining the impacts of these supplements in development; Wright's research on the performance of the cerebral hemispheres during written word recognition, with a particular focus on the reading performance of brain-injured patients; and collaborations with local authorities and organizations including Age Concern and MIND on various aspects of wellbeing, including supporting the development of policies relating to alcohol (Mackiewicz), school engagement (Norris H.) and resilience (Ivaldi).

Contributions to *public policy and practice on crime and justice* have followed from G. Norris's research and collaborations with the Home Office, the Youth Justice Service and the Dyfed Powys Police and Crime Commissioner. As described in the second of our submitted impact case studies, these collaborations have secured over £50k in total funding from the Home Office, Ceredigion Youth Justice and Prevention Service (CYJPS), Dyfed-Powys Police and Crime Commissioner, to deliver and evaluate interventions with a range of young offenders at risk of involvement in Serious and Organised Crime (SOC) throughout the Ceredigion and Dyfed-Powys Police force area. Norris G. has advised the Home Office Prevent team and South Wales Police on issues such as County Lines organised crime, as well as collaborating with the Home Office in evaluating projects overseas aimed at disrupting the drug and people supply networks. Additional funding from the Dyfed-Powys Police and Crime Commissioner has also continued collaborations with Ceredigion Youth Justice and Prevention Service, which included a funded post-graduate research studentship. Norris G. also had input to South Wales Police Violence and Vulnerability Unit's work in developing a strategic framework for tackling serious violence in Wales. The findings from the SOC projects have been reproduced in the form of a "SOC Workbook" to be used by youth offending teams and ancillary organisations as a template for SOC intervention work. A dedicated web-portal 'Preventions' (<https://www.preventions.co.uk>) has been developed, and hosts the workbook and wider details of the project and broader information on preventions work both locally and nationally.

Norris G. and representatives from Ceredigion Youth Justice and Prevention Service (CYJPS) were invited keynote speakers at the University of Central Lancashire hosted 'YOT15 - Youth Justice and UCLan Criminal Justice Partnership presents Creating Potential Together' in October 2018, presenting research findings and policy guidance to over 100 practitioners from the North-West of England. The SOC project was twice shortlisted for an award with the Howard League for Penal Reform. The work has further been cited in the Home Office SOC (Serious and Organised Crime) Local Partnerships Bulletin and featured on BBC Wales Television and Radio. Norris G. collaborates with the Business School to evaluate the rural crime strategy for Dyfed-Powys Police (DPP) – a project with interest and relevance to similar communities world-wide, gathering empirical user data on rural policing which informs the Rural Crime Strategy. Findings have been disseminated through the Force's website and engagement networks, with presentations at the DPP HQ conferences annually. Contributions with respect to crime and justice also include research undertaken by Norris H. in the application of restorative justice techniques as conflict resolution tools that has informed skills-based workshops and evaluations for local schools and sixth-form pupils and teachers.

Contributions to *promoting equality and diversity in society* have been led by the Centre for Critical Psychology (CC-PSY). The Centre has secured Grants from the Home Office Gender Equality Network and the EPSRC Inclusion Matters scheme as well as hosting conferences, including ACE (Adverse Childhood Experiences) Support Hub Research Conference and the QMIP (Qualitative Methods in Psychology) Annual Meeting. Work here by Passam has been widely cited in the Civil Service internal policy guidance with respect to the promotion of gender equality and empowerment. Specific contributions to equality issues in Wales around the Welsh language have been made by Binks, whose work is radically challenging education matters relating to Welsh language provision. Her research reflects well-established psycholinguistic and cognitive principles and responds to Government and University drivers to support and shape the development of the Welsh language.

The Department has also contributed extensively to the public understanding of science through a range of outreach and public engagement activities. We are involved annually in activities associated with British Science Week (Holt), and National festivals and celebrations such as the URDD (Youth) Eisteddfod (Rahman), the National Eisteddfod (Rahman, Binks) and the Royal Welsh Show (Rahman, Payne, Binks). The Department has organised and hosted extremely well received public events, such as the Adverse Child Experiences (ACE) Wales and The British Psychological Association Welsh Branch conferences. Other public lectures and workshops have included work with Hywel Dda Health Board's Bronglais Hospital on Lifestyle changes and Heart disease (Robson) as part of their training for GPs resulting in feedback indicating that the experience will be instrumental in changing their clinical practice. The Department has built well-established relationships with schools and colleges around the UK with talks and workshops during the REF period numbering in excess of 200.

The Department encourages staff to disseminate their work as widely as possible, and this includes engagement with all forms of media as appropriate. To facilitate this, we work closely with the communications team at the University. For example, staff from the Department have appeared on radio and television and in the press discussing work on many topics, including Memory and Wellbeing (Holt), Rural Nurse recruitment and Remote Art Therapy (Rahman), Forensic Psychology (Norris G.) and the Evolutionary Psychology of Humour (Greengross). One-on-one meetings with editorial staff from The Conversation have been taken up widely in the Department, resulting in 12 articles which have been read collectively over 500,000 times within this REF period. In response to the COVID-19 pandemic we have looked to expand our capacity for online public engagement and arranged training in developing an academic online presence and using social media. This session equipped staff with the knowledge and skills necessary to engage with relevant components of social media that will support their research profiles and so help in their public engagement, collaboration and visibility outside the University.

Contributions to the research base

The vitality of the research environment in the Department is enhanced by the engagement of staff in professional networks and activities and contributions to the wider research based in Psychology. Members of the Department contribute as editorial board members for leading international journals including the Evolutionary Psychology section of *Frontiers in Psychology*; *The Journal of Evolution, Mind and Behaviour*; *New Ideas in Psychology*; *The International Journal of Humor Research*; and *Personality and Individual Differences*. Another aspect of our work has been in our close engagement with the British Psychological Society (BPS), not only in relation to subject development, but to develop research engagement and core thematic networks. Both Hall and Holt contribute to the work with of the BPS validation and accreditation services. This aspect of our work allows us access to knowledge in the development of many aspects of Psychology in the UK, including how research skills are developed and how staff workloads can be supported to help them access the time to develop their research, as well as how to support younger researchers in their departments. Most significantly, Sarah Riley was chair of the BPS Qualitative Section (2017-2019) and here she was an advocate for expanding the REF panel to encompass a wider representation of qualitative research in the UoA.