

Institution: University of Chester
Unit of Assessment: 4 - Psychology, Psychiatry and Neuroscience
1. Unit context and structure, research and impact strategy

Psychology, Psychiatry and Neuroscience research is primarily undertaken in the School of Psychology, one of the largest academic departments at Chester. Our 2014 return included staff from Biological Sciences too; however, recognising research growth we now return the two academic fields to separate UoAs. 15 Psychology staff were returned to REF2014, increasing to 21 this time, alongside one additional researcher with a Faculty-wide remit to establish a cross-disciplinary research cluster. Since 2014, the School of Psychology has included a satellite group based at University Centre Shrewsbury. Chester is a teaching-focused institution and as such is a developing research environment: we have grown considerably over this REF period, and our strategy demonstrates our ambitions towards continued internationality and excellence.

Supported by (i) new appointments of research-active staff, (ii) internal promotions to senior research roles, and (iii) expanded facilities and institutional financial support for research, our activity has significantly expanded since our first UoA4 return in 2014. Our research is structured around five themes:

- Three research groups focus on **(i) Experimental and Comparative Psychology**, **(ii) Family, Infant and Child Psychology**, and **(iii) Forensic and Investigative Psychology** (which works closely with our Faculty-wide Crime, Harm and Justice Research Group);
- The **Chester Research Unit for the Psychology of Health (CRUPH)**, which focuses on understanding health and wellbeing from social and cognitive psychology perspectives; and,
- The **Centre for Contextual Behavioural Science (CCBS)**, an off-shoot from CRUPH given University Research Centre status in 2019, which conducts experimental and applied research in contemporary behavioural psychology, including clinical trials of psychological interventions.

As an overview, growth in our research environment is evidenced by increased:

- numbers of staff returned (19.8FTE, representing a 48% increase on REF2014);
- methodological rigour and significance of outputs;
- proportion of staff engaged in impact activity (our REF2014 return included only one psychology return, alongside one from colleagues in biology);
- investment in our laboratories and specialist equipment (£248.5k);
- external research income generation (£131.7k, compared to £94.6k in REF2014); and
- external funding awarded to staff during this period (£439.5k).

We have continued to support and invest in impact but with more focus: mapped against the University's priority research themes, our case studies relate to **'Health and Wellbeing'** and **'Culture and Society'**. Importantly, our activities have initiated a culture shift to embed impact throughout more research, which will lead to an increase in impact through the next REF period.

We have significantly increased our PGR community to 14 MPhil/PhD students, which will considerably increase completion rates for the next REF period. In addition, 18 students have graduated from our newly-introduced MRes course which is already acting as a feeder course into doctoral study.

Current research and impact strategy

Following REF2014, we implemented a new School-wide **research** strategy, which aimed to:

- Grow research-active staff numbers through strategic new appointments and developing both staff capacity and the research environment. For staff wishing to reignite their research portfolio, we facilitated collaborations with senior researchers and introduced a mentorship scheme. We detail our success against this objective in Section 2.
- Build on existing strengths by strategically allocating resources to develop staff members' project completion track-record. Allocation of internal research funding rewarded expected output quality over quantity. Section 3 details how our resource allocation strategy helped us to achieve this aim.
- Monitor and support research growth through annual staff research plan submissions, informed by mentorship conversations, evaluated by senior research staff, and integrated into personal development and workload planning processes. Introduced in 2015, we continue to see 100% engagement for REF-eligible staff (see Section 2).
- Encourage collaboration with external HEIs and partner organisations, supported by a dedicated internal funding scheme for pump-priming work to support external grant applications. We have seen a marked increase in external collaboration and network building since REF2014, detailed in Section 4.
- Develop the broader research culture through maintained PGR activity, and increased outreach and public engagement. We have exceeded our targets by growing PGR numbers (see Section 2) alongside extensive growth of outreach and engagement activities (see Section 4).

Alongside this, our **impact** strategy aimed to:

- Expand the reach of our stakeholder networks: following the introduction of dedicated pump-priming funding schemes and a programme of staff development events, our achievement against this target has strengthened our impact activity (see Section 4) and external grant success (Section 3).
- Create opportunities for non-academic dissemination, for example through public lectures and social media. Supported by our institutional Corporate Communications department, we have welcomed a total audience of over 1,000 people to our public lectures and have very active twitter, Facebook, and Instagram accounts.
- Expand our approach to user engagement: whilst we have achieved this in some areas, expansion across all areas of research remains a priority (see Section 4).
- Raise awareness and understanding about impact through staff development events and explicit discussion in personal development planning reviews. We began these initiatives in 2016, and staff are now more knowledgeable about planning for research impact.
- Increase investment into impact activity through dedicated funding streams and facilitating impact-specific mentorship. These have been in place since 2016 (see Section 3) and have directly facilitated resource allocation to our returned impact case studies.

Unit-level environment template (REF5b)

Achievements against this strategy are best demonstrated by our quantity of impact: although we return two impact case studies, a third was developed and not returned, and impact has been embedded across broader School research. Our two case studies are selected as best demonstrations of the breadth of our impact, including national and international impact, on both applied practice and policy. These exemplify key aspects of our broader strategy, including stakeholder partnership and user-engagement, and have benefited from the initiatives introduced to support impact activity, including support through the research planning process and allocation of QR funding. Our successful approach to supporting impact will be refined and expanded as we move into our next strategy period.

Each of these strategic goals complements the University's research strategy (see REF5a), and our local achievements have contributed to success at institutional level.

Changes in staffing

Two leading (**Boulton, Roberts**) and two developing researchers (**Clucas, Debowska**) have left Chester during this REF period. We committed in REF2014 to capacity-building initiatives; many of those identified as future returns (**Kirkham, Murray, O'Neil, Swash, Yilmaz**) have been fulfilled. Much of our growth in research capacity, however, resulted from strategic new staffing appointments since 2014 (**Birney, Evans, Gordon, Hochard, Holt, Mattison, Oakley**); each joined us with existing research profiles and development plans. The appointment of **Oakley** is particularly noteworthy as it ensured continued leadership in our Family, Infant and Child Psychology research group following **Boulton's** departure, and the development of **Murray** fills a gap in our animal behaviour research left by **Roberts**. We have been joined by a staff transfer from elsewhere in the Institution (**Lafferty**), to expand our portfolio of research to include sport and exercise psychology, and the appointment of a Leading Research Fellow to the University Institute of Policing (**Wilkinson**). We have seen sustained growth of contract research positions funded by both internal and external grants; one is included in our return (**Leslie**).

Strategic research management

The **School Research Management Group**, comprising all Professors and Associate Professors, meets at least twice per term. These staff have strategic positions on University-wide committees (see Section 2) to ensure that School strategy aligns with wider institutional goals. This group is responsible for advising the Director of School on allocation of QR Research Funding, as part of the **Research Funding Advisory Group**.

Achievements across research themes

Research in Psychology falls predominantly under two University Research priority areas – '**Health and Wellbeing**' and '**Culture and Society**' – though we also have emerging research interests complementing the '**Sustainability and Environment**' theme. Two of our research groups have been recognised as meeting University criteria for 'unit' and 'centre' status.

Activity was restructured following REF2014 to focus on areas of existing excellence. Each research theme meets regularly, making use of online platforms to build a supportive research culture across the School, including those with significant responsibility for research, more teaching-focused colleagues, and PGR students to ensure capacity building and inclusivity.

We encourage collaboration to work towards greater cross- and inter-disciplinarity and for this reason some staff belong to multiple themes. For example, staff have common interests in **mental health** and **cancer and end of life care** which span both the Centre for Contextual Behavioural Science and Chester Research Unit for the Psychology of Health, and there is close overlap in methodology and topic interest between our Forensic and Investigative, Experimental, and Family, and Infant and Child Research Groups. Staff collaborate across our Faculty of Social Sciences, and with researchers in our Faculties of Arts and Humanities, Health and Social Care, and Medicine, Dentistry and Life Sciences

Chester Research Unit for the Psychology of Health (CRUPH)

Unit-level environment template (REF5b)

Established in 2014, and currently directed by **Lafferty**, CRUPH has clusters of expertise in health psychology (**Bramwell, Clucas, Swash**), mental health research (**Evans, Stewart**), and sport and exercise psychology (**Lafferty**). CRUPH supports three PGR students investigating stress in junior athletes, risky sexual behaviours, and improving sedentary behaviours. A number of other Psychology staff (**Carroll, Lasikiewicz, Scudds, Whelen**) attend CRUPH meetings in preparation to transition back to research-active portfolios.

Lafferty's leading work on developing interventions to reduce the negative harms associated with hazing activities in sports teams (the CHANGES intervention) is one of our core areas of impact and forms a submitted impact case study. Research activity in CRUPH has been supported by internal QR grants totalling £42.5k over this assessment period.

Contextual Behavioural Science

The Centre for Contextual Behavioural Science (CCBS), co-directed by **L Hulbert-Williams** and **N Hulbert-Williams**, is one of the largest Contextual Behavioural Science research groups in the UK. Membership includes **Hochard, Leslie, Swash**, and a number of other junior researchers funded by specific projects. Their research focuses on: (i) measurement of wellbeing, self-authenticity, and stigma; (ii) experimental intervention component testing; and (iii) development and trialling of psychological interventions in suicide and self-harm, eating disorders, cancer survivorship, and end of life care.

N Hulbert-Williams' innovative work applying Acceptance and Commitment Therapy (ACT)-based intervention frameworks in cancer care led to a significant programme of implementation work which is being nurtured into an impact case study for the next REF period (see Section 4). The Centre is home to five PhD students and was awarded two substantial external funding grants which will generate over £280k income over the next three years. This supplements £71.2k in internal QR funding awards for research and impact projects, and a growing number of internationally collaborative research projects.

Experimental & Comparative Psychology

This group has a collective interest in the application of experimental and observational research methods across diverse areas of psychology. Topics include experimental social cognition, with expertise in co-operation and punishment (**Gordon, Birney**), psycho-linguistics (**Birney, Damjanovic**), and theory of mind and moral decision-making (**Stewart**). **Murray and Roberts'** work focuses on comparative psychology and animal behaviour. **Rodway** and **Schepman** collaborate on research in: attitudes towards Artificial Intelligence; laterality and hemispheric specialisation of emotions; the application of computational linguistics to aesthetics; and, the effect of spatial position on choices and decisions.

Other staff with a primary focus on teaching and management (**Cousins, Lasikiewicz, Scudds**) collaborate with this group, supporting six PGR students. We also include outputs from one member of staff on long-term sabbatical at the University of York (**McGarrigle**). Our experimental and comparative psychology research has been supported by £32.9k of internal research grants and is one of our key priority areas for developing future impact.

Family, Infant & Child Psychology

Staff expertise focuses on play- and drawing-based activities in children (**Kirkham**), child abuse as linked to faith and belief (**Oakley**), developmental disabilities (**O'Neill**), and cross-cultural developmental psychology (**Yilmaz**). The group includes other staff from the School (**Bramwell**), one PhD student, and a research-active Emeritus Professor (**Boulton**).

Over this assessment period, these researchers have been awarded £33.8k in external contract research, supplementing £21.6k of competitive internal QR funding. Amongst other important stakeholder engagement roles, **Oakley** is Chair of the *National Working Group for Child Abuse Linked to Faith or Belief*, and is developing a programme of impact work that will be returned to the next REF (see section 4).

Forensic & Investigative Psychology

The size of this research group is representative of our reputation for teaching excellence in this area. **Mattison** has an extensive portfolio of work on the treatment of vulnerable people in the criminal justice system, with complementary developing track records in jury decision-making and false confessions (**Holt**), and deception detection and investigative interviewing (**Wright**). Four additional Psychology staff collaborate with this group (**Bramwell, Hardy, Oakley, Phillips**), which also benefits from collaboration with our University Institute of Policing, including **Wilkinson's** work on rehabilitation and resettlement following prison sentencing.

Mattison's work with the police and criminal court system received high media attention and informs our second impact case study. The group supports three PGR students and received £63.2k external funding from the Nuffield Foundation (generating £21.k income for Chester). £27.1k of our internal QR research and impact grants have been awarded to this group.

Research culture and community

Our research themes contribute to our monthly School seminar series (>70 during this REF period), and our public lecture programme (13 over this period). **N Hulbert-Williams** also co-ordinates an institution-wide, cross-faculty, Health Sciences Research Seminar Programme as part of our drive towards higher impact interdisciplinary research. Each research theme has a dedicated co-ordinator responsible for curating relevant training, development, and journal club meetings. We disseminate research successes to the scientific community, research and impact stakeholders, and the public through social media and in collaboration with University Corporate Communications who co-ordinate press-releases as appropriate.

Our research community actively engages with open research practices and is paving the way for the University in this regard. The University's open research working group, CORA (the Chester Open Research Alliance), was founded by **Stewart** in 2018. Through CORA, staff have received training opportunities in open research practices such as open data, preregistration, and registered reports. CORA members receive regular newsletters about development opportunities, resources, and other open research communities. Networking opportunities are provided through the ReproducibiliTea journal club and the R Users Group. CORA belongs to the UK Reproducibility Network, for which **Stewart** is Chester representative, and to the NorthWest Hub of Open Research Working Groups. Several researchers, particularly from the Centre for Contextual Behavioural Sciences and Experimental and Comparative Psychology Research Group, are executing replication studies, including through membership of the Psychological Science Accelerator. Pre-registration (for example, on the Open Science Framework) is encouraged, and our clinical trial protocols are publicly registered. Researchers are supported in meeting open data requirements through our core ethics process, whereby plans for data sharing are formalised from the outset. All suitable outputs are deposited in our institutional repository, and we have observed an increase in the number of 'gold-route' open access publications through this REF period.

Future strategy

Our combined research and impact strategy for the next REF period emphasises quality, inclusivity, and externality. Increased external engagement is central to the University Research Strategy, and we will focus on research that is designed, executed, and disseminated in partnership with appropriate external stakeholders to genuinely meet societal needs. We will pro-actively support research that is inclusive of all parts of society, especially the vulnerable and marginalised.

We recognise the value of interdisciplinarity, and that excellent research can be rooted in a range of epistemologies. We will continue to support and encourage staff to engage in a wide range of research activity—not only that deemed REF-returnable—where this enhances other aspects of School and University research, knowledge exchange, teaching, and student experience strategies.

Unit-level environment template (REF5b)

Consistent with our commitment to inclusivity, we will pro-actively promote staff equality of opportunity to engage in research, and audit our resultant achievements. In line with broader University targets, we will strategically encourage collaboration with other departments and interdisciplinary research. We will maintain a vibrant and high-quality training environment for PGR students. We will continue to value quality over quantity, and align our activity with the four priority research areas identified at institutional level. All of our research will continue to align with and inform our teaching and student experience strategies.

Openness and externality are central to our vision; this includes a commitment to open science practices which are expected in all research activity and required in all resourcing requests. Open Science presents challenges in sensitive and qualitative research, and we are already engaging with developing practice in these areas. All research activity and publications will adhere to the University Open Science Policy.

Our vision is that excellent research has potential for impact embedded from the outset. We will support greater diversity and reach of impact through training, mentorship, and targeted funding. As funding for new research will be dependent on documentation of impact activity, we will be able to continually monitor the stages of impact development.

Specific implementation targets and activities include:

- Recruitment of new staff with existing track-records and activity in collaborative research, as appropriate to their role.
- Continuing use of individual research plans, supported by mentors, and annually reviewed by senior researchers. These will be linked to personal development planning meetings with line managers to inform resource allocation and strategic planning.
 - Stratified staff support appropriate to career stage and trajectory, including:
 - A range of QR funding schemes relevant to different career stages, strategically reviewed annually, with outcomes regularly audited for effectiveness and equality impact;
 - A mentorship scheme which has been refined over recent years, and which includes provision for internal and external mentorship;
 - A vibrant and responsive programme of staff development events, relevant to different career stages and informed by staff need;
 - Support of strategic collaboration between colleagues at different stages in their research careers and from different disciplinary areas; and,
 - A strategically-informed approach to building impact across the University through ongoing cross-faculty collaboration.

Whilst some targets will be addressed at School-level, others will be supported by our existing Research Centres, Units and Groups, in addition to improved cross-faculty liaison. Our School Research Management Group will continue to have oversight of strategy implementation, supported by the School Management Team.

Successful implementation over the next five-year cycle will meet our goals to increase engagement with external partners, external funding, and published interdisciplinary research. Our staffing profile will continue to include staff at different stages in their research careers but with an increased proportion of leading researchers.

2. People

Across both Exton Park (in Chester) and University Centre Shrewsbury, our School currently (December 2020) numbers 40 academic staff (32.8FTE). Of these, 57% (18.8FTE) are identified as having significant responsibility for research and are included in our REF return, along with one extra member of staff (1.0FTE) from the Institute of Policing (Total UoA return = 19.8FTE). This represents a 48% increase in FTE returned to UoA4 compared to REF2014. Whilst some academic staff are more teaching-focused, all staff are actively engaged in the inclusive research life of the School. All attend research seminars, and many support the research of others through, for instance, their work on the School Research Ethics Committee and membership of our research groups and centres.

Since REF2014, two staff have been promoted to Associate Professor (**Mattison, Oakley**) and two to Professor (**N Hulbert-Williams, Lafferty**), demonstrating our commitment to career progression opportunities for research and impact active staff.

Staffing strategy

Since REF2014, the School has made a high number of new staffing appointments, and we have ensured that those appointed are at the very least research-engaged, and in the vast majority of cases research-active. All new staff appointed have complemented our research themes (including replacement leadership for departing staff; see Section 1). We appoint an increasing proportion of PhD qualified staff, and attract increasingly more staff from research-intensive institutions (e.g. Cambridge, Exeter, Keele, King's College London, Nottingham), including non-UK institutions (e.g. Tasmania, Vanderbilt) which is testament to our improving international research profile.

The number of research-only contract staff has increased during this REF period as a result of improved funding successes. Whilst some of those staff were external appointments, many are filled by current PGR students, enhancing development opportunities for our PGR community.

Staff development and support

The University is strongly committed to staff development, as detailed in our Institutional Environment Template. A number of Psychology staff have facilitated sessions at the annual University Research Festival which hosts both generic and subject-specific events for staff at all career stages. Training in PGR supervision is provided at University-level, and all staff attend an update every three years to maintain good practice. Cognisant with our School strategy, we anticipate further development and training in open science, and stakeholder and community partnership.

Staff support for research is provided for through multiple avenues. Our research themes provide networking and topic-specific development opportunities with an overarching ethos of collaboration within and (increasingly) between themes. Alongside this, we are committed to providing quality mentorship support. For the period 2014-2017, mentorship was organised through peer-mentorship groups, but this didn't prove effective. Since then, and continuing forward, one-to-one mentorship with an Associate or Full Professor has been provided for any member of staff who wishes to take advantage of this. A number of our more experienced researchers are involved with the University-wide Research Mentorship Scheme co-ordinated by the University Human Resources and Management Department, and are listed on the Register of Peer Reviewers held by the Research and Knowledge Transfer Office.

Unit-level environment template (REF5b)

Every member of staff has an annual Performance and Development Planning (PDP) review with their designated line manager, in which research and impact activities are discussed, and in which personal development to support this activity for the coming year is agreed. This is supported by the submission of annual research and impact plans, which staff complete by way of reporting and reflecting on their activity over the prior year, and setting personal targets for achievement in the next year. Research plans are used as a reflective tool (for prioritisation, overcoming challenges and barriers) as much as they are used as a reporting tool. Information collected in research plans and PDPs is used to identify training needs which are then funded at either School or Faculty level where possible. This has included externally commissioned training in NVivo, Social Network Analysis using UCINET, Statistical Analysis using R, and Open Science in Qualitative Research. Additional QR-funded grant schemes (see Section 3) have enabled staff to attend conferences, study visits and training events specific to their own area of expertise. Staff can apply for short periods of research leave for specific purposes, including data collection, grant-preparation meetings, and dissemination activity.

Staff included in this REF return contribute significant time and energy to University-level initiatives to support strategy and delivery of research and impact, including: **Faculty Research Group** (Bramwell, N Hulbert-Williams, Wilkinson), **HR Excellence in Research Award Steering Group** (L Hulbert-Williams), **Postgraduate Research Sub-Committee** (Mattison), **Research Festival Planning Committee** (L Hulbert-Williams), **Research Integrity Group** (Hochard, Lafferty, Wilkinson), **Research Strategy task-and-finish group** (Bramwell, N Hulbert-Williams), the **Technician's Commitment Action Plan Group** (Bramwell), **University REF2021 Steering Group** (Bramwell), **University Research Ethics Board** (Hochard, Lafferty), and **University Research and Knowledge Transfer Committee** (N Hulbert-Williams).

Equality and Diversity

Institution-wide, we have an inclusive approach to working hours whereby staff can request flexible working, and consideration is particularly given to those with protected characteristics or caring responsibilities, for example. This has benefited staff with significant responsibility for research in Psychology. We operate an equitable approach to research support whereby all activities—mentorship, research planning processes etc.—are open to all staff, including those without significant responsibility for research, and regardless of individual circumstances.

Our long-established University Diversity Festival is available to all staff and students, and many staff have contributed sessions, for example on combatting imposter syndrome, unconscious bias, and as part of the 'making (associate) professor' series of talks. **Lafferty** recently published a book chapter supporting career progression for female academics (see Section 4).

The School has a dedicated Equality and Diversity Working Group which led our successful application for Athena SWAN Bronze award in 2017. Pursuant with our resulting action plan, we have worked to address gender equality issues at School level. Accomplishments include a formal "Women in Academia" champion, the training of four dignity and respect advisers within the School, and an annual staff career development day. We continue to have a staff profile that includes a high proportion who identify as female, and we recognise that this may take time to address. At the end of 2021, we will apply to renew our award to further progress our key actions, such as addressing the leaky pipeline into research-oriented careers for both PGR and academic staff communities. We are limited in the ethnic diversity of our returned staff, though this is consistent and proportional to both wider School and University profiles.

Equality and diversity commitments are directly demonstrated in our research projects on LGB issues in health care (**N Hulbert-Williams**) and faith or religious groups (**Oakley, Wilkinson**). Two PGR students (co-supervised by **Evans, L Hulbert-Williams, N Hulbert-Williams, Mattison**) investigate stigma and equality issues in the LGB population. **Mattison's** case study directly relates to support for vulnerable, minority group individuals.

Of staff returned, research activity has been limited by a range of mitigating factors, reducing our total output pool by 7 outputs (14% reduction). An equality impact audit (at both University and UoA level) has been undertaken by our University HR team. We are proud of our inclusive approach that allows these staff to maintain research active portfolios.

Attracting and supporting excellent postgraduate students

Our PGR growth has been steady and sustainable. Though our completion rate appears lower than REF2014 (5.45 vs. 10.45), most current students are part-time registrants and so will not complete until early in the next assessment period. We currently have 14 students registered on the MPhil/PhD programme, representing a substantial increase from the six registered at the time of the REF2014 submission. During this assessment period, 100% of our students have completed on time (i.e. within 10-year registration period); average completion times for full-time students improved from 5 to 4 years, but those for part-time students increased from 6.7 to 7.7 years. Maintenance of sustainable growth and supervision quality remain strategic priorities.

Five current PGR students had previously completed undergraduate psychology degrees at Chester; two then accessed the PhD via our newly introduced MRes. We have introduced two new PGT courses, from which six of our current PGR students directly progressed.

Most of our PGR students are self-funded, explaining why part-time registration is popular. One completed student received a scholarship funded by the University of Chester and the Countess of Chester NHS Foundation Trust. Five students were recruited through a new School initiative to introduce a Graduate Teaching Assistant scheme; these were in receipt of GTA salary and had their part-time PGR fees waived. We proactively seek opportunities to employ part-time PGR students as assessment markers, visiting lecturers, or contract research staff to expand employability and financially support students through their studies.

New PGR students access a standard University-wide induction and are given tailored School-level inductions by their supervisory team. During induction, students are expected to complete a skills audit underpinned by the RCUK/Vitae Researcher Development Framework; this is discussed with supervisors to ensure that training and development plans can be put in place.

Each student has a Principal Supervisor with a track-record of PGR completions, and at least one Secondary supervisor. Two PGR completions were co-supervised by staff returned to other UoAs, a trend that we expect to continue as we strategically encourage interdisciplinary research. Students meet with their Principal Supervisor for at least monthly formal supervision. PGR students access additional high-quality training and support through our research centres/ groups. PGR students are encouraged to attend research seminars and to present at both our Faculty and University-wide PGR Symposia each year. One of our PhD students won the inaugural University 'Three Minute Thesis Competition' in 2019.

PGR students complete annual progress monitoring reviews in which they self-report progress, and where supervisory teams indicate whether progress is satisfactory. These are independently reviewed by another member of staff. At two points during registration (MPhil to PhD upgrade, and a year within expected completion) this is supplemented by a progress meeting attended by the student, an independent reviewer, and an independent Chair (this number increases to 4 meetings for part-time students). Where there is concern about progress, students are engaged in an Independent Progress Assessment Panel meeting, where additional support is discussed, and targets agreed for evaluation at an additional progress meeting six months later. During this REF period, 87.5% of our PGR students progressed through upgrade on first attempt. This process is overseen by our Senior Faculty Postgraduate Tutor.

Unit-level environment template (REF5b)

PGR students have access to all School research laboratories and equipment (see Section 3) and are supported by our dedicated technicians and administration team. As part of refurbishment in 2018, a shared-access research space was created with hot-desks for PGR students and contract research staff. This provides a protected workspace whilst simultaneously ensuring a community base for PGR students, and is an effective mechanism for peer-support and mentorship from more experienced researchers. Since 2016 we have facilitated a School-level PGR student peer-support group which meets monthly and is chaired by a PGR student on a rotational basis.

Students and supervisory teams submit an annual financial projection for expected research costs for that year; these are then agreed by School management. On average over this REF period, we allocated £280 of School budget per PGR student each year. Additional financial support for research and conferences is available through a competitive grant scheme within the School. We adopted this system to build financial planning skills, and to prepare students for grant applications post-qualification.

2019 Postgraduate Research Experience Survey data showed that Psychology rated better than sector average for domain ratings of 'Supervision' (91% cf. 87%), 'Resources' (84% cf. 80%), 'Research Culture' (73% cf. 61%), 'Skills Development' (89% cf. 86%), 'Professional Development' (89% cf. 78%) and 'Overall Satisfaction' (90% cf. 80%).

Our PGR students have an excellent record of post-doctoral destinations. Two completions from this assessment period were appointed to postdoctoral posts at research-intensive universities (Warwick, Cambridge), and one has an academic post at Liverpool John Moores University. Three were staff members at Chester and they retained their positions following completion.

3. Income, infrastructure and facilities

Income generation

The School has seen considerable growth in external funding success, leading to a steady increase in income generation (REF2021: £131.7k cf. REF2014: £94.6k). This data doesn't quite tell the full picture, however, as a number of awards for multi-year projects will not be fully realised until the next REF period. This includes awards from **Macmillan Cancer Support** (N Hulbert-Williams, Swash; £32.2k), **North West Cancer Research** (N Hulbert-Williams, L Hulbert-Williams; £294.6k) and the **British Academy** (Damjanovic; £8.2k). A small amount was generated through collaboration with the University of Stirling on a £204k grant from the **Scottish Government Chief Scientist Office** (N Hulbert-Williams), and we received £21.7k as part of £63.2k award from **The Nuffield Foundation** (Mattison).

£34k in contract research contracts have been award from the **United Reformed Church** and **Thirtyone:eight** (Oakley), and we received a charitable donation of £2k from **Cancer: A Need for Change** (N Hulbert-Williams). Our researchers collaborate in non-costed roles on work funded by **Marie Curie UK** (N Hulbert-Williams, Swash), the **NIHR Imperial Biomedical Research Centre** (N Hulbert-Williams), and **South Australian Cancer Council's 'Beat Cancer' programme** (N Hulbert-Williams).

The pool of staff applying for external funding has been deliberately limited to those with an existing track-record in order to balance time investment against success likelihood. One of our key priorities moving forward is to increase the number of applications submitted by those staff who have an appropriate track-record, particularly those which move us towards a higher proportion of full-economic costed awards.

Internal funding

Throughout this REF period we have supported research and impact activity through £207k of competitively allocated QR funds. Allocation is approved by a School Funding Advisory Group which includes staff of different genders and at different career stages; this provides diverse perspectives to promote fair and equitable approaches to allocating funding and research infrastructure. A key aspect of our Athena Swan action plan is continued auditing of equality impact in resource allocation.

In addition to the £13.7k allocated for core research staffing to support data collection and output production, these grants have been allocated as follows:

- £127.1k on new research grants
- £30.7k on grants to support impact activity
- £24.4k on 'booster' grants to increase quality of existing projects (e.g. additional data collection)
- £13.1k on grants to pump-prime future work (e.g. external networks, funding applications etc.)
- £11.6k on conference grants

The total investment is similar to that reported in REF2014 (£214.7k), however, that previous figure included allocations to Biological Sciences in addition to Psychology. Given that the value of QR awards to institutions is now less than the previous REF period, in real terms this represents an *increased* institutional investment to psychology research and impact. In line with our capacity building strategy, these grant schemes are open to all School staff, not just those with significant responsibility for research.

Infrastructure investment and facilities

We have doubled the number of dedicated research laboratories since REF2014. On our Exton Park site, this includes 16 small laboratories, one larger laboratory with separate testing booths for computer-based experimental procedures, three interview rooms, two observation suites and a 'black-out' room to create an immersive experimental environment. At our smaller Shrewsbury site, we have three laboratories. We continue to provide smaller personal office space for externally funded research staff.

We have invested over £160k on specialist research equipment including: £5k on a Digitimer electro-shock generator and £6.5k on cold pressor equipment for pain tolerance research; £7k on GeneActiv watches to monitor psychophysiological sleep and activity research; £12.5k on a Dynavision board to support our sport and exercise psychology research; £39k on upgraded and additional Biopac equipment; and £66k on state-of-the-art eye tracking equipment. Our laboratories and specialist equipment are available to all staff and managed by a dedicated technician team including staff at both Exton Park and Shrewsbury sites.

A £68k investment in new computers, laptops, tablet computers, and other audio-visual equipment to support data collection in laboratories or in the field has been made by the School; this is in addition to laptop computers available for loan through the University library. A considerable portion of this spend enabled the purchase of high-specification videography equipment as part of our ongoing strategy to convert our professional training programmes (which form the basis of our impact) into online, more accessible, training resources.

Our computers give access to an extensive suite of IT software including E Prime, Express Scribe, FaceGen, Formic, JISC Online Surveys, NVivo, and SPSS. Over the past five years we spent £14k on additional software (including Qualtrics and Superlab5) to allow our researchers to undertake more sophisticated experimental- and survey-based projects. Training has been provided to staff in using alternative statistical software such as JASP, Jamovi and R.

Unit-level environment template (REF5b)

As much of our research involves the testing of human participants, we have invested significantly in participant incentivisation. Since 2012 we have spent over £7k on the SONA research participation system to provide a simple route to recruit psychology students as research participants. Since 2016, we have spent £27k (from QR funding and central School budgets) on shopping vouchers, cash payments, and 'credits' for research participation websites (e.g. MTurk, Prolific Academic).

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

A strong theme within our University mission is for all activity to be in the service of our local and global communities. This mission feeds into our strategy for collaboration, partnership, and engagement within both our academic discipline and wider society.

Academic collaborations and stakeholder partnerships

Our research strategy encourages external collaboration, and we have seen progress in this regard. Our staff are, or have been, collaborating with research-intensive universities in the UK (Bangor, Bristol, Brunel, Cambridge, City London, Dundee, East London, Edinburgh, Exeter, Imperial College London, Keele, King's College London, Lancaster, Liverpool, Manchester, Nottingham, Oxford, Queen's Belfast, St Andrews, Sussex, University College London), Europe (Eindhoven University of Technology, Jyväskylä, Max Planck Institute for Evolutionary Anthropology, Oslo, VU Amsterdam), the Americas (McGill, Mississippi, Rio de Janeiro, Veracruzana, Washington), Asia (Kyoto), and Australia (Australian National University, Flinders, Queensland, Sydney). Many of these collaborations resulted from staff presenting invited research seminars or having undertaken invited study visits throughout this assessment period. We will continue to support this activity, especially where it promotes interdisciplinarity and opportunities for impact.

Our research and impact strategy also rests on successful collaboration and engagement with our growing network of stakeholder partnerships, through which we have developed new research and concrete pathways to impact. We report on these as grouped by themes within our new University Research Strategy:

Culture & Society

Mattison has an extensive network of research and knowledge transfer partnerships including Cheshire Constabulary, and the Greater Manchester, Metropolitan, Staffordshire, and West Yorkshire Police Forces. This is in addition to collaboration with policy-level bodies, such as the Advocacy Training Council, Court of Protection, Department of Justice (Northern Ireland), Independent Police Complaints Commission, Ministry of Justice, National Crime Agency, and, in Australia, the Department of Justice and Office for the Department of Public Prosecutions in New South Wales. These partnerships have directly supported activity reported in **Mattison's** submitted impact case study.

Complementing this, and within the Cheshire Constabulary, **Bramwell** is member of the Diversity, Equality and Inclusion Board, and **Wilkinson** is Academic Representative for the Evidence-Based Policing Board; **Murray** has acted as an animal behaviour expert witness within the legal system; **Oakley** works closely with the harmful practices team at the Metropolitan Police and has also served as an expert witness for the Metropolitan and West Midlands Police Forces; and, **Wilkinson** works closely with both Birmingham and Cheshire Youth Offender Services. These partnerships are supporting current research projects, including those undertaken by PGR students.

Oakley is Chair of the BME-Migrant Advisory Group, and member of the National Working Group for Child Abuse Linked to Faith or Belief, All-Party Parliamentary Group for Safeguarding in Faith Communities, and National FGM Advisory Board. She has led programmes of work on engagement of the LGB community within the Baptist Union, and is an invited contributor to expert events on witchcraft for the United Nations in Geneva. In 2020, **Oakley** participated in the Independent Inquiry into Child Sexual Abuse giving evidence to the child protection in religious organisations and settings stream. **Oakley** and **Yilmaz** are collaborating on research with Motherwell women's charity in Cheshire. The body of work emerging from these partnerships will likely inform a case study for a future REF-return based on **Oakley's** underpinning research.

Health & Wellbeing

We have a firm collaboration base with a number of regional NHS Trusts including Aintree, Blackpool, Countess of Chester, and Pennine Care NHS Foundation Trusts, Betsi Cadwaladr University Health Board in North Wales, and the Clatterbridge Cancer Centre. These have been integral in enabling staff in the Centre for CBS to progress from early-phase development research to multi-centre clinical trials. **Carroll** and **O'Neil** collaborated with the NeuroMuscular Centre in Cheshire.

In their programme of cancer and end of life research, **N Hulbert-Williams** and **Swash** work closely with a large network of independent hospices and charities in the UK (e.g. Marie Curie, Maggie's Cancer Centres) and overseas (e.g. Canteen, in Australia). **N Hulbert-Williams** was a member of the North West LGBT Cancer Support Alliance which aimed to improve equality and diversity practices within regional cancer services, and maintains a role on the Research Advisory Group for Maggie's Centres UK; both he and **Swash** have held various positions within the UK National Cancer Research Institute network of clinical studies groups.

Lafferty continues to work with British Dressage and the British Equestrian Foundation, and through this assessment period, she has developed a partnership with Universities UK in developing strategies to tackle risky initiations in student societies; this relates directly to the success of the CHANGES intervention programme, forming the basis of **Lafferty's** impact case study.

Sustainability & Environment

Murray's animal behaviour research builds on well-established links with Chester Zoo, the Department of Environment, Food and Rural Affairs (DEFRA), and the Zoological Society of London to support our work.

Contribution to economy and society

Across all of our research and impact activity we involve those most likely to benefit from our work. For example, we have developed an extensive regional group of cancer survivors, informal caregivers, and healthcare professionals who work in partnership with us across a number of our cancer-related research projects. Our strategy of including patients and stakeholders in research development meetings and funded study steering groups was commended by reviewers in our successful Macmillan Cancer Support and North West Cancer Research funding awards. We have similar networks within local schools for developmental and educational psychology research, and we draw upon all of the organisations listed in the previous section for broader stakeholder involvement across the full range of our research portfolio.

Our submitted impact case studies summarise our two best examples of contribution outside of the discipline. Aside from those, however, we are developing other programmes of impact work which demonstrate our contribution to society and (to a lesser extent) the economy:

In **educational settings**, our School played a key role in the Hummingbird Project (local lead: **Tytherleigh**), a collaboration with Cheshire West and Chester Council to deliver positive psychology interventions to boost mental health in schools; to date, this has been delivered to 978 regional school pupils.

In **faith settings**, **Oakley's** research was presented as part of the call for evidence for the first inquiry of the All Party Parliamentary Group for safeguarding in faith communities, and the Independent Inquiry into Child Sexual Abuse. This has informed resources developed for the National FGM Centre website, and four animated films currently being developed as freely available resources to frontline practitioners and faith communities, one of which will be used as part of an international project tackling witchcraft-related violence. **Oakley's** research into safeguarding has been embedded into core training resources for Thirtyone:eight, the leading independent Christian safeguarding charity in the UK, and is currently being embedded into core national policy for the Church of England.

In the **healthcare setting**, **N Hulbert-Williams** and **L Hulbert-Williams** developed an Acceptance and Commitment Therapy (ACT) Enhanced Communication Skills training programme which has been delivered to over 350 health and social care professionals in charitable and state-funded cancer care settings in the UK (Maggie's Cancer Centres, St George's NHS Foundation Trust), Australia (Cancer Council Queensland; the Canteen cancer support charity; the Peter Mac Cancer Centre, Melbourne; and Sydney Children's Hospital) and Canada (CancerCare, Manitoba; Cancer Control Alberta; McGill University Health Centre, Montreal). 73% of trainees rated this course as having relevance to their work and, at three-month follow-up, 46% agreed that they were better placed to provide improved clinical services. This work has led to lasting changes in training, supervision, and service provision. For example, Canteen now integrates ACT into many of their support programmes for young people affected by cancer, and our training model at Maggie's ensured sustainable culture change was achieved across the organisation. At St George's, we worked with local teams to embed the training into core Level 2 Communication Skills Training which is offered to all staff working across oncology care in the Trust, and this forms a good framework to build on for wider implementation.

Academic citizenship and contribution to the research base

Staff in Psychology have held a number of influential committee positions. Within the British Psychological Society (BPS), **L Hulbert-Williams** is Vice-Chair (for Research) for the Division of Academics, Researchers, and Teachers in Psychology, and **Lafferty** is part of the Membership Advisory Group and holds the post of Chief Supervisor/Registrar for the Qualification in Sport and Exercise Psychology. **Hochard** is Trustee for Chapter Mental Health Charity. **N Hulbert-Williams** recently completed a four-year term as Chair of the International Psycho-Oncology Society Research Committee; **Mattison** holds advisory positions with Cheshire Courts, working party memberships with the Crown Prosecution Service and North West Police, and is on the Management Committee for The Advocate's Gateway; **Murray** is on the Education Committee for the Association for the Study of Animal Behaviour, and the Council of the Primate Society of Great Britain; and **Swash** served on the British Psychosocial Oncology Society Executive Committee.

Our research active staff are regularly invited to give keynote presentations at national and international conferences. Recent examples include: the EMCR Forum for Suicide Research (**Hochard**); the European Oncology Nursing Society Annual Conference and the Global Adolescent and Young Adult Cancer Congress (**N Hulbert-Williams**); the BPS Supervisor Conference (**Lafferty**); the Advocates Gateway Internal Conference, the BPS Division of Forensic Psychology International Conference, International Congress of Psychology, and the New South Wales Crown Prosecutors Annual Conference (**Mattison**); a TEDx conference on the climate crisis (**Murray**); the Catholic Advisory Safeguarding Conference, the Methodist Safeguarding Conference, and the Scottish National Safeguarding Advisors Conference (**Oakley**); the International Conference on Psychology, Counselling and Education (**Wilkinson**); and, the BPS Careers Conference (**Yilmaz**).

We have hosted two conferences at Chester: (i) the 2019 British Psychosocial Oncology Society Annual Conference; and (ii) the Inaugural Chester Contextual Behavioural Science Research Colloquium in 2018 which attracted delegates from Belgium, Brazil, Ireland, Sweden, and the UK. Our staff have contributed to scientific or organising committees for the Association of Contextual Behavioural Science, the IPOS World Congress of Psycho-Oncology, the International Conference on Witchcraft and Human Rights, the Primate Society of Great Britain, and the BPS Division of Clinical Psychology.

Our staff also regularly review for leading journals and have held Editorial Board positions for the European Journal of Cancer Care (**N Hulbert-Williams**), the International Journal of Prisoner Health (**Wilkinson**), Journal of Reproductive and Infant Psychology (**Bramwell**), Journal of Zoo and Aquarium Research (**Murray**) and Psycho-Oncology (**N Hulbert-Williams**). **Birney** edited a special issue for the Journal of Language and Social Psychology, **Murray** is Editor for Primate Eye, and **N Hulbert-Williams** is Associate Editor for the Journal of Psychosocial Oncology Research and Practice.

Unit-level environment template (REF5b)

School staff regularly review grant applications for UK (British Academy, ESRC, Leverhulme, MRC, NIHR, Nuffield Foundation and Wellcome Trust), European (Cyprus Research Promotion Foundation, Irish Cancer Society, Netherlands Institute for Cancer Research, Netherlands Organisation for Scientific Research), and International (Australian National Health and Medical Research Council) funding bodies. **N Hulbert-Williams** serves on grant award committees for the Irish Cancer Society and North West Cancer Research.

Our researchers have contributed to textbooks which are significant in their respective fields. These include chapters by **N Hulbert-Williams** in *Psycho-Oncology* (2015, 2020) and the *Psycho-Oncology Companion Guide for Clinicians on Sexual Health, Fertility and Relationships* (2020); **Lafferty** in *The Positioning and Making of Female Professors* (2019) and *Applied Sport, Exercise and Performance Psychology* (2020); **Leslie** in *The Serotonin System* (2019); **Mattison** in *Addressing Vulnerability in Justice Systems* (2016) and *Vulnerable People and the Criminal Justice System* (2017); **Oakley** in *Working Safely in Spiritual Accompaniment* (2015), *Domestic Violence* (2016), and *Safeguarding across the Life Span* (2020); and **Wilkinson** in *Abnormal and Clinical Psychology* (2014). **Oakley** is co-author of *Escaping the Maze of Spiritual Abuse* (2019), **Wilkinson** is co-author of *Forensic Psychology (Psychology Express Series)* (2014) and **N Hulbert-Williams** co-edited *Cancer and Cancer Care* (2015), an interdisciplinary textbook which includes chapters also (co-)authored by both **L Hulbert-Williams** and **Swash**.

Our staff have been recognised for their contributions to research and society through prizes and award nominations. **N Hulbert-Williams** was nominated for the IPOS Hiroomi Kawano New Investigator Award (2015); **Kirkham, Rodway** and **Schepman** were awarded a prize for their contribution to the 2017 Visual Science of Art Conference; **Lafferty** was nominated for the Educate North Awards twice (2015 and 2019); **Leslie** was nominated for the Tadion-Radeal Prize for Molecular Science (2020); and **Mattison** has received nominations for the Education North Awards (2018) and the Times Higher Education International Collaboration of the Year Award (2017).