Institution: Exeter

Unit of Assessment: 04 Psychology, Psychiatry and Neuroscience

Section 1.
Overview
Psychology at Exeter is one of four disciplines in the College of Life and Environmental Sciences (CLES), alongside Biosciences, Geography, and Sports & Health Sciences. Psychology has four major research groups: (i) **Animal Behaviour**, (ii) **Cognition**, (iii) **Clinical**, and (iv) **Social, Environmental,** and **Organisational Psychology**.

Our mission is *"to provide world-leading psychology research and teaching, underpinned by robust methods, high quality facilities, and strategic partnerships, to improve our understanding of mind and behaviour across the lifespan and across species, and to influence health and well-being across all social groups".*

Key achievements during the REF period include:
- securing new awards exceeding £26.75M, almost trebling the awards notified in REF2014 (£9.48M);
- publishing 1045 journal papers, cited over 17.3k times, including over 20% of outputs in the top-10 most cited papers and a mean Field Citation Ratio of 8.1;
- awarding 200 doctoral degrees, with 137 students currently enrolled;
- receiving an Athena Swan Silver award in 2016, with reaccreditation in 2020;
- changing mental health policy locally, nationally, and internationally, including contributions to NICE guidelines on dementia, antenatal and postnatal mental health, and depression in adults;
- leading an All-Party Parliamentary Group on Criminal Justice and Acquired Brain Injury;
- impacting equality, diversity, and inclusivity policies nationally through work with the Government Equalities Office, the Equality Challenge Unit, and the Behavioural Insights Team;
- making three patent applications from findings related to how medicines interact with psychological therapies;
- being a keystone in interdisciplinary collaborations, including involvement in flagship university initiatives such as the Institute for Data Science and Artificial Intelligence, (IDSAI) and the Wellcome Centre for Cultures and Environments of Health (WCEHH), with active collaborations with 19 of the 26 units of assessment at Exeter, and;
- sustaining and further developing collaborations with world-leading institutions, and being recognised as one of the top 100 psychology departments in the world (QS World University Rankings).

1. Research and Impact Strategic Aims
Our aim is to be a UK top 10 research department through (i) recruiting and retaining world-class researchers; (ii) diversifying our research expertise; (iii) boosting our impact via translational science and engaged research; and (iv) enhancing interdisciplinary working.

(i) **Recruiting and retaining world-class researchers:** Our strategy over the REF period has been to recruit outstanding researchers at all career stages and provide a world-class and vibrant research environment that allows them to thrive. During the REF period, we made 16 new Education & Research (E&R) appointments; 3 Professors (P), 3 Senior Lecturers (SL), 12 Lecturers(L). The unit has grown from 35 E&R staff in REF2014 (34 FTE) to 49 E&R staff in REF2021 (46.3 FTE). We have sought to attract and retain staff with independent research fellowships: four of our new appointments were independent fellows (one recruited at L-level is now SL, while another is now AP). 20% of our Category A staff are Early Career Researchers (ECRs), providing a stimulating mix of both junior and senior colleagues. Following an external review in 2018, we made strategic appointments in developmental psychology to grow this area, including at professorial level. We also made four strategic Education & Scholarship

appointments to cover education-facing leadership roles, allowing E&R staff to focus more on research and research training. We have minimal turnover, testifying to the quality of our research environment: only 6 E&R staff left the unit since 2014 (plus 2 retirements).

(ii) **Diversifying our research expertise:** Our new appointments are across all four research groups to complement existing strengths (see below) and open new lines of research. Our group-based structure has helped us grow and consolidate our reputation both nationally and internationally. Each group contributes to research outcomes in terms of income, outputs, impact, and PGR training, and is internationally recognised as a centre of excellence. Our strategy over the assessment period has been to recruit outstanding researchers who are able to work both within and across these groups, thereby avoiding research islands and sustaining critical mass. We have focused on developing discipline-level research themes, allowing us to adapt to funder priorities as well as institutional initiatives. These appointments have brought new methods and techniques (e.g., evolutionary mathematical modelling, genetics, endocrinology, cross-cultural approaches, neurostimulation combined with online neuroimaging, dyadic analysis).

We have identified key strengths that cut across our research groups and centres that will shape our growth and strategic development over the next 5 years (see Fig. 1). Our research themes are (i) *understanding brain and behaviour change across the lifespan* (integrating work on developmental effects in the early years on mood disorders, cognitive control and associative learning, behaviour and cognition in older age, as well as work on senescence in other species), (ii) *understanding social determinants of health and well-being* (integrating work on social identity, mood disorders, behaviour change, environmental behaviour, computational social science, and social networks in humans and non-humans), and (iii) *treatment innovation in mental health and addiction* (integrating work on cognitive control and impulsive behaviour with neuropsychology and neuropsychopharmacology and linking to the Medical School and local NHS trusts)*.*
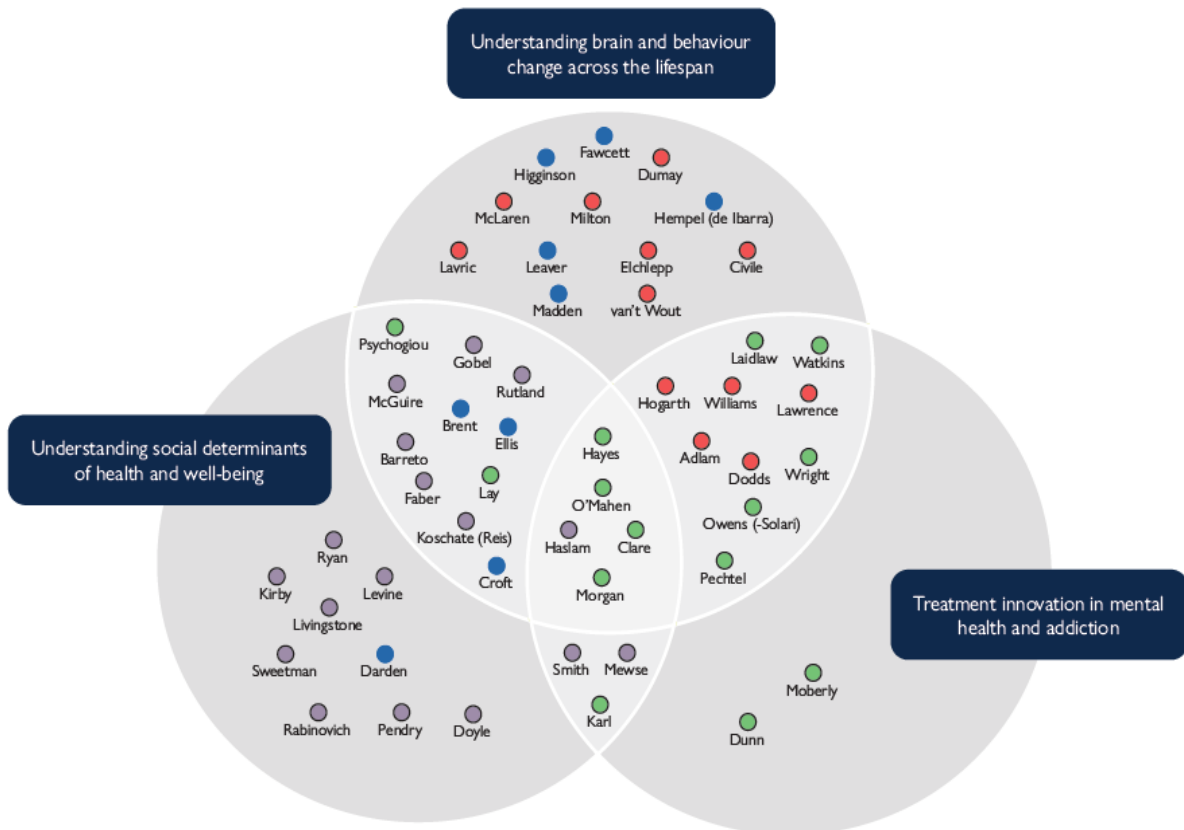

Fig. 1. Network of researchers, research groups (AB = ●, Clinical = ●; Cognition = ●; SEORG = ●), and cross-cutting research themes.

(iii) **Boosting our impact via translational science and engaged research**: We have intensified our focus on applying our discovery-led science to deliver non-academic impact, and on further developing our collaborations and partnerships to enrich our research and enhance our reputation for delivering transformational benefits to society. We have embedded impact into our leadership structure through the appointment of a **Director of Impact** (DoI). The role of the DoI is to promote impact activity within the discipline, formulate, champion, and deliver relevant impact strategies and agendas, and to lead a culture where 'impact' is embedded within all research activity. Academic recruitment, promotion, and reward criteria now explicitly include recognition of excellent impact generation, and workload time and study leaves are allocated to support impact. We have worked closely with colleagues in Innovation, Impact, and Business (IIB) to develop new partnerships and to maintain established partnerships with key stakeholders (see Section 4). Our translational science is broad in reach and scope. From animal behaviour research, staff have created educational videos on menopausal whales, contributed research that has formed the basis of evidence for changes in law and policy regarding gamebird release, and collaborated with local Areas of Outstanding Natural Beauty to create bee pollination lines by maintaining hedgerows. At the other end of the spectrum, staff have developed new online treatments for depression targeting rumination and used social psychological techniques to build cohesive communities in sub-Saharan Africa.

Our expertise on social determinants of health and wellbeing is improving health outcomes nationally, including work on gender identity to improve treatment services in the NHS. Other projects include working to improve functioning in children with brain injury, new treatments for smoking cessation and alcohol use disorder, PTSD, bipolar disorder, and depression. We have developed partnerships locally (Devon Partnership Trust, Together Drug and Alcohol services, Headway, Child Brain Injury Trust, Exeter Chiefs, local schools), nationally (NICE, Public Health England, Oviva, Awakn Life Sciences, Drinkaware, Capita, Mind District), and internationally (Janssen Pharma, Monsenso, Santander). Our translational approach has been particularly effective within our local area, leading to a new MSc in Clinical Psychology in collaboration with local NHS trusts and drug services. Our NHS-funded AccEPT clinic and sector-leading portfolio of clinical training programmes (CEDAR) allows for close collaboration between researchers and clinicians, facilitates our translational research, and creates a pipeline for realising the impact of our research.

(iv) **Enhancing interdisciplinary collaboration**: Staff work within an interdisciplinary culture, and local, regional, national, and international networks promote growth in our interdisciplinary research programmes, reflecting our contribution to understanding and tackling society's 'grand challenges', including the environment and climate change (e.g., food security, conservation) and health and well-being (e.g., healthy ageing, mental health). We have benefitted from the university's focus on interdisciplinary working (see 2.3-2.4 Institutional Level Environment Statement [ILES]) and investment in institutional initiatives such as the Wellcome Centre for Cultures and Environments of Human Health, Institute for Data Science and Artificial Intelligence, the Global Systems Institute (see 1.3 ILES), and the University of Queensland/University of Exeter partnership (QUEX; see 1.9 ILES). Staff have active collaborations with colleagues in 19 of the 26 units of assessment at Exeter (see Fig. 2). As outlined above, our staffing strategy focuses on recruiting world-class researchers who can work across sub-discipline boundaries within the department, as well as contribute to institutional initiatives.
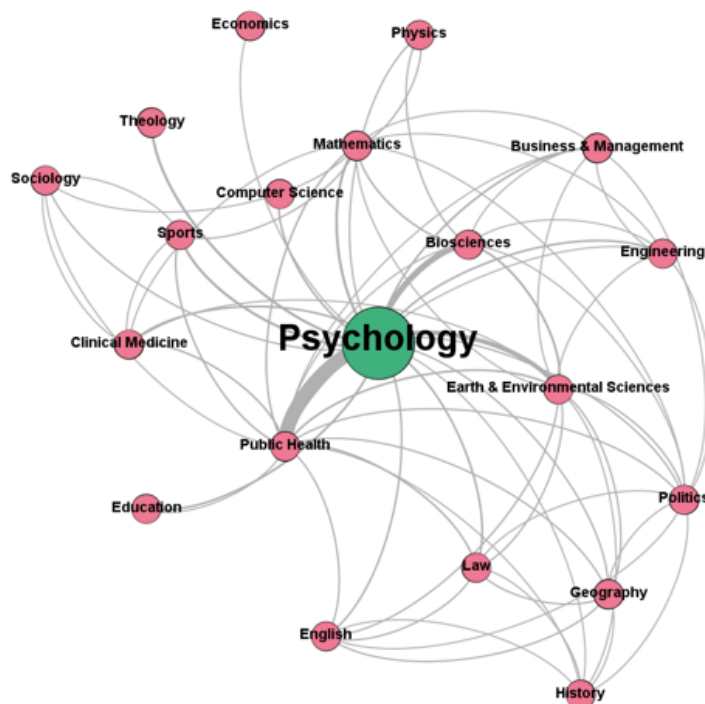
Fig 2. Network of Psychology's interdisciplinary collaborations

Future Strategy

Over the assessment period, we have developed a research environment that has nurtured an increase in the scale, quality, and profile of our research. In addition to continuing the strategies outlined above, we will further enhance the research environment through:

(i) increasing our research income: we aim to maintain our balanced portfolio of research income and leverage our international reputation to focus on larger grant applications. Our research strengths (see above) are aligned to funder priorities, and our strengths in interdisciplinary working will allow us to maximise the opportunities offered in the UKRI Strategic Priorities Fund. Our international collaborations (see Fig. 3) with universities will open opportunities for funding through other funding streams. Our increased focus on impact and engaged research and our growing portfolio of industry collaborations (see Section 4) will facilitate access to the opportunities offered by the Industrial Strategy Challenge Fund and Innovate UK.

(ii) growing our staff numbers: our strategy for continued growth is linked to our research strengths as well as to education developments (MSc in Clinical Psychology), reflecting the central place of the research-education ecosystem in our research and impact strategy. By aligning our research strategy with the university's strategic priorities related to interdisciplinary working and investment in research institutes, we will be able to maximise the opportunities to grow and develop from university investment in interdisciplinary research.

(iii) investing in research infrastructure: a £380k redevelopment project to enhance our facilities for behavioural and cognitive experiments will generate new opportunities for grant capture, grow PGR numbers, and facilitate local, national, and international research collaborations. This investment will improve space utilisation, thereby accommodating our ambitious strategy for growth in staff numbers.

(iv) enhancing our international reach: we will consolidate and further develop our collaborations with world-leading universities (see Fig. 3) to enhance our international profile and drive outstanding research and impact, capitalising on the opportunities in the university's Global

Strategy, as well as the speed and agility provided by new ways of working. We will continue to work with colleagues around the globe, building on our research strengths, to improve the scope, scale, quality, and impact of our research to address key global challenges such as conservation and sustainability and mental health and addiction. At the unit level, we will continue to dedicate at least 5% of the discipline's research budget to support international collaborations.

Fig 3. Network of Psychology's international collaborations

2. Unit Context and Structure

Our research is organised through four major research groups: Animal Behaviour, Cognition, Clinical, and Social, Environmental, and Organisational Psychology. Within and across groups, researchers with shared and complementary expertise come together in specialist and internationally competitive research centres: the Centre for Research in Animal Behaviour (CRAB), the Mood Disorders Centre (MDC), the Centre for Cognitive Control and Associative Learning (CCAL), the Centre for Clinical Neuropsychology Research (CCNR), the Psychopharmacology and Addiction Research Centre (PARC), and the Centre for Research in Ageing and Cognitive Health (REACH).

Staff are based across two sites: most staff are based in the Washington Singer Laboratories (WSL) and linked Henry Wellcome Building for Mood Disorders Research on the Streatham campus, with some staff (i.e., in PARC and REACH) based on the St Luke's campus to facilitate collaboration with the College of Medicine and Health and access to the RD&E hospital and the Research Innovation Learning and Development facilities (see 4.17 ILES).

Throughout, current staff are named in **bold**, with staff appointed since 2014 in ***italics.***

The Animal Behaviour Group

The Centre for Research in Animal Behaviour (CRAB) is distinctive in having strong connections between evolutionary research (addressing the adaptive function of behaviour) and mechanistic research (investigating underlying psychological and physiological processes), with a particular focus on social interactions (***Brent, Croft, Darden, Fawcett***), cognition (**Hempel de Ibarra, Leaver, Madden**) and decision-making (***Higginson***). During the REF period, funding has come from the ERC, NIH, BBSRC, NERC, Royal Society, Leverhulme Trust, Nuffield Foundation, Fisheries Society of the British Isles (FSBI), British Ecological Society, Association for the Study of Animal Behaviour (ASAB) and government (e.g., Defra), and the group has hosted research fellows from NERC, the Carlsberg Foundation, and the Dian Fossey Gorilla Fund.

The group has been strengthened and diversified since 2014 by appointments in evolutionary mathematical modelling (*Fawcett, Higginson*) and genetics, endocrinology and cognitive neuroscience (*Brent*).

CRAB members work with a wide range of industry partners and non-profit organisations, such as the Center for Whale Research (CWR), Activinsights, AbacusBio, Game & Wildlife Conservation Trust (GWCT), Ulster Wildlife Trust, Scottish Wildlife Trust, Animal & Plant Health Agency, Reneco, Natural England, British Association of Shooting & Conservation (BASC), South Devon AONB, Songbird Survival, Wildfowl & Wetlands Trust, Honest Truth, and the European Squirrel Initiative. Applied impacts of the group's research include management recommendations for marine conservation (**Croft**; NERC/CWR), grey squirrel population control (**Leaver**, British Ecological Society), the UK gamebird industry (**Madden**; GWCT, Natural England, BASC), and the Houbara Bustard reintroduction programme in North Africa and the Gulf States (**Madden**, Reneco), and analysis of the link between behaviour, health and production traits in sheep breeding (**Croft**; BBSRC/Activinsights). The group also benefits from involvement in ExBaSE (Exeter Behavioural and Sensory Ecology), which brings together CRAB members with bioscientists at Exeter's Penryn campus, and is one of the largest concentrations of animal behaviour researchers in the world.

Major achievements during the REF period include two ERC Consolidator Awards (*Brent, Madden*), a NERC fellowship (*Higginson*), two Leverhulme fellowships (*Brent, Ellis*), four standard NERC grants (**Croft**), and two large international R01 grants from the National Institutes of Health (*Brent*). Group members have been awarded numerous distinctions and prizes including the ASAB New Investigator award (*Brent*), the FSBI research medal (**Croft**) and the George C. Williams prize (*Fawcett, Higginson*).

The Clinical Group
The clinical group has an international reputation for translational research across the mental health spectrum. Research strengths include work on dementia (*Clare, Laidlaw*), mood disorders (**Dunn, Moberly, O'Mahen, Watkins, Wright**), complex trauma (**Karl**, *Pechtel),* psychopharmacology and addiction (**Morgan**), and developmental psychology and perinatal psychopathology (*Hayes, Lay*, **O'Mahen**, *Owens-Solari, Pechtel*, **Psychogiou**). Work crosses the translational divide, including basic science characterising disorders and evaluating maintaining mechanisms (e.g., anhedonia, rumination), innovation and evaluation of novel treatments derived from basic science insights (e.g., rumination-focused cognitive-behavioural therapy), and dissemination and implementation into real-world clinical and educational settings. Support for this work has been provided by the British Academy, ESRC, MRC, NIHR, NIMH, Horizon 2020, and the Wellcome Trust.

The group has been strengthened and diversified since 2014 by appointments in dementia and cognitive rehabilitation (*Clare*), cognitive-behavioural interventions in older adults (*Laidlaw*), developmental psychopathology (*Owens-Solari*), and health psychology and lifespan development (*Lay*). The work of the group benefits from interchange with research-active staff and clinicians who teach in the CEDAR training and CPD programmes and research therapists in the AccEPT clinic. Professional doctorate students conduct research projects supervised by members of the clinical group, often in collaboration with supervisors in local services.

Clinical group members work closely with a range of public stakeholders, including local and national mental health services in the UK NHS, contributing to NICE guidelines for a range of mental health disorders, and advising parliament about mindfulness and perinatal mental health. Group members work with industry in the development of novel pharmacotherapies in depression and addiction (**Morgan**) and rolling out new treatments, including e-treatments, for mental health disorders (**Watkins**). We also have extensive international reach, including implementing and evaluating Behavioural Activation (**O'Mahen**) and new approaches to managing trauma (**Karl**) in developing countries.

Major achievements during the REF period include two large EU grants on clinical trials for depression prevention (**Watkins**), a NIHR Career Development Fellowship (**Dunn**), an MRC Biomedical Catalyst Award (**Morgan**), a Wellcome Trust Clinical Research Career Development Fellowship (*Pechtel*), and a 5-year Alzheimer's Society Centre of Excellence (*Clare*). Outcomes of definitive trials on treatments for depression were also published (e.g., *The Lancet, Journal of American Medical Association*).

The Cognition Group
The cognition group is internationally recognised for its work on cognitive control and associative learning as well as its use of a wide range of cognitive neuroscience techniques. Research strengths include: perceptual learning and associative learning with applications to face recognition (**McLaren,** *Civile***, Milton, Lavric**), cognitive control (*Elchlepp***, Lavric, McLaren,** *van 't Wout*)**,** impulsive and compulsive behaviour and addiction (**Dodds, Hogarth, Lawrence**), consolidation in language and memory (**Dumay,** *van 't Wout*), and applied cognitive neuropsychology across the lifespan and the social consequences of traumatic brain injury (**Adlam, Williams**). Grant support has come from the British Academy, Action Medical Research, Dunhill Medical Trust, the Wellcome Trust, NIHR, NIH, MRC, Dstl, the Barrow Cadbury Trust, the Leverhulme Trust, ESRC, and Horizon 2020.

The group has been strengthened and diversified since 2014 by appointments in the areas of face perception and perceptual learning (*Civile*) and cognitive control (*Elchlepp*), coupled with cognitive development (*van 't Wout*). Civile and Elchlepp both have strong interests in cognitive neuroscience (EEG/ERP, tDCS, fMRI), while *van 't Wout* investigates the development of control of action and executive processing in both young children and adult humans.

Members of the cognition group undertake engaged research with public and private stakeholders, including: the UN, the Howard League for Penal Reform, Devon and Dorset Drug and Alcohol Services, CogState, Child Brain Injury Trust, the NHS, Barrow Cadbury Trust, Headway, Rosetta Stone, Oviva, Dstl, and PowerRuby Ltd.

Major achievements during the REF period include an ESRC New Investigator award (*Civile*), an ESRC standard grant (**Dumay**), a BA/Leverhulme Trust Mid-Career Fellowship (**Adlam**), and an EU Marie-Curie Fellowship (*Civile*). **Williams'** work has influenced national policy on head injury assessment within the prison system.

The Social, Environmental, and Organisational Psychology Group
The SEORG group is internationally recognised for its work on social identity and group processes—specialising in both basic and translational research. Research strengths include workplace diversity, particularly gender and leadership (**Barreto, Haslam,** *Kirby***, Pendry, Ryan**), social influences on health and well-being (**Barreto,** *Doyle***, Haslam, Mewse, Pendry, Smith**), sustainability and behaviour change (**Rabinovich, Smith**), intergroup relations and collective behaviour (*Faber, Gobel,* **Levine, Livingstone, McGuire, Rutland,** *Sweetman*), and identity in the digital age (**Koschate-Reis, Levine, Pendry**). Support for this work has come from the British Academy, ESRC, EPSRC, ERC, GCRF, and the Wellcome Trust.

The group has been strengthened and diversified since 2014 by appointments in the areas of workplace diversity (*Kirby)*, social influences on health (*Doyle*), collective action and moral psychology (*Sweetman*), cultural psychology (*Gobel*), pro-social behaviour and cooperation (*Faber*), and social development (*McGuire, Rutland*).

SEORG members are involved in large interdisciplinary projects, including work on land management in Africa (**Rabinovich**; GCRF) and on a circular economy for plastics (**Smith**; EPSRC). Members also contribute to university-level institutes, including the Institute for Data Science and Artificial Intelligence (**Koschate-Reis**). SEORG members undertake engaged research with a wide variety of public and private sector stakeholders, including the Behavioural Insights Team, the Met Office, Government Equalities Office, Drinkaware, UBS, NHS, Ernst &

Young, Plymouth City Council, NSPCC, ACAS, Dstl, National Crime Agency, Polaris Consulting, and Softbank Robotics.

Major achievements during the REF period include an ERC Consolidator Award (**Ryan**), an ESRC New Investigator award (*Kirby*), and an EPSRC Innovation Fellowship (**Koschate-Reis**). SEORG members have been involved in an EPSRC Platform Grant (**Koschate-Reis, Levine**), and were central in securing the £8M Wellcome Centre for Cultures and Environments of Health at Exeter (**Barreto**).

3. Mechanisms for the development, promotion, and dissemination of research and impact

Promoting and developing research in Psychology is the responsibility of a Director of Research (DoR), a Director of Impact (DoI), Strategic Group Leads (SGLs), a Director of Postdoctoral Research (DPostdoc; new role since REF2014), and Director of Postgraduate Research (DPGR), who form the Psychology Research Strategy Group (RSG). A research budget, managed by the DoR, provides funds for laboratory equipment and consumables, pump-priming projects, conference attendance, research seminars, and PGR research expenses (£630k over the REF period). The DoR has discretionary funds, used strategically to facilitate impact, internationalisation, inclusivity, as well as commitments to bids to the university's Capital Equipment Fund.

Each research group runs regular research seminars, with a mixture of internal and external speakers, as well as regular lab meetings. There are discipline-wide seminars, and these are used to celebrate our successes (e.g., inaugural lectures) and to showcase our impact. We organise regular research and impact strategy days, impact and engaged research workshops, and externally-delivered grant writing workshops. SGLs provide mentoring to staff within their research group, including, for example, guidance and review of funding applications, publication strategy, research methods, and conference presentation support.

An important contribution to our research culture is made not only by PGR students (see Section 2.2), but by the 70-80 students/year in our taught MSc programmes: each student completes a supervised research dissertation. Many of our MSc students continue to doctoral studies at Exeter (48 students over the REF period) or at other institutions. As outlined above, we are introducing additional MSc programmes, further aligning our education and research strategies. Undergraduates also contribute to our research culture, through final year research projects, 2nd year research modules, and our formal research internship module (over 120 participants since 2015). The research culture fostered at all levels means that undergraduate and MSc projects contribute to wider research programmes and outputs (e.g., **Lavric**, *J Exp Psychol: Gen*; **Livingstone**, *J Soc Pers Psychol*), co-creating ideas and driving research-inspired learning.

A workload model, managed by the Psychology Executive Group (PEG) in line with university and college procedures (see 3.4 ILES), ensures equitable teaching and administrative loads, promoting equality and transparency, and strategically allocates research time, including time on grant-funded projects and to support impact. Strategic workload allocation allows two staff members each year to have study leave. All staff who have been in post for 5 years can apply for study leave, with applications considered by PEG. Over the REF period, 8 staff members were awarded study leave (6.5 years of staff time).

Research leadership appointments are overseen by the Deputy Vice-Chancellor for Research and Impact and the College's Associate Dean for Research, who ensure coherence with university strategy and meet regularly with DoRs. Budget allocations are the responsibility of the College Dean and Associate Deans for Research. The College has a Strategic Development Fund (~£150k/year) to pump-prime activities that enable development of bids for external funding, fund equipment to underpin excellent research by enhancing capability or opening up new areas of research, and support strategic research and impact developments beyond the scope of the unit's research budget. We received ~£160k from this fund over the REF period.

4. Research integrity, ethics, and governance

The university is committed to open access, research integrity, responsible metrics, and the ethical conduct of research as a signatory to the Concordat to Support Research Integrity and the Declaration on Responsible Assessment (see 2.8 ILES). Staff must complete mandatory training on ethics, research integrity, and information governance. Within the unit, our work is pursued to the highest levels of scientific, scholarly, and professional integrity. Support is provided via the university's online Research Toolkit, Psychology's Ethics Committee, and the university's Integrity, Ethics, and Research Governance processes (see 2.9 ILES). All research is subject to approval from either the Psychology Ethics Committee, the university's Ethics Committee, or the NHS.

Open science practices are embedded within our research culture. We run annual training sessions on open science principles and practice, including practical support sessions on pre-registration. We have a [Reproducilitea](#) journal club to facilitate the discussion and implementation of open and reproducible research. Other initiatives include redesigning undergraduate modules to incorporate replication and open materials and data; this has led to high quality outputs (e.g., **Livingstone**, *J Exp Soc Psychol*). UG and PGT projects have been reconfigured to allow more high-powered, pre-registered direct replication studies. These education initiatives feed through into wider research programmes, reflecting the education-research nexus, and have increased our capacity to conduct replication work (e.g., *Sweetman*, *Roy Soc Open Sci*). Staff are involved in consortium projects with colleagues to collaborate on high-powered projects that require pre-registration and open materials and data (e.g., **Lawrence,** *Beh Neuroscience*). These initiatives are reflected in the culture of individual 'labs' that have implemented open data and pre-registration as standard: a recent staff survey indicated that 57% of staff have pre-registered research and multiple high quality outputs include pre-registered research (e.g., *Faber*, *Nature Human Beh; Kirby/***Ryan**, *Psych Bull*). Staff with major editorial roles (e.g., **Smith**) have used their position to move the field towards more open practices (e.g., mandatory transparency statements, registered reports). All FTE included in our REF2021 submission are ORCID registered.

Over 100 requests from staff, including research fellows and PGRs, for funding to support gold open access were approved from the Institutional Open Access Fund (~£130k) over the REF period. Staff must submit open access compliant versions of their papers to Open Research Exeter within 3 months of acceptance and the DoR sends reminders to promote compliance. Over the REF period, 985 outputs were deposited, accumulating over 115000 downloads; the annual number of downloads increased by 450% from 5000 in 2014 to 27500 in 2019. The success of our Open Access policies is evidenced by the fact that 100% of our output submission is OA compliant. The university also provides specific guidance on research data management and supports open data through the Open Research Team. Researchers have access to a fully customized data management planning tool (DMPonline). During the REF period, 72% of staff made datasets publicly available in various repositories.

Section 2. People

1. Staffing strategy and staff development.

Our staffing strategy uses our existing research strengths to attract outstanding researchers who will complement and expand our expertise, and then provides an environment that enables early career academics to thrive and become the research leaders of tomorrow**,** and seasoned researchers to maintain their status as world-class researchers. This is achieved through the following mechanisms:

(i) **Equality, Diversity, & Inclusivity (EDI):** EDI is an institutional priority (see 3.14-3.17 ILES), and a strong commitment to EDI underpins our approach to recruitment, promotion, and our supportive research environment. Our research expertise in both equality and well-being feeds into cultural change across the university, with staff serving on university-level EDI committees. *Sweetman* is a member of the Race Equality Group as well as the Provost Commission.

Darden is on the central committee for the BME network as well as the Decolonise Network. **Dunn** is a member of the Positive Working Environment group, contributing expertise on well-being initiatives, with *Civile* and *Owens-Solari* as ECR representatives. **Pendry** has led on university initiatives in relation to menopause. Psychology was awarded a Silver Athena Swan award in 2016, with successful re-accreditation in 2020. The Inclusivity Leads sit on the Psychology Executive Group (PEG), ensuring that EDI issues are considered in all decision-making. Recruitment panels for Category A staff have a member tasked specifically with ensuring EDI issues are considered in shortlisting and selection. Of Category A staff, 49.9% are women (41% of Cat A appointments since 2014 are women). Over the REF period, 4 women have been promoted from L to SL (67% of promotions), 8 to AP (80% of promotions), and 2 to P (50%) of promotions (see Table 1). Leadership development for traditionally under-represented groups is supported by funding to attend Advance HE's Aurora and Elevate programs (seven women have participated in these programs since 2014).

GRADE	WOMEN	MEN
Lecturer (F)	3.1	6.0
Senior Lecturer (G)	9.5	8.0
Associate Professor (H)	6.2	4.0
Professor	5.0	6.2
TOTAL	24.1 (49.9%)	24.2 (50.1%)

Table 1: Demographic profile (based on FTE) of unit as a function of gender (binary) and seniority.

To ensure that EDI issues were considered fully in our REF2021 submission (i) all staff involved in REF decision-making completed additional EDI training (e.g., unconscious bias workshops); (ii) we developed and disseminated a unit-level Code of Practice, complementing the institution's Code of Practice, to ensure decisions were made in a fair, consistent, and transparent manner; and (iii) our Inclusivity Leads served on output selection panels. We analysed our final output submission to ensure that it was representative of the unit (i.e., no more than 5% deviation) in terms of gender and seniority (see Fig. 4). Finally, 50% of our impact case studies were led by women.
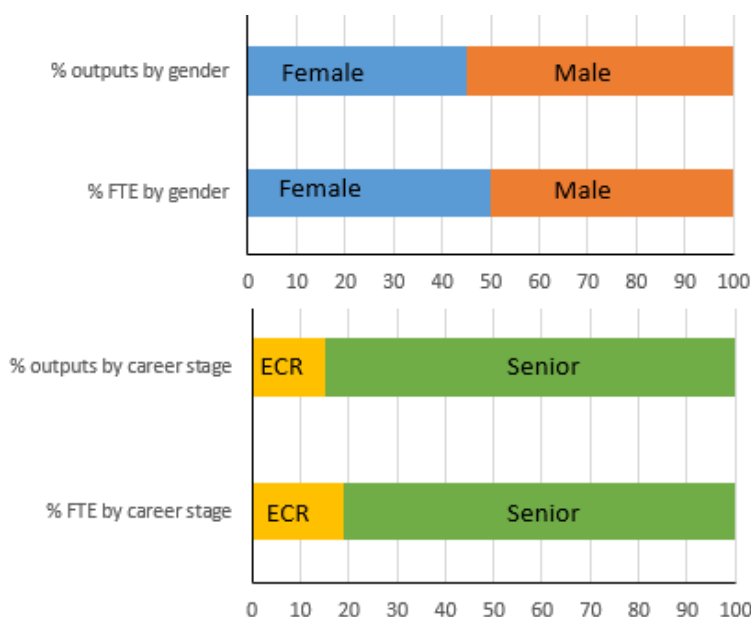

Fig. 4. Gender and career stage distributions of UoA4 staff and outputs.

(ii) **Professional Development Programme**. We aim to recruit new lecturers with outstanding potential and provide them with mentorship and a research environment where they can thrive

and become the research leaders of tomorrow. Early-career staff members are supported through the university's Professional Development Programme (PDP), which sets specified goals for research, teaching, and wider academic contributions. Staff on PDP are supported by regular meetings with the Head of Department, as well as with their Academic Lead. The university's 'Academic Professional' Degree Apprenticeship supports this development process for new lecturers and leads to Fellow status with Advance HE (see 3.5 ILES). Our support for new staff (see below) allows them to develop their career at Exeter. All staff appointed to a lecturing contract in the REF period passed probation within the 3-year period and were promoted to Senior Lecturer within 3-5 years.

(iii) **Workload**. New colleagues have a reduced teaching and administration load in their first two years, allowing them to concentrate on getting their research under way and given appropriate start-up funds. Workload allocation is made strategically to allow additional time to support impact activities and to allow two staff members each year to have sabbaticals. All staff who have been in post for 5 years are able to apply for sabbaticals and applications are considered by the Psychology Executive Group (PEG). Over the REF period, 8 staff members were awarded sabbaticals (equivalent 6.5 years of staff time).

(iv) **Mentoring**. All staff are assigned a mentor who, with their Group Lead and Academic Lead (AL), provides support and guidance in areas such as preparing publications and grant applications, research direction etc. These matters are discussed in meetings of labs and research groups, which are particularly important for developing collaborations across research groups. Staff can access additional mentoring through the university's One Step Beyond scheme. Research Development Managers meet with new academics to provide tailored intelligence about funding sources. With the support of the DoR budget, 16 PIs, including new and established PIs, attended externally-delivered training on managing research teams and supporting early career researchers, to further improve mentoring of research staff. Staff well-being is critical to our success: staff have access to well-being officers, Occupational Health, and 24/7 online assistance (see 3.17 ILES). Weekly coffee sessions (run virtually during the covid-19 pandemic) provide opportunities for informal mentoring and contribute to a positive working environment. Staff holding leadership roles can access initiatives to support their development (e.g., The Leadership Difference).

(v) **Performance & Development Review & Promotions**. Staff progress and plans for research, impact, education, and internationalisation are reviewed annually through the university's Performance and Development Review scheme (see 3.6 ILES). Our staff can choose, and change, their Academic Lead to ensure the review process supports their career development. We hold biennial promotion workshops, attended by the College Dean and HoD. For promotion to AP and P, there are two application rounds each year and staff receive feedback and support from the HoD on applications. We hold termly meetings of the HoD with ALs to discuss colleagues' career progression, including interest in leadership roles and other promotion criteria. Criteria for promotion and progression are outlined in the Exeter Academic framework (see 3.3 ILES); staff are supported to apply for relevant promotion when these criteria are met.

(vi) **Research staff.** The university works closely with Vitae and the principles of the Researcher Development Concordat to provide secure career paths and training for research staff (see 3.8-3.9 ILES). Our research-only staff numbers have grown from 30 in REF2014 to 48 in REF2021, creating a vibrant research culture.

To provide a supportive and inclusive *environment and culture* where researchers can flourish, we organised bespoke training from an external provider (Fearless Futures) for managers of researchers on inclusivity, power and privilege, and intersectionality; 16 PIs attended this training. There is post-doctoral representation on key committees to ensure feedback from researchers can be used to improve our practices and to provide researchers with opportunities to engage with relevant policy and decision making. We created a new leadership role (Director of Postdoctoral Research) to liaise between our research staff and our executive group, ensuring

that researchers are represented in decision-making. At the university level, ECRs contribute to ECR Liaison Forums, through which they have formal strategic representation across the university.

To support researchers' *professional and career development*, researchers have prioritised access to discipline-level funds to support their independent research. Post-docs can apply for college-level funding (e.g., Strategic Development Fund, internationalisation funds). For example, 20% of our individual mobility awards (see Section 4) since 2015 were awarded to post-docs. Post-docs undertake annual PDRs with a staff member who is not their PI and can participate in the unit's research monitoring exercises to further support career development. Our Director of Postdoctoral Research organises bespoke training and development sessions, and our Research Development Manager meets regularly with post-docs to identify suitable independent research fellowship opportunities and support applications. Researchers can access training opportunities provided by the Doctoral College, including bespoke careers advice, that matches the principles of the Researcher Development Concordat and is co-designed with university ECR networks.

To support researchers' *employment*, we recognise excellent post-docs through our Above and Beyond recognition scheme: 22 researchers received awards over the REF period. The College provides match funding to support independent fellowship applications (e.g., Leverhulme Trust). The College has procedures in place to redeploy fixed-term researchers and/or move them onto open-ended contracts.

(vii) **Synergy with clinical treatment and training**. CEDAR (Clinical Education, Development and Research) is one of the largest providers of training in evidence-based psychological therapies in the UK. It is an internationally recognised clinical training and research department, with partnerships in Australia, Canada, Europe, Malaysia, Singapore, Hong Kong, and Japan. Our staff work closely alongside CEDAR staff and staff employed in the NHS-funded AccEPT Clinic in ways that enrich research as well as clinical provision and research-led teaching. The Mood Disorders Centre Lived Experience Group allows experts by experience to contribute to the design of research projects. These long-standing links facilitate access to clinical populations and provide a basis for clinically focused research programmes, as evidenced by successful grant awards (e.g., NIHR Fellowships, NIHR RfPB) and reflected in high-impact publications of clinical trials (e.g., *The Lancet*). Our professional doctorate programmes further enhance NHS links and our highly regarded clinical training encourages research excellence, highlighted by high quality publications by trainees (e.g., *J Consult Clin Psychol, Beh Res Therapy*). The Director of CEDAR sits on the Psychology Executive Group to ensure that the voice and needs of clinical staff are heard and considered in decision-making.

(viii) **Voice and engagement.** We hold regular staff meetings. Staff in leadership roles provide reports that are distributed ahead of each meeting so that meetings are a forum to discuss key issues and strategies, rather than just a reporting forum. All staff can put forward issues for discussion; this can be done anonymously. Biennial employee engagement surveys (EES) have led to unit-specific action plans, informed by further discussion of issues identified. For example, since 2018, we have provided an anonymous online forum to allow staff to elaborate on responses to the EES, as well as facilitate more interactive and inclusive decision-making prior to staff meetings. Our Inclusivity Group facilitated 'world café' sessions to discuss solutions to these concerns, allowing our executive group to integrate these concerns and solutions into day-to-day activities and to prioritise actions. For example, we now have written descriptions for all leadership roles and an open and transparent application process, as well as transition periods to support succession planning and handovers. We introduced Slack as a collaborative working tool, providing a rapid response forum for discussion, consultation, feedback, support, and to celebrate our successes.

2. Research Students
We have 67 MPhil/PhD students, with an additional 70 students enrolled in our professional doctorates. Our current cohort is diverse, originating from 42 different countries. Our PGR

students report high levels of satisfaction: overall satisfaction on the PRES is 85%, and 90% of our students agree that they are "part of an engaging research culture".

We have active engagement with all relevant Doctoral Training Partnerships (DTPs) and staff serve on interview panels for NERC, BBSRC, ESRC, and EPSRC studentships. Since 2014, we have received studentships from the ESRC, EPSRC, BBSRC, NERC, and MRC, with additional studentships from both internal (e.g., University of Queensland/University of Exeter [QUEX]) and external (e.g., Alzheimer's Society, China Scholarship Council) sources. Partnerships with external partners have included studentships with local NHS trusts, Dstl, Help for Heroes, and Songbird Survival. Our staff also supervise doctoral students at other UK (e.g., Bath, Cardiff) and international universities (e.g., Melbourne, Lund).

We are also successful in attracting international students who are either self-funded or funded with government studentships (e.g., Turkey, Chile, Saudi Arabia). The College invests £1.6M annually to match-fund DTP and industry studentships and provides fee waivers to attract outstanding international candidates. We received £1M in College support for studentships over the REF period.

(i) **Recruitment and selection:** PGR students are selected through a competitive process, involving a project proposal and interview. Non-clinical students are initially enrolled as MPhil students. To progress to PhD registration, students must pass an upgrade process within 12-18 months of enrolment (9-12 months from 2019/20). The upgrade process includes submission of a literature review and detailed thesis plan, a viva, and seminar presentation. All students, including those who start mid-year, receive both a College-level and discipline-level induction.

(ii) **Equality, Diversity, & Inclusivity (EDI):** 80% of our PGRs are women. We make offers to a greater proportion of women (47-86%) than men (33-75%), while the proportion of offers to acceptance is relatively equivalent, suggesting that our PGR application process retains high female representation relative to application rates. 28% of our PGRs identify as BAME. Our recruitment panels for PGR students involve members of both genders. Since 2017, paid maternity leave is available for all funded students and candidates can register for a range of part-time attendance modes (e.g., 0.5-0.9) to better support flexible working (see 3.11 ILES).

(iii) **Progress monitoring***:* All students have (at least) two internal supervisors. Contact with supervisors and mentors is recorded via an online system (MyPGR), and at least one supervisory meeting per term is dedicated to discussing progress. Progress is also reviewed annually, and issues raised by students or supervisors are addressed.

(iv) **Training:** All students complete an annual training needs analysis. Ad hoc skills training takes place within labs and research groups, and students can audit MSc modules if necessary. Bespoke training for PGRs is provided at the discipline level based on surveying student needs (e.g., open science, career development, specific analysis techniques). PGR students have access to skills training and a dedicated careers advice service provided by the Doctoral College (see 3.9, 3.12 ILES). Additional training opportunities are also provided by the DTPs.

(v) **Resources**: Students without a research training grant from their funder are allocated funding by the College. All students have access to a dedicated discipline-level PGR fund (£15k/year), used to support conference travel and participant payments. Part of this fund is devolved to PGR student representatives to support training and social events. All students have a desk and computer in a shared office. Students in our professional doctorates are embedded off-site within the NHS except for block teaching periods on-site, when they have access to appropriate working space and facilities. PGRs can supervise students enrolled in our research internship module, giving access to research assistance as well as experience in mentoring and supervision.

(vi) **Pastoral support and mentoring**: The well-being of our research students is critically important, and we actively monitor this in parallel with academic progress via regular supervisory

meetings. Our Directors of PGR run 'pulse' surveys to monitor well-being and student satisfaction. Students can access a wide variety of assistance (e.g., well-being, study skills) via the Doctoral College, including a dedicated PGR well-being advisor (see 3.13 ILES). Students are allocated a pastoral tutor who is independent of the supervisory team. Students can also access a peer support system, in which students receive mentoring support from students who are at a more advanced stage or who are postdoctoral fellows.

(vii) **Voice and engagement**: PGR students participate in the life of the department through regular staff-student liaison committees and in staff meetings where PGR issues are discussed. PGR students also contribute to our Inclusivity group and play an active role in social events. Psychology PGRs also contribute to a yearly College PGR conference. PGRs meet with the DPGRs in regular PGR forum meetings and PGR representatives liaise with the HoD on issues that affect PGR students.

(viii) **Graduate outcomes**: Based on a recent staff survey, of the 200 PGR students who completed over the REF period, 10 are lecturers or equivalent in HEIs, 29 are postdocs in HEIs, 15 hold other research posts (e.g., public and private sectors, animal charities), and 6 are involved in consultancy work related to their psychological expertise. Other students have progressed onto further training (e.g., DClinPsych). Students on professional doctorates are NHS employees and almost all proceed to clinical positions.

Section 3. Income, infrastructure and facilities

1. Major research income

During the REF period, we were awarded over £26.75M (~£551.5k/FTE) in competitive grant funding, almost trebling our awards from the previous REF period (£9.48M), with £27.74M in research income (~£574.5k/FTE). We have broadened our funding sources (see Fig. 5) to include over £5.86M from the EU (including a €4.01M H2020 project led by **Watkins** and three ERC Consolidator Awards [*Brent*, **Madden, Ryan**]), over £9.39M from UKRI (including an EPSRC Innovation Fellowship to **Koschate-Reis**, and two ESRC New Investigator awards to *Civile* and *Kirby*), over £3.85M from government, and over £4.37M from charitable organisations (including an Alzheimer's Society centre to *Clare*). We received 11 impact-related research awards from Impact Accelerator Award schemes (£108k). In addition, Psychology was centrally involved in the successful bid for the Wellcome Centre for Cultures and Environments of Human Health (£8M).
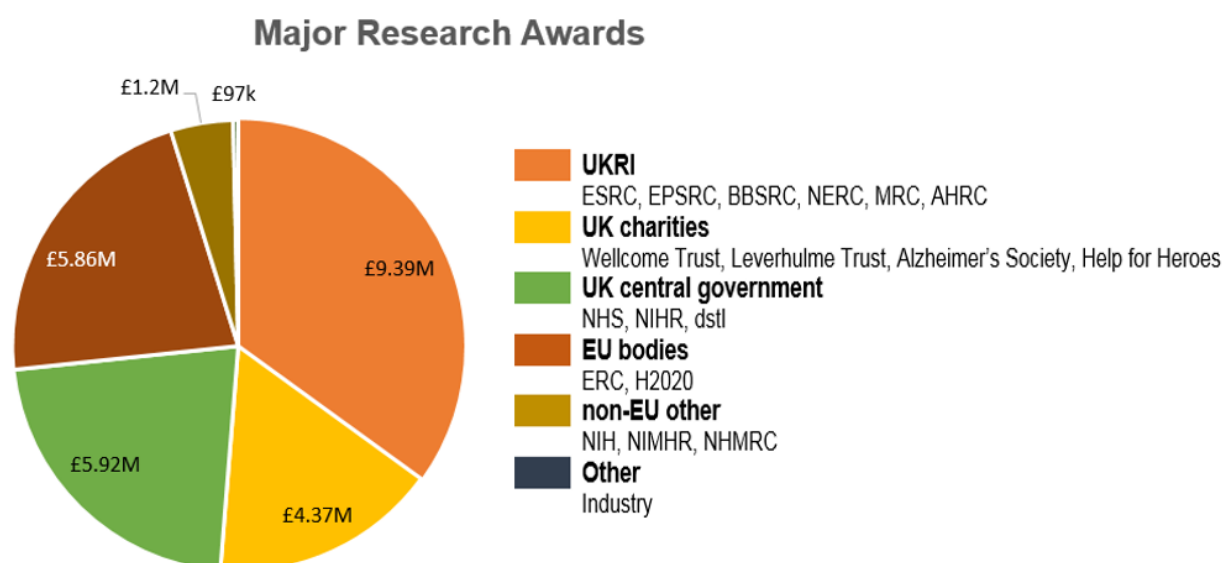

Major Research Awards

£1.2M £97k

£5.86M
£5.92M
£4.37M
£9.39M

UKRI
ESRC, EPSRC, BBSRC, NERC, MRC, AHRC

UK charities
Wellcome Trust, Leverhulme Trust, Alzheimer's Society, Help for Heroes

UK central government
NHS, NIHR, dstl

EU bodies
ERC, H2020

non-EU other
NIH, NIMHR, NHMRC

Other
Industry

Fig. 5. Psychology total awards (£26.75M) during the REF period by funder type, with key funders indicated.

2. Strategies and infrastructure to support income generation

Key to our success is our multi-layered support for funding applications, including a rigorous internal peer review process. The DoR oversees all applications and provides support where needed to maximise chances of success. Academic Leads and Strategic Group Leads are a major source of support for the development of applications, providing constructive feedback prior to submission and supporting colleagues in responding to reviews.

Staff are encouraged to present their ideas orally at frequent "pitch and putt" events as grant and fellowship proposals are developed, providing an opportunity to receive early feedback on research plans and proposed methods, as well as guidance on the most appropriate funding sources. We have robust sifting processes for the most competitive schemes (e.g., fellowships, ERC schemes), which ensures only candidates with a relatively high chance of success move to full application, thereby managing workload for both academics and support staff. Following informal rapid peer feedback on viability and ways to develop ideas, staff submit a draft application to an internal review panel for feedback and revision before submission is approved. Where relevant, multiple practice interviews, supported by central teams and senior colleagues, ensure that final submissions are of the highest quality. We pay close attention to unsuccessful applications, working closely with colleagues to ensure that feedback is used to develop future bids. Training on grant writing and development is provided, including workshops delivered by external providers. Intensive support is provided to ECRs by our dedicated Research Development Manager. Success rates have remained stable at 20-25% across the REF period, despite a 50% increase in the volume and value of applications, testifying to the role of these mechanisms in supporting income generation.

Additional mentoring and peer review are provided by the university's Funder Advisory Networks (FANs; see 4.2, 4.7 ILES). The FANs, which are groups of senior staff with extensive experience of funding panels, cover the various UKRI councils as well as other major funders (e.g., Wellcome, Leverhulme, NIHR, EU). The FANs provide an informal setting for sharing early funder intelligence and horizon scanning for relevant funding opportunities, a pool of funder-expert peer reviewers, and the leadership to bring together and support researchers applying to the funder.

We are supported by dedicated Research Development Managers who provide tailored intelligence about funding opportunities and support applications (see 4.6-4.8 ILES). University-level facilitation funds provide pump-priming to support the development of collaborative networks as well as pilot work (see 4.9 ILES), and match funding is often provided by the DoR. Every grant application is supported by a dedicated, experienced research administrator who helps with finances and personnel details, as well as ensuring compliance with funder requirements.

Support for impact and engaged research is supported by Research Services and Innovation, Impact, and Business (IIB) (see 4.6, 4.8, 4.10 ILES), who support project development and management, business and commercialisation schemes, and the development of research networks. Due to the diversity of our research activity, our impact and engaged research portfolio is supported by 5 IIB staff who cover: health & well-being; government, crime, justice & law; environment; defence, security & conflict; and leadership, management & organisational strategy. Support for PGR matters is provided by a dedicated team located within the Doctoral College.

3. Infrastructure and facilities

Most staff are based in the Washington Singer Laboratories (WSL) and linked Henry Wellcome Building for Mood Disorders Research (HWB) on the Streatham campus, with some staff (i.e., those in PARC and REACH) based on the St Luke's campus to facilitate collaboration with the College of Medicine and Health and access to the RD&E hospital and the university's Research Innovation Learning and Development (RILD) facilities (see 4.17 ILES).

WSL hosts a range of research facilities including: a Biobehavioural and Virtual Reality lab with advanced psychophysiological recording (EEG, EGG; EMG, SCR, heart rate, respiration) and eye-tracking in a virtual reality environment; a Social Behavioural Lab with test rooms and psychophysiological equipment; cognitive neuroscience labs (two eye-trackers; two TMS labs with concurrent EEG plus tDCS and BioPac physiological recording); testing rooms; and dedicated animal labs (sensory and behavioural ecology labs; specialist aquaria). Animal work is supported by a full-time technician for the aquaria and a 0.5FTE technician for the sensory and behavioural ecology labs. Members of the Animal Behaviour group have access to several unique field sites (e.g., Cayo Santiago, Center for Whale Research). The HWB hosts a state-of-the-art clinical research facility including therapy treatment rooms with AV recording for high-quality psychological treatment trials. Staff have access to a research-dedicated Magnetom Prisma 3T MRI scanner, a Biograph Vision 600 PET-CT scanner, and the Clinical Research Facility at the RD&E (see 4.20 ILES).

Further investment over the REF period includes: (i) commitment to funding one day/week on the fMRI scanner; (ii) a sound-proofed testing facility with individual cubicles; (iii) a range of fieldwork equipment (e.g., geophone array, ATLAS software, proximity sensors; thermal cameras, Field Metabolic System); (iv) Qualtrics, Gorilla, and LifeData licences to support online research; (v) Noldus facereader software; (vi) mobile VR equipment and software; (vii) a server for collection of data from mobile phone applications and fMRI data; and (viii) funds for staff support for the ACCepT clinic.

The AccEPT clinic, hosted by Psychology and funded by the NHS, provides valuable infrastructure for the development of novel psychological therapies. It employs clinic administrators and therapists who support clinical trials, as well as delivering routine NHS care. Staff have access to the Exeter Clinical Trials Unit (ExeCTU), which provides support in the design and delivery of high quality and efficient trials, and to statistical consultancy and analytical support via a College-funded statistician.

Participant panels to support research include: (i) first year undergraduates who participate as part of research methods training; (ii) a large panel of paid participants; (iii) a general community panel; (iv) a Mood Disorders Centre (MDC) database of over 1000 patients; (v) a database of patients with acquired head injuries, strokes, and memory problems built from NHS and charity links; (vi) access to the Exeter 10,000 database (see 2.7 ILES); and (vii) a School Research Consortium with 60 secondary schools in the South-West. Funding is available to access participants via Prolific Academic or MTurk. The MDC has an active Lived Experience Group of individuals who have experienced depression or are carers, and who are involved in all stages of research, thereby ensuring Patient and Public Involvement.

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

1. Collaborations

International collaboration is strong: in 2018 over 55% of our outputs had international authorship. Staff have collaborations with colleagues in 76 European universities, 53 US universities, 19 universities in Australasia, 16 universities in Asia, 12 universities in Canada, 6 universities in South America, and 14 other international universities (see Section 1, Fig. 3).

Many of our international collaborations are supported by funding. For example:
(i) **Watkins** leads the EU H2020 EcoWeb project (€4.01M), with colleagues at 8 European universities, that seeks to use technology as a tool to assess and promote emotional well-being in young people;
(ii) **_Brent_** is a co-PI on a National Institute of Aging grant ($3.55M) that aims to develop a biological model of the social contributions to aging in a natural population of non-human primates;

(iii) **Adlam** is the UK Chief Investigator for ADAPT-Genetics ($2.1M), an NIH funded study recruiting across 48 sites (10 UK sites) in 8 countries, investigating the genetic and environmental factors that influence outcomes following paediatric traumatic brain injury;
(iv) **Livingstone** is an international Co-I on a Chilean National Funding for Scientific and Technological Research grant (£262.5k) on psychological consequences of collective action.

We have focused our internationalisation activity on key partnerships that enhance our research environment and research. **Mechanisms to enhance international collaboration** include: (i) outward and inward mobility fellowships (10 awarded since 2015; £28k); (ii) Global Workshops (e.g., a 2019 workshop on 'international perspectives on cannabis and mental health'; £15k); (iii) university-level facilitation funds to support international collaborations (£42k awarded since 2018); (iii) discipline-funded external speaker programs; and (iv) discipline-level support for international conference attendance. We have two Directors of Internationalisation and staff are supported by colleagues in the Global Partnerships team.

This activity has resulted in high level partnerships with the University of Queensland and with the University of British Colombia, as well as the Chinese University of Hong Kong and Tsinghua University. Our recognition as a top 100 psychology department in the QS World University Rankings (one of only 16 UK Psychology departments in the top 100) testifies to the success of our internationalisation strategy.

Local collaborations are facilitated through university multi-disciplinary research institutes (see 1.3, 2.3 ILES). Staff are involved in several institutional initiatives, including:
(i) The **Institute for Data Science and Artificial Intelligence (IDSAI)** is a hub for data-intensive science and artificial intelligence activity. **Koschate-Reis** is the Politics and Policy Theme Lead.
(ii) The **Global Systems Institute (GSI)** unites a trans-disciplinary group of researchers, educators, and partners to develop a systemic view of coupled global changes in the human social and economic sphere and the biosphere. **Smith** is affiliated with the GSI.
(iii) The **Wellcome Centre for Cultures and Environments of Human Health (WCEHH)** focuses on the cultural and environmental factors that shape our lives, using new engaged research methods and translational pathways to enable health and well-being across the life course. **Barreto** and *Clare* are centre PIs.
(iv) **The Centre for Resilience in Environment, Water and Waste (CREWW)** is a joint initiative between the university and South West Water that conducts world-leading research into the provision of safe and resilient water services. **Smith** is the Psychology lead for CREWW.

We also have strong collaborations with the other disciplines within the College of Life and Environmental Sciences, benefitting from a vibrant community of world-class researchers and critical infrastructure to support research, impact, and staff development. Staff also collaborate with colleagues in the five other Colleges within the university, as well as colleagues based in Exeter's Institutes. These collaborations include joint PhD supervision and grant awards.

Impact and engaged research is fundamental to our research strategy (see Section 1). We have embedded impact into our leadership structure and worked hard to create a strong culture of engaged research. We have impact champions who are making significant contributions to the economy and society. These include changing the assessment process upon incarceration to test for brain injury, which means that more prisoners are receiving correct treatment; making mindfulness an acceptable treatment in depression; introducing new training programmes to improve cognition in people with dementia; and delivering national training programmes to improve perinatal mental health. Others have championed engaged research, winning funding from MRC, Wellcome Trust, ESRC and EPSRC to work on engaging end users of research at every stage of the research process. Our staff (**Darden**) lead on Exeter's Soapbox Science activities, and many female staff and PGR students have participated in this event.

We have several **mechanisms to enhance non-academic collaborations:**

At the *discipline level*, we have (i) organised impact and engaged research workshops; (ii) included impact and engaged research topics in research strategy days; (iii) allocated workload strategically to give staff time to work on impact; (iv) granted study leave to support impact activities; (v) allocated discipline-level funds to support impact.

At the *college and university level,* we are supported by (i) colleagues in IIB, including an engaged research officer (see Section 1); (ii) Impact Accelerator Awards (11 awards totalling £108k since 2014); and (iii) university consultancy services that support up to 10 days' consultancy per annum (contracts worth £1.73M since 2014); and (iv) over £60k of funding from the university to enhance impact activities (e.g., stakeholder workshops).

This focus on increasing our impact beyond academia has borne fruit and is evident in the wide range of impact activities and our broad range of external stakeholders.

Non-academic collaborations include stakeholders at local, national, and international level as well as industry. Our staff are actively working with:

- *local and national government bodies* (NHS trusts in Devon, Cornwall, and Kent, Equality Challenge Unit, Health Education England, ACAS, Behavioural Insights Team, Government Equalities Office, Plymouth City Council, National Crime Agency, Ministry of Defence, Dstl, Devon & Somerset Fire Service, the Met Office, Public Health England, Animal & Plant Health Agency, Department of Transport). For example, *Sweetman* evaluated the effectiveness of unconscious bias training for the Equality Challenge Unit.
- *charities and NGOs* (NSPCC, Child Injury Trust, Devon and Dorset Drug and Alcohol Services, The Honest Truth, Drinkaware, Innovations in Dementia, Howard League for Penal Reform, Stresscare. Age UK, BRAC Uganda). For example, **Hogarth** has worked with drug services to evaluate programmes to reduce violence among drug users in prisons.
- *pharmaceutical and biotech companies* (Beckley Canopy, GlaxoSmithKline, Janssen, MRC-Agri Ltd, Awakn Life Sciences, GW Pharmaceuticals). For example, **Morgan** is working with GW Pharmaceuticals to develop medical cannabis training for physicians in primary and secondary care in the UK.
- *animal welfare/conservation NGOs & businesses* (RSG Beekeeping & Training Centre, Centurion, Center for Whale Research USA, Ulster Wildlife Trust, Red Squirrels Survival Trust, Red Squirrels Trust Wales, Wildwood Escot, Scottish Wildlife Trust, Vincent Wildlife Trust, Game & Wildlife Conservation Trust, Reneco, Rothanstead Research, Songbird Survival, Dairyco, South Devon AONB, Jawaharlal Nehru Tropical Botanical Garden, Wildfowl & Wetlands Trust). For example, **Leaver** is working with UK-based Red Squirrel organisations to conserve populations
- *technology firms* (Activinsights Ltd, Oviva, Psynovigo, SUVO technology, Softbank Robotics, Minddistrict, PowerRuby Ltd, Xenzone.com, Netmums, P1vital, IESO, auDEERING, Monsenso, MindDistrict). For example, **O'Mahen** worked with netmums to introduce self-help training for new mothers with postnatal depression.
- *finance and consulting firms* (UBS, Ernst & Young, Polaris Consulting). For example, **Ryan** has worked with UBS on leadership training for female executives.
- the *media & cultural sector* (BBC, Royal Albert Memorial Museum, Libraries Unlimited, Watershed Bristol, Centre of the Cell, Birmingham Science Museum, London Riverbanks Zoo, Edventure Children's Museum, Virginia Aquarium). For example, *Rutland* and *McGuire* are working with several museums to remove barriers to STEM engagement in children from diverse backgrounds.
- *learned societies & professional bodies* (British Veterinary Association, Royal College of Psychiatry, Royal Society). For example, **Ryan** is working with the British Veterinary Association to drive greater inclusivity in organisational policies.
- *international agencies* (WHO, UN, UNESCO, UNICEF, Australian Passport Office, Workplace Health & Safety Queensland). For example, **Williams** has contributed to UN and WHO guidelines on the safe treatment of refugee children.

During the REF period, our staff have also made **significant contributions to the public sector and society**, including

- *serving on the advisory/governing boards* of governmental and non-governmental organisations, including the Alzheimer's Society (*Clare*), Howard League UK (**Williams**), UK Ministry of Justice (**Williams**);
- *providing evidence* to All Party Parliamentary Groups (e.g., Fit and Healthy Childhood [**Lawrence**], Drugs [**Morgan**]);
- *advising* the Department of Health on national workforce training in therapy for bipolar disorder (**Wright**) and the local NHS Core Commissioning Group on mental health strategy (**Dunn**);
- *advising* Exmoor National Park on gamebird releases (**Madden**) and the South Devon Area of Outstanding Natural Beauty on their 5-year management plan (**Hempel**);
- *serving as expert members* for NICE on antenatal and postnatal mental health (**O'Mahen**), depression in adults (**Watkins**), dementia (*Clare*), and mental health treatment of prisoners (**Williams**);
- *leading working groups* on Increasing Access to Psychological Therapies for older adults (*Laidlaw*); and
- *leading a Foresight report* on the Future of an Ageing Population (*Laidlaw*);
- *working* with the Government Equalities Office on guidance for employers on evidence-based actions they can take to increase gender equality in the workplace (**Ryan**).

2. Contributions to the discipline and academic community
During the REF period, our researchers have been awarded 11 prizes, 8 research fellowships, been awarded fellow status in 6 learned societies, have held positions in 14 grant funding bodies, contributed to 11 learned societies, served on the editorial boards of 59 journals, given 82 plenaries and keynotes, and contributed to the organisation of 22 conferences. Below we highlight some of our key contributions.

(i) **Prizes:** 11 prizes, including the British Psychological Society (BPS) Distinguished Contribution Prize (**Haslam**), the BPS Barbara Wilson Prize (**Williams**), the EASP Mid-Career Award (**Ryan**), the Fisheries Society of the British Isles (FSBI) Medal (**Croft**), and the Christopher Barnard New Investigator Award, ASAB (*Brent*).

(ii) *Fellowships*: 8 research fellowships, including an EPSRC Innovation Fellowship (**Koschate-Reis**), a Marie Curie International Fellowship (*Civile*), a BA Mid-Career Fellowship (*Adlam*), and two Leverhulme Early Career Fellowships (*Brent, Ellis*). Our staff became fellows in six learned societies, including the BPS (**Williams**), the Royal Society of Arts (**Morgan**), the Society for the Psychological Study of Social Issues (*Rutland*), and the Academy of Social Sciences (*Clare*).

(iii) **Positions on grant funding bodies**: positions in 14 funding bodies, including the BBSRC (**Hempel**), ESRC (**Barreto**, *Rutland*), Alzheimer's Society (*Clare)*, Wellcome Trust (**Barreto, Morgan, Watkins**), the MRC (**O'Mahen**), the EPSRC (**Levine**), and several EU schemes (**Barreto, Hempel**). Staff contribute to panels for the EPSRC, NIHR, MRC, and the ESRC Peer Review College, and review for a range of national and international funders including the Leverhulme Trust, the NSF, and the Australian Research Council.

(iv) *Positions in learned societies*: Staff made contributions to 11 learned societies. For example, **Barreto** was President of the European Association of Social Psychology (EASP), **Morgan** was on the Council of the British Association of Psychopharmacology, **Madden** serves as Meetings Secretary for the ASAB, and **Hempel** holds posts in the International Society for Neuroethology. *Laidlaw* is the Co-Chair of the Committee of Trainers in Clinical Psychology for the BPS, while **Williams** is the Lead of the Division of Neuropsychology's Executive Committee for Internationalisation. *Doyle* is on the Steering Committee of the Sexual and Gender Minority Health section of the European Public Health Association, while *Rutland* served on Society for Research on Child Development committees (Equity and Social Justice in Childhood, Diversity and Intergroup Relations).

(v) **Journal editorial boards**: During the assessment period, staff had significant editorial roles at major journals: **Smith** was Chief Editor at *Euro J Soc Psychol* (2018-2020). Staff were Associate Editors at *Addict Res Theory* (**Hogarth**); *Ageing & Mental Health* (**Laidlaw**); *Anim Behav (**Brent**); Beh Cogn Psychother* (**Wright**); *Behav Ecol* (**Fawcett**); *Behav Ecol Sociobiol* (**Croft**); *Behav Res Theory* (**Watkins**); *Brit J Clin Psychol* (**Dunn**); *Brit J Soc Psychol* (**Livingstone, Rabinovich**); *Cannabis & Cannabinoids* (**Morgan**); *Coch Db Syst Rev-Dementia* (**Clare**); *Curr Opin Psychol* (**Faber**); *Evol Ecol* (**Higginson**); *Insects* (**Hempel**); *J Concussion* (**Williams**); *J Exp Psychol-Anim L* (**McLaren**); *Leadership Quart* (**Haslam, Ryan**); *Neuropsychol Rehabil* (**Adlam, Clare**); *PLoS One* (**Karl**); *Q J Exp Psychol* (**Hogarth**); *Roy Soc Open Sci* (**Darden**); *Sci Rep* (**Morgan**); and *Soc Personal Psychol Compass* (**Livingstone**). Staff served on the editorial boards of another 36 journals and were special issue guest editors for 15 journals. Staff are series editors for Wiley (**Rutland**) and SAGE (**Haslam & Smith**).

(vi) **Plenaries & Keynotes**: 82 plenaries & keynotes, including the International Associative Learning Symposium Inaugural Mackintosh Lecture (**McLaren**); International Primate Society (**Croft**), European Congress of Psychology (**Watkins**); Alzheimer's Disease International Conference (**Clare**); European Psychiatric Association (**Morgan**); European Congress of Behavioural and Cognitive Therapies (**Laidlaw**); International Brain Injury Association (**Williams**); the BPS Perinatal Conference (**Karl, O'Mahen**).

(vii) **Conference organisation**: Staff contributed to the organisation of 22 national and international conferences. We hosted the 2016 International Society for Behavioural Ecology congress (**Brent, Croft, Darden, Fawcett, Hempel, Higginson, Leaver, Madden**), the 2016 EASP Summer School (**Livingstone, Sweetman, Smith**), the 6th International Conference of Poeciliid Biologists (**Darden, Croft**), and the Fisheries Society of the British Isles 50th Anniversary Symposium (**Darden**). Other notable contributions include: Program/Scientific Committee, EASP General Meeting (**Gobel, Ryan**), International Society of Political Psychology conference (**Livingstone**), Alzheimer's Disease International Conference (**Clare**); International Ketamine Conference (**Morgan**); World Congress of Cognitive Therapy (**Watkins**); World Congress of Behavioural and Cognitive Therapies (**Laidlaw**), International Congress of Entomology (**Hempel**); Society for Personality and Social Psychology (**Gobel**), SRCD workshop on Equity and Justice in Developmental Sciences (**Rutland**).

(viii) **Best paper awards**: 9 best paper awards, including the George C Williams Prize (2016; **Fawcett, Higginson**), Best Policy Oriented Paper from Engineering & Water Resources Institute (2016; **Smith**), the Otto Klineberg Best Paper Award, SPSSI (2015; **Sweetman**), and the Wegner Theoretical Prize, SPSP (2018, **Faber**).

Summary
Our research strategy since 2014 has produced a research environment that has nurtured an increase in the scale, quality, and profile of our research. Our policies and structures, and our focus on recruiting the very best researchers, and providing a supportive environment that allows all staff to thrive and progress, will ensure that we will continually assess, improve, and sharpen our research profile and impact in the long-term. We are confident that our reputation for world-leading research and impact will continue to grow.