

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

Since REF2014 we have conducted a strategic review of psychology that provides a vision for the next ten years, underpinned by clear business objectives linking growth in teaching with planned research growth. Collaborative working within our newly constituted Psychology Planning Group of senior staff allowed us to design newly refurbished and dedicated space in line with our vision for research. Capitalising on this success, we developed a **Centre for Psychological Research (CPR)** to cohere the strategic direction and focus of research and impact. The centre is led by two co-directors, **Burgess**, Research Lead (RL) for the team and **Wilmut**, Reader in Psychology. The CPR encapsulates the shared vision of the 22 academic staff in psychology and provides a dynamic and sustainable unit with clear strategic aims for further growth and increase in research capacity. Of the 22 staff, 17 (77%; 15.9 FTE) have significant responsibility for research (SRR) within UoA4.

1.1. Structure of the unit. The CPR is located in the Department of Psychology, Health & Professional Development in the Faculty of Health & Life Sciences (HLS). The two co-directors oversee four research groups: **Developmental Psychology**; **Cognition & Cognitive Neuroscience**; **Applied Social Psychology**, and **Prevention Science**. Four assistant directors (**Davies**, **Gonzalez-Gomez**, **Kumar**, **Pilling**) lead specific initiatives. Academic staff work together with Postgraduate and Postdoctoral research assistants and 11 current PhD students across the four research groups (see 1.3). A post-graduate tutor (PGT) (*de Abreu*, returned to UoA23) runs the doctoral training programme (DTP) for psychology.

1.2. Strategic Aims and Research Objectives

We have continued to develop and build on our strengths since REF2014, in line with five key objectives.

1: To continue to **support areas of research** that are, or have demonstrable potential to be, recognised as internationally excellent or world leading.

We have made four new strategic appointments, funded by the university Central Research Fund (CRF), to consolidate each research group. Early Career Research (ECR) research fellows (RF) joined the *Applied Social Psychology* group (**Baimel**) and the *Cognition & Cognitive Neuroscience* group (**Afonso**). We have invested in a new **Prevention Science** area by employing a permanent lecturer (**Davies**) and half-time Professor of Community Psychology and Public Health (*Foxcroft*, returned to UoA3). Our strategy has been to focus mainly on appointing ECR fellows who have a small teaching load, enabling them to consolidate their research. The success of these appointments is reflected in high levels of productivity (3-5 outputs being returned by each of these staff) and in the promotion of two RFs to permanent lectureships (**Afonso**, **Gonzalez-Gomez**). Examples of the progress and achievements of these new staff are provided in 1.3 and other sections.

We plan to further strengthen our research groups and links between them with future appointments of at least two ECR RFs, funded partly by the CRF and from growth in BSc and MSc provision in psychology. In making new appointments there will be continued focus on the potential for research excellence.

2: To plan for, design and move into **purpose-built new space** for psychology, with modernised labs and new equipment to facilitate expansion of our research.

Previously our premises were fragmented across the campus. Substantial work to renovate the Sinclair Faculty Life Sciences building was funded by the university, supported through a £4,100,000 HEFCE grant. c.£2,700,000 was spent to create over 1000m² of unified office, teaching and research

facilities for Psychology. This opened in December 2018, providing over 150m² of new Psychology research space plus a 10m² library of psychological tests. Over £60,000 has been spent to upgrade equipment, including a new EEG system and infant eye-tracking cameras. The new space has transformed opportunities for staff collaboration and research and for engaging research participants, as detailed in 3.2. For example, the new 45m² BabyLab includes specialised rooms for eye-tracking and head-turn preference studies. A welcoming lobby and play area is inviting for parents and their infants and has been instrumental in participant recruitment and retention in a longitudinal study on language development that included prematurely born infants and those from lower socioeconomic backgrounds. The new facilities enabled **Gonzalez-Gomez** to successfully study 76 infants, with four visits each before the age of one year.

Further support and development of our research space and facilities over the next 5 years will be achieved through continued staff training, technical support and application for departmental funds and central university capital bids on an annual basis. This will help to refresh our library of psychological tests with latest test editions and keep equipment and software updated. In our specialist Writing Lab, for example, updates for graphics tablet and key-stroke logging software enable state-of-the-art data capture and analyses, supporting **Afonso** to share data with her international writing research collaborators.

3: To engage in and develop **academic and industrial collaborative partnerships**, locally, nationally and globally that support research, innovation and knowledge exchange.

Psychology staff have developed and capitalised on opportunities both within Brookes and externally to develop a range of productive collaborations. See section 4 for examples of the nature of these and their outcomes. Our new space and co-location of staff have fostered new internal partnerships both within the CPR and with other staff within the renovated Life Sciences building. These links have been facilitated by the University Research, Innovation and Knowledge Exchange (RIKE) networks. For example through the 'Children & Young People' network **Barnett** has a new collaboration with colleagues in the Department of Biological and Medical Sciences' new Centre for Functional Genomics; this involves the preparation of funding applications to examine the genetic contribution to motor coordination difficulties in young people.

Our new research space has also been utilised to host regular and special events. In particular our research seminar series and monthly 'Meet the researcher' workshops (attended by an average of 35 local visitors) have fostered collaborations with local charities, nurseries and parent groups. These have been valuable for raising our research profile locally and increasing recruitment to studies in our BabyLab. Psychology staff also capitalise on Oxford Brookes membership of the Oxford Academic Health Partners. **Gonzalez-Gomez** collaborates with colleagues from the John Radcliffe Hospital, part of Oxford University Hospitals NHS Foundation Trust, in her work on prematurely born infants. This partnership is critical for ongoing recruitment to studies in the BabyLab and is reflected in co-authorship on two journal publications.

Our new facilities include expanded office space, increasing our capacity to accommodate contract and visiting researchers. Since 2014 over £15,000 in university and departmental funding has supported staff to host visiting researchers from Brazil, Israel and Portugal. For example, **Connelly** hosted two visits from a Portuguese post-doctoral researcher; this resulted in the production of a co-authored paper at the Society for the Scientific Study of Reading conference and a paper published in 'Learning and Individual Differences'. At least £5,000 each year has supported staff travel to meetings and conferences to develop and consolidate partnerships in the UK and overseas. For example, **Davies** was funded to attend the European Society of Prevention Research, enabling her to consolidate partnerships in Spain and Brazil, leading to the preparation of a paper on alcohol consumption patterns and collaboration on a new project about youth drinking (see section 4.1 for further examples).

Support to maintain existing and establish new partnerships over the next 5 years will be achieved through: continued involvement with the university RIKE networks, engagement with departmental and university funding opportunities, our programme of seminars and workshops, and hosting of

conferences. For example **Connelly** is the invited chair of the committee of the British Dyslexia Association International Conference 2021, to be hosted at Brookes (now online).

4: To support activities that maximise the **impact and dissemination** of our research for the benefit of the students and staff of the University and our communities, whether local, regional or global.

A new REF Impact Case Study (ICS) by **Connelly** and a continuing ICS by **Barnett** have been submitted. Examples of how activities have been supported are provided in 3.3. Psychology staff have successfully bid for over £40,000 through the CRF 'Research Excellence Awards' to maximise research impact. For example, **Connelly** used funds to assist with a research visit to the US and Canada and time for writing reports and to bid for future grants. **Barnett** used funds to conduct development and pilot work for a new assessment tool, with a larger project then funded by Pearson Ltd. Presentations of these ICSs to all psychology staff provided examples of ways to develop impact. Drawing on her experience of evidencing impact, **Barnett**, together with a Professor of Health Sociology, ran a series of Faculty workshops to raise awareness of different types of impact by reviewing previous REF ICSs. Time was given for colleagues to work together and plan how to achieve impact with their own research.

Our strategic plan for 2020-2025 includes the identification of areas in which to build dissemination and impact (see 4.3). Whilst our current REF ICSs are based on the work of individual members of staff collaborating with external partners, our future strategy is to build a team approach, supporting colleagues to work together and integrate their research to realise stronger impact. This strategy is supported by involvement of the RL and co-director of the CPR (**Burgess**) in discussing aspects of impact in the early development of staff research plans. In addition, in her role as assistant director **Gonzalez-Gomez** will lead a specific initiative on developing research impact in the team.

5: To provide opportunities for the **development of researchers** at all career stages and to enable students and staff to participate in and benefit from the research of the Faculty.

Our position in the Faculty of HLS provides opportunities to participate in and benefit from research in other disciplines (see 4.1). In particular, we are growing our interdisciplinary Prevention Science group, through close collaboration with the Oxford Institute of Nursing, Midwifery & Allied Health Research (OxINMAHR; UoA3). There has also been a focus on development opportunities at all levels, from PhD students to senior professors (see 2.1). For example, we have seen the promotion of two of our ECRs to lectureship positions (**Gonzalez-Gomez, Afonso**). Strategic decisions to appoint and support ECRs has been particularly successful. For example **Afonso** was supported through mentoring to progress from an ECR RF and to design and develop a new Writing Lab. This support, together with our investment in research facilities and a CRF International Collaborative Research and Travel Award (£1,464) enabled her to substantially strengthen her experimental work, international collaborations, grant applications and publications. **Afonso's** substantial progress is evidenced by selection by the university to put forward a UKRI Future Leaders Fellowship. Although unsuccessful, she has continued to produce strong publications (with 5 papers in the REF), largely through her strong international collaboration with colleagues in Spain.

Over the next five years further development opportunities will be available to staff as the management and leadership structure of the CPR is reviewed annually, with staff encouraged to consider new roles to develop research, innovation, knowledge exchange and impact.

These five main objectives have guided our Department 5-year rolling Research & Knowledge Exchange strategy. Staff also produce individual five-year research plans, detailing planned publications, dissemination, impact and proposed funding bids. The RL ensures that research-active staff are supported and mentored appropriately to develop a plan aligning with the research objectives of the team. All staff are included in discussions of our mission and objectives and have contributed to developing our research strategy for 2020 to 2025 through a number of all staff meetings and Away Days.

1.3. Research groups

The composition and work of our research groups is described below, with examples of developments and achievements taken mainly from our ECRs.

The **Developmental Psychology** group includes 6 researchers (5.1 FTE) (**Barnett, Gonzalez-Gomez, Harris, MacLean, Stuart, Wiggs**), 2 post-docs (*Cook, Vanzan*) and 4 PhD students. The three main strands of research are in: Cognitive & Social Development, Language & Literacy, and Developmental Disorders. There is particular expertise in the area of infant experimental work, psychometric approaches applied to test standardisation, assessment of sleep behaviour and literacy. Since the last REF, two new permanent lecturers have been appointed to this group (**Gonzalez-Gomez, Stuart**).

Gonzalez-Gomez, originally appointed as an ECR RF, has been supported to progress to a lectureship. Together with our investment in facilities, this has enabled her to substantially grow her work in the BabyLab and build capacity for future research. She made a successful bid to an ESRC/UKRI rapid response initiative to the Covid-19 pandemic (£209,257) to determine the effects of social distancing policies on children's language development, sleep and executive functions. Findings from an extensive questionnaire study have been shared with charities and local government, discussed with policy officials in the Department for Education and widely reported in the media.

The **Cognition & Cognitive Neuroscience** group has 5.0 FTE researchers (**Afonso, Kumar, Pilling, Rathbone, Wilmut**), 1 post-doc (*Wang*) and 2 PhD students. The four main strands of research are: Visual Cognition, Perception & Action, Writing, and Autobiographical Memory. Some work involves older adults and clinical groups such as Developmental Coordination Disorder (DCD), Dyslexia, Alzheimer's Disease and Myalgic Encephalomyelitis (ME). There is specific expertise in experimental design, data capture and analysis techniques.

Kumar, a senior lecturer and practising clinical psychologist, designed our new neuroscience labs for EEG/ERP and TMS. These facilities enabled him to obtain funding to investigate sensory processing and cognitive function in people with ME (£31,000, ME Research UK). A CRF Global Challenge Collaborative Research Award (£12,000) to study 'The effects of air pollution on children's development and mental health in India' enabled him to strengthen collaborations with health researchers from India and the UK. The work addresses a Global Challenge Research Fund priority area on air pollution.

The **Applied Social Psychology** group includes 5 researchers (4.8 FTE) (**Baimel, Burgess, Connolly, Kenward, Lonsdale**) plus *de Abreu*, 1 post-doc (*Hennelly*) and 3 PhD students. Staff investigate the way that individuals' beliefs, dispositions, actions and aspirations are intertwined with immediate social groups and the wider culture in which they are embedded. Topics range from **Burgess's** work on phenomenological investigations of pre-reflective experience and **Lonsdale's** examination of the social functions of music to **Connolly's** investigations of military Reservists and **Kenward's** surveys of public consciousness of environmental issues. There is considerable expertise in questionnaire design and the use of qualitative analyses of interview data.

Baimel's appointment as an ECR RF strengthens research in this group. **Baimel** has well-established international collaborations, including publications with colleagues at the University of British Columbia and the Max Planck Institute for Evolutionary Anthropology, Leipzig. With this strong network, **Baimel** achieved rapid research funding success with two grants from the John Templeton Foundation for his work on 'The greening of religions: A cross-cultural test of when, how, and with what consequences religious meaning systems are adapting to the social pressures of the climate crisis' (US\$91,000) and 'Causal inference and the role of formal education on religiosity' (US\$200,000).

We have invested in a new **Prevention Science** area by employing a permanent lecturer (**Davies**) and half-time Professor of Community Psychology and Public Health (*Foxcroft*). This is a new interdisciplinary research team with 2 PhD students and includes academic staff, postdocs and PGR students in other departments. Research focuses on the causes, consequences, and prevention of

poor physical and mental health. The team has particular expertise in designing and evaluating health behaviour interventions.

Davies, previously a PhD student at Brookes, then a Psychology Demonstrator for our team, took up a secondment as a lecturer to cover a period of maternity leave. This allowed her to consolidate her research and successfully apply for a permanent lectureship. **Davies** is rapidly building a strong research profile and extensive network of collaborators. She won funding for a project on 'Community and Hospital Pharmacists and E-cigarettes' (£49,733, Cancer Research UK). A CRF Research Excellence Award (£12,000) funded a pilot study to investigate whether drinker identities can be used to induce behaviour change, including an international interdisciplinary event for researchers to forge collaborative projects. This put her in a strong position to respond to the Covid-19 pandemic, contributing to the design of 'a pandemic special' version of the Global Drug Survey examining alcohol and other drug use across different countries during lockdown. The findings from this work have been extensively reported in the media (see 4.1). £11,750 in departmental pump-priming funds have also given **Davies** time to prepare publications, including most recently in the prestigious International Journal of Drug Policy.

2. People

We are committed to supporting psychology researchers at all levels.

Of the 22 staff in psychology, 17 (77%) have SRR through work-load hours for research with 15.9FTE entered in UoA4 (two researchers are also returned to UoA3 and UoA23). UoA4 comprises one ECR RF, one Lecturer, nine Senior Lecturers (SL; 5 women), three Readers (2 women) and three Professors (2 women). Overall, the team (by headcount) is 59% women, 59% under 50 years of age, 12% BAME and 88% are on permanent contracts. One female professor and one male SL have fractional posts (0.8FTE). The ECR RF is on a full-time two-year contract and one female professor is on a temporary 0.3FTE contract as part of a phased retirement.

2.1 Staffing strategy and staff development

We aim to recruit and retain researchers with the highest potential to achieve excellence in research, who can contribute to building and sustaining critical mass in our research groups and join supervisory teams for our PGR students. Our strategy has been to focus mainly on the appointment of early career staff and to support their development. During the assessment period two ECR RFs have been appointed to permanent lectureships. There have been four promotions from Lecturer to SL and one from Level 2 to Level 3 Professor. Overall, four women and one man have been promoted during the assessment period.

The University embraces the Concordat to Support the Career Development of Researchers at all levels. Training and mentoring are embedded for all staff and reviewed with the line manager through the Personal Development Review process.

Two **Psychology demonstrators**, including **Davies** (see 1.3) have had secondments into lectureship positions, providing them with the opportunity to work at a more senior level and develop their research.

Graduate research assistants (RAs) have been employed on various projects. Many have gone on to secure higher degrees and/or PhD posts or secured places on highly competitive clinical and educational psychology training courses. For example, **Barnett** had over 70 RAs from across the UK employed on a large test standardisation project. At least 10 of these have subsequently taken up such positions, supported by references from their work on this project.

Postdoctoral researchers are well integrated into the team and have many development opportunities. One of our postdocs (**Vanzan**) was on the supervisory team for a PGR student and was actively involved with the organising committee for the Annual Faculty Postgraduate Student

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Symposium. On completion of her project at Brookes she obtained a position with the London Advanced Therapies network at Great Ormond Street Institute of Child Health. Most of our postdocs have gone on to academic posts, including at Oxford and Birmingham Universities. Bridging funds have been available to support staff between contracts and this has been particularly important to maintain research during the Covid-19 pandemic. For example, the contract for a postdoc was extended and funded by Brookes for two months to ensure completion of a project when no additional external funding was forthcoming.

ECR research fellows – New appointments (**Afonso, Baimel**) have benefitted from the Brookes 'Your First Three Years' training and development programme. As mentioned above, **Afonso** has been supported through mentoring to progress to a lectureship and various schemes have supported her personal development and research activity. **Afonso** also designed the new space for our Writing Lab that has enabled her to substantially strengthen her experimental work (see 1.2 (5)). Positions on committees also provide experience of the wider research community; **Baimel** represents ECRs on the Faculty Research & Knowledge Exchange committee.

Lecturers are supported by senior staff through mentoring to develop research plans and apply for internal funding where appropriate. For example, **Stuart's** successful bid for a CRF Research Excellence Award (£19,500) enabled her to work with colleagues in the Writing Lab to develop a new assessment tool for education practitioners. As RL, **Burgess** supported **Kenward's** consideration of theoretical frameworks and pathways to impact in his new strand of research on public consciousness of environmental issues.

Senior team roles – mid-career staff have had opportunities to take up new research leadership and management positions, with mentorship from the Associate Dean for Research & Knowledge Exchange (ADRKE). **Burgess** took on the role of RL in 2018 after promotion to Reader, and in this role is co-director of the CPR. **Wilmut** also stepped up as co-director of the CPR. The interdisciplinary cross-faculty RIKE networks have offered further development opportunities. **Barnett**, previously RL, was encouraged to take on the role of co-lead of the 'Children & Young People' RIKE network; *Foxcroft* joined the steering group.

A variety of competitive university schemes have been available during the assessment period to support travel, collaborations, research activity and achievement of impact. Overall £95,000 has been awarded to psychology staff through the CRF 'Research Excellence' scheme (**Barnett, Connelly, Davies, Harris, Stuart, Wilmut**) and £24,000 through 'Collaborative travel Awards' (**Barnett, Kumar**). QR funding for Psychology is held by the RL, and bids can be made for pump-priming projects and other research activity; £12,000 was distributed in 2019-2020.

The RL compiles a summary of research activity within the unit every month, which is circulated to the Psychology team, Head of Department, Faculty Executive Team and Vice Chancellor. Together with the CRF Research Excellence Awards, this provides a way of recognising and celebrating the achievements of our colleagues.

2.2 Post Graduate Research students

We consider PGR students to be core to the future of our discipline. Since 2014 there has been £686,000 internal funding for studentships in our UoA DTP, including 10 through the University 150 Scholarship Scheme. We currently have 11 full-time PGR students in Psychology, 7 (64%) women and 4 (36%) BAME. Eight are from the UK, two from India and one from Saudi Arabia. Nine have studentships funded by the Faculty, one is funded from industry and one by the Saudi Arabian Cultural Bureau. One is interdisciplinary, with joint supervision with staff in Public Health. During the assessment period there have been 15 awards (13 female). 12 of these were studentships funded by Faculty QR/Intellectual Property income, two by the ESRC, and one by Health Education Thames Valley. Six were interdisciplinary, jointly supervised with staff in Education, Allied Health and Public Health. The number of awards has more than doubled since REF2014.

The PGT (*de Abreu*) has responsibility for admissions, fostering the training and professional development of students, and monitoring progress. Every student attends an annual review meeting

with the PGT and another member of psychology staff. This involves a review of work and discussion of plans for the following year. Students are encouraged to reflect on their progress and any issues arising. All psychology staff have undergone training for PhD supervision. Supervisory teams consist of two or three members of staff. Those less experienced are paired with more experienced as an apprenticeship model. For example, **Afonso** joined Professors **Connelly** and **Barnett** to supervise a PGR student (*O'Rourke*), as her research on writing was directly relevant to the project.

Our new Research Students' office is housed in the heart of the new facilities. Students meet regularly with their Director of Studies and/or others on the supervisory team. The PGT has a monthly 'Psychology Research Students Forum' to share and clarify procedural issues and to provide a space for students to present and discuss their research progress and future plans. One student explains "I've presented a few times at the research forums and it is always a helpful way to practice breaking down complex topics to be able to communicate in a clear way. Practising this skill has helped with other internal and external presentations, as well as in writing about my research."

PGR students participate in psychology seminars and research group meetings, as well as the Annual Faculty Postgraduate Student Symposium. They are encouraged and funded to attend conferences of relevant academic associations and to present papers when they are sufficiently advanced. Our students have presented papers at national conferences in the UK (e.g. BPS Annual Conference, BPS Developmental Section Conference, BPS Cognitive Section Conference, BPS Psychology of Education Conference, British Educational Research Association Conference; DCD-UK), at European conferences (e.g. European Conference on Developmental Psychology, European Early Childhood Education Research Association Annual Conference) and at international conferences (e.g. International Journal of Art & Design Education Conference, World Association of Sleep Medicine Congress, International DCD Conference). Our students have also been successful in gaining awards. For example, *O'Rourke* was awarded a Santander Research Scholarship (£500) to attend a conference on writing in Guadeloupe in 2019.

During the assessment period our PGR students have been successful in publishing first-authored work in peer reviewed journals: *Armed Forces & Society*, *Journal of Beliefs & Values*, *Journal of Research in Childhood Education*, *Journal of Early Childhood Literacy*, *Journal of Art & Design Education*, *Journal of Political & Military Sociology*, *Human Movement Science*, *British Journal of Occupational Therapy*, *Cognitive Neuropsychology*, *Journal of Learning Disabilities*, *Child: Care, Health and Development*.

On completion of their PhDs, three students continue to work at Brookes, *O'Rourke* as a Psychology Demonstrator, *Veldhuis* as a lecturer and *Cook* as a postdoc RA with **Wiggs**. Other students have gone on to lectureships at University of Surrey, Brunel University, University of Northampton, and Middlesex University London. Two are postdocs at Oxford University and one is a Trainee Psychological Wellbeing Practitioner at Nottingham Healthcare NHS Trust. Some staff continue to work with their ex-PhD students, **Barnett** works with an ex-student at Brunel University on several projects; they were awarded £79,999 from the Royal College of Occupational Therapists with **Barnett** as CI.

2.3 Promotion of equality, diversity and inclusion (EDI)

The CPR supports the Oxford Brookes initiatives in equality, diversity and inclusion to attract and support staff and students from different groups. The psychology team has had similar numbers of men and women at each career level (overall 59% women). Women have also been as likely as men to apply for and to achieve promotion, assisted by specific promotion mentoring. We celebrate the diversity of staff, who originate from different countries (England, Scotland, Italy, Spain, Portugal, India, Mexico and Canada) and have different ethnic backgrounds (12% BAME). We have supported staff and students in their choice of gender identity and our staff and students have included individuals with disabilities and those from the LGBTQ+ community.

With over a third of our staff (6/17) in senior positions (Reader/Professor) and 41% over the age of 50, we aim to recruit more early career staff to allow for appropriate succession planning. Eight staff (4 women) have a child/children of school age; three have taken paternity leave and three maternity

leave during the assessment period. A range of measures have been taken to support research on return from leave. For example, the Faculty funded a part-time RA for 6 months (£5,897) to continue work on a longitudinal study during maternity leave. Post-maternity leave, staff have been given additional research hours to maintain their research profile and capability. Psychology has also supported temporary part-time working for three members of staff to work around family and caring commitments. Flexible working arrangements are supported, with home working common practice (even before the Covid-19 pandemic restrictions). There is consultation in the team regarding the scheduling of meetings and research seminars, considering family and other commitments of staff. For example, our research seminars take place during the day rather than early evening after normal work hours.

The management and leadership team of the CPR has equal representation in terms of gender (3 men, 3 women), includes staff from BAME groups, and are mostly younger in age (below 50). The RL is male and the PGT female. Of our six specialist research laboratories, three are led by women and three by men. 60% of the outputs submitted to REF2021 are from women researchers; 68% are from younger staff (under 50 years) and 40% are from staff with school-aged children. These proportions are all in line with the ratios of staff in each category. University monitoring also shows no systematic bias in our return of outputs by protected characteristics. All staff are encouraged to apply for internal research funding; during the assessment period all staff have received Departmental funds supporting attendance at conferences/training events. Larger University Awards have been equally received by men and women, and by BAME colleagues.

3. Income, infrastructure and facilities

3.1 Research income

Income spent over the assessment period totalled £1,513,986, an increase of over £300,000 from REF2014. Our research has been supported by a wide range of funding bodies including research Councils (ESRC), Charities (Leverhulme), government and local authorities (MoD) and industry partners (Hogrefe Ltd.). Of particular note is the ability of the team to respond quickly to capitalise on funding opportunities. Recent funds awarded (not yet all spent) are listed below for each research group, indicating the success of our research strategy.

Developmental Psychology: Total awarded £1,042,139

- 2020 ESRC (£209,257) The effects of social distancing policies on children's language development, sleep and executive functions (PI: **Gonzalez-Gomez**).
- 2019 Royal College of Occupational Therapists (£10,000 to Brookes from £79,999) Writing in the digital age (CI: **Barnett**).
- 2018 Leverhulme Trust (£15,017) Supporting early literacy development in deaf children (PI: **Harris**).
- 2018 Pearson Ltd (£21,000) Development of Movement ABC-3 (PI: **Barnett**).
- 2017 Hogrefe Ltd. (£548,000) UK standardisation of the Intelligence & Development Scales (PI: **Barnett**).
- 2017 NIHR (£160,865 to Brookes from £2,326,741) Changing Agendas on Sleep, Treatment and Learning in Childhood Epilepsy (CASTLE) (CI: **Wiggs**).
- 2015 Leverhulme (£78,000) Early language development under difficult circumstances (PI: **Gonzalez-Gomez**).

Cognition & Cognitive Neuroscience: Total awarded £88,582

- 2020 MoD (£5,000 to Brookes from £96,240) SENTIENT, Symbiotic Cognitive System for Intelligent Decision Support (CI: **Kumar**).
- 2020 ME Research Ltd (£31,000) Investigating sensory processing and cognitive function in people with ME (PI: **Kumar**).
- 2016 Leverhulme Trust (£52,582) Movement planning during reach-to-grasp tasks across the lifespan (PI: **Wilmot**).

Applied Social Psychology: Total awarded £792,604

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2020 EU Horizon 2020 (£300,000 to Brookes from c.€3,000,000) Networking the educational world – Across boundaries for community-building (CI: **de Abreu**).

2020 ESRC (£308,000) Team cohesion in task-organised Covid-19 NHS response teams (PI: **Connelly**).

2020 John Templeton Foundation (£73,720/\$91,000) The greening of religions (PI: **Baimel**).

2020 John Templeton Foundation (£7,000 to Brookes from \$200,000) Causal inference and the role of formal education on religiosity (CI: **Baimel**).

2017 DHCSTC UK MOD (£103,884) Support to the Families of Reservists (PI: **Connelly**).

Prevention Science:

Recent funding awards for this interdisciplinary group are included in UoA3. They include the following with **Davies** as CI, totalling £94,315.

2019 Cancer Research UK (£49,733) Community and Hospital Pharmacists and E-cigarettes

2017 Cancer Research UK (£44,582) Knowledge, attitudes and current practice of health professionals regarding the use of e-cigarettes in cancer survivors.

Various initiatives since REF2014 have been instrumental in achieving this increase in income within an increasingly competitive climate. New partnerships have developed within the team to produce strong grant submissions drawing on complimentary skills. For example, **Barnett** and **Stuart** have worked together on a project funded by Hogrefe Ltd. **Connelly** is partnering with Faculty colleagues in OxINMAHR for work investigating Covid-19 NHS response teams. Several staff are part of large research networks. **Wiggs** is part of the NIHR funded CASTLE Project working with partners in Australia, London, Liverpool, Exeter and Bangor, North Wales. **Gonzalez-Gomez's** partnership with four other UK institutions enabled her to submit a strong application to the ESRC/UKRI to investigate the impact of the restrictions relating to the Covid-19 pandemic on aspects of child development. **Baimel's** international collaborations resulted in successful awards from the Templeton Foundation. Most recently, **de Abreu's** collaborations helped form an international team, comprising 14 institutions from nine different countries awarded c.€3,000,000 in EU Horizon 2020 funding to work on a project to enhance the lives of migrant children and young people.

3.2 Research facilities and equipment

The substantial investment in new facilities and equipment for psychology has been outlined above (sections 1.2/1.3), with examples of achievements arising from their use. Most of the lab work in the **Developmental Psychology** research group takes place in the suite of specially designed rooms in our new **BabyLab**. This is run by **Gonzalez-Gomez** with a major focus on language development.

Increased research space accommodates labs for the **Cognition and Cognitive Neuroscience** research group. **Kumar** took the lead to design and run the neuroscience labs, The **EEG/ERP Lab** houses a state-of-the-art EEG recording facility to study aspects of cognition in healthy adults and clinical populations. The **TMS (Transcranial Magnetic Stimulation) Lab** is being used to investigate the role of different parts of the brain in attention, memory and motor planning. The **Visual Cognition Lab**, designed and run by **Pilling**, is darkened and sound attenuated and has specialist equipment for accurate stimulus calibration on computer monitors. This has enabled **Pilling** to conduct work published in the journals Memory & Cognition, Perception, and Visual Cognition. The **Writing Lab**, designed and run by **Afonso**, houses a range of equipment and specialist software to record and measure handwriting and keyboarding behaviour. The **PuMA (Perception & Motion Analysis) Lab**, designed and run by **Wilmut**, houses state of the art 3D motion analysis equipment. Previously, **Wilmut's** work required hiring a movement lab in a local hospital, which was expensive, restrictive and less convenient for staff and research participants. The PuMA Lab has enabled her to undertake significant projects on site including completion of a Leverhulme Trust funded project on the development of motor skills through the lifespan resulting in two publications in Psychology & Ageing. It has also provided space for graduate student projects, including a visiting PhD student from Germany, which have resulted in journal publications in Experimental Brain Research and Frontiers in Psychology.

New interconnected **Social Psychology Labs** are specifically designed for enabling sensitive interviews, running focus groups and observational studies. Recent capital investment is being used

to install high quality video conferencing equipment to allow focus groups to be run in the lab and viewed concurrently from other rooms, opening up new research opportunities.

The new facilities include an open-plan office for 14 PGR students and a dedicated room for contract and visiting researchers. These allow for further growth and flexibility to accommodate staff on new research projects. For example, 6 part-time RAs were accommodated for the large Hogrefe Ltd. funded project. The new premises also include five new staff offices, and a room for the Psychology Demonstrator team (who support staff and student research, as well as teaching). There is also a new digitally enabled and flexible teaching lab providing spaces for collaborative work underpinned by a suite of high performance laptops for 50 people. We use this to host our regular seminar series as well as talks for the public. For example, in our 'Meet the Researcher' events the space is used to accommodate a play area so that parents/carers can attend with babies and young children.

Previously the team was fragmented across the campus. In our new premises, the co-location of all staff, researchers and PGR students and the close proximity of offices, labs, meetings rooms and communal social space brings huge benefits in terms of team cohesion and opportunities for collaboration and support. Co-location and the elements of flexible design have also brought immense gains in terms of optimum use, time saving and efficiency, particularly for fitting in research alongside other commitments.

3.3 Infrastructure to support impact

University level funding schemes have specifically focused on supporting the development of research impact, as mentioned above. For example, a CRF Research Excellence Award supported **Connolly** to work with colleagues from other UK universities and abroad. As shown in his ICS, this enabled a quick response at the start of the Covid-19 pandemic, when he was asked to draft guidance for Army Reservists and their families. A similar award for **Barnett** included funding for RA support to develop data on impact and funding to travel to Shanghai for development work in China to extend the reach of her work, as reported in her ICS. The appointment of a senior professor as a University Impact Champion and investment in Impact Officers have provided support through the University RIKE networks, with interdisciplinary impact study days arranged for staff at all levels (including PGR students).

Faculty level training, supported by University Impact Officers, has been run by an author of one of our REF2021 ICSs (**Barnett**) together with a Professor of Health Sociology. This series of workshops has helped to raise awareness in the team of different types of impact and provided time for colleagues to work together and plan how to achieve impact in their own research (see 4.3). There has also been staff training on using a 'Tracker' system to record the impact of staff research.

An Associate Director of the CPR, **Gonzalez-Gomez** has responsibility for overseeing and supporting the development of impact and considering how staff can best work together to realize impact. For example, a successful bid led by **Stuart** for a CRF Research Excellence Award (£19,500) draws on expertise from our Developmental Psychology and Cognition & Cognitive Neuroscience research groups to develop assessment tools for individuals with writing difficulties. The RIKE networks are supporting this work through the development of new partnerships with teachers as beneficiaries, literacy charities, All Party Parliamentary Groups and other policy-makers to enhance future impact.

Central to our approach to supporting staff to realise the impact of their research is the involvement of the RL (**Burgess**) working in partnership with the appropriate Principal Investigator, Faculty ADRKE and the University's Research & Business Development Office. Together they ensure that the impact of research is at the core of all project planning, realisation and dissemination.

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

4.1 Research collaborations

We view collaboration as critical to our work to develop productive partnerships locally, nationally and globally and key to building our research capability. Examples have been shown in 1.2(3) and

Unit-level environment template (REF5b)

throughout this document. Most staff collaborate with colleagues in other UK universities, evidenced by joint publications and funding awards. Further key examples of collaborations are provided here from across our research groups.

Several staff **within the CPR** work together on projects and 10% of our submitted outputs are the result of internal collaboration. **Barnett** and **Wilmot** have over 10 co-authored publications on motor development and DCD in the last 5 years. Some collaborations emanate from co-supervision of and joint publication with a PGR student. For example **Burgess** and **Connelly** supervised the PhD of *Phillips* on beliefs about military veterans and published three papers from this work in 'Armed Forces and Society', the 'Journal of Beliefs and Values' and the 'Journal of Political and Military Sociology'.

Our position **in the Faculty of Health & Life Sciences**, location in the Life Sciences building and involvement in University RIKE network events have all supported interdisciplinary work across Oxford Brookes. For example, **Wiggs** worked with a Faculty member and Professor of Primary and Community Care to jointly supervise the PhD of *Cook* on parental help-seeking behaviour relating to child sleep. This work was published in the journal 'Child: Care, Health & Development'. **Connelly** is working with the Director of OxINMAHR on an ESRC funded project (£385,000) to investigate team cohesion in task-organised Covid-19 NHS response teams.

Well-developed **government, industry and charity partnerships** have resulted in substantial and impactful research, particularly as reflected in our two ICSs. **Connelly** has strong links with the Armed Forces in the UK MOD at senior levels as well as with UK Armed Forces charities and the UK Armed Forces Families Federations. He also has links with senior personnel and researchers in the Canadian, US, Australian and Israeli Departments of Defence. **Barnett** has a long-standing partnership with the international test publisher, Pearson with whom she has published movement and handwriting assessments. More recently, **Barnett** has worked with the test publisher Hogrefe Ltd., based in Oxford. They have funded a 3-year project (£548,000) to undertake the UK standardisation of a developmental assessment tool.

International partnerships are promoted and supported by the University through the RIKE networks and funding for travel and collaboration. The majority of staff have international collaborations, evidenced by published papers and grant applications. In our submitted outputs, 60% are the result of international collaborations. The extensive international collaborations of our ECR RfFs have been mentioned earlier. Many senior staff also work with colleagues overseas. For example **Rathbone** has a number of international collaborators in France, Sweden and Denmark in her work on autobiographical memory. **Wilmot** has fruitful collaborations with colleagues in Australia; this has helped expand and develop new work in the field of DCD.

Many staff are involved in **inter- or multi-disciplinary research**, recognising the value this brings to addressing complex research questions. Over 30% of our submitted outputs involved interdisciplinary collaboration. For example, **Harris** collaborates with colleagues in education on deaf children's literacy. **Wiggs** has collaborations with colleagues in medicine (paediatrics, neurology), allied professionals (occupational therapists) and clinical psychology services on a number of projects concerned with sleep problems.

Staff enthusiastically and regularly take part in a range of events to engage with our local communities and the public. Often working together with undergraduate and PGR students, some activities take place through formal outreach and public engagement events organised through the Brookes Public Engagement (PE) Network. For example, the BabyLab regularly runs a stall at the Oxford Brookes Annual Science Bazaar (2014-2020). The team have also been involved in PE activities with Oxford University, for example running activities at the Curiosity Carnival (part of the European Researchers' Night event) in Oxford in September 2017. At this event **Gonzalez-Gomez** was part of the Living Library at the Weston Library (part of the Bodleian Library) and 'taken on loan' by people interested in hearing about her research on language acquisition in babies. **Davies'** work on alcohol consumption has received considerable media attention, resulting in an interview with Jack FM. She has also given public talks at the 'Psychology in the pub' (Dec 2019) Cafe Scientific series (Birmingham, Feb 2020). **Lonsdale's** work on the possible psychological benefits of singing

in a choir, published in the journal 'Psychology of Music' gained substantial worldwide newspaper and online media coverage in 2016.

4.2 Research contribution

We are proud of the quality of our research and the team's contributions to the research base, economy and society. We view the value of our research in terms of what it adds to knowledge and the impact it has locally, nationally and globally.

In 2018 the psychology team undertook an initiative to audit and focus on our Open Science practices, under the leadership of *Foxcroft*, whose leading work in this area in psychology helped him secure the University senior role on Research Improvement and Integrity. All of the journal articles in our REF submission have gone beyond the REF2021 Open Access (OA) requirements and been made OA on Oxford Brookes' institutional repository RADAR through either the Green or Gold routes to OA. In addition, the audit confirmed strong staff engagement in pre-registration of study analysis plans, and the sharing of data and analysis code.

Staff across all research groups have regularly presented their work at **national and international conferences**. These include the following: British Sleep Society Scientific Meeting; National and International Developmental Coordination Disorder Conference, Indian Psychiatric Society Annual Meeting, British Association of Cognitive Neuroscience, European Society of Cognitive Psychology, BPS Cognitive Psychology Section Conference, International Association for the Psychology of Religion, Division of Health Psychology, Army Reserve Conference, European Research Group on Military and Society, European Group for Organisational Studies, Inter-University Seminar on Armed Forces and Society, European Society for Prevention Research Conference. All professors in psychology have given **invited keynote presentations** (e.g. **Connelly**: International Reserve Forces Interoperability Forum, *Foxcroft*: European Society for Prevention Research Conference). At Reader level staff have also given invited keynotes at international meetings (e.g. **Wilmot**: International Developmental Coordination Disorder Conference; **Burgess**: Institute of Environmental Sciences Routes to Clean Air Conference; **Wiggs**: Society for the Study of Behavioural Phenotypes Scientific Meeting).

Staff across all research groups regularly **publish in international peer-reviewed journals** including: Advances in Methods and Practices in Psychological Science; Behavioural and Brain Sciences; Developmental Science; Disability and Society; Journal of Learning Disabilities; Learning and Instruction; Perception; Psychology & Aging; PLoS One; Psychology, Health & Medicine; Psychology & Health; Psychology of Music; Reading and Writing; The Journal of Nervous and Mental Disease; Transportation Research Part F: Psychology and Behaviour. Several staff have also worked on **editorial boards of journals** including: Frontiers in Psychology, Frontiers in Human Neuroscience, Frontiers in Psychiatry, Journal of Deaf Studies and Deaf Education; Journal of Sleep Research; Journal of Learning Disabilities; Mind & Language; Research in Developmental Disabilities.

Further indicators of the contribution to our discipline is through **positions of responsibility on learned societies**. Examples include staff as chair/ committee member for the following: British Psychological Society Cognitive Section; Developmental Coordination Disorder – UK; International Society for Research on Developmental Coordination Disorder; Economic & Social Research Council (ESRC) peer review panel; ESRC Future Leaders Commissioning Panel. Staff are also active members of several **Advisory boards/expert panels** including: European Academy of Childhood Disability (EACD), Future Army Reserve Working Group, Alcohol Change UK.

4.3 Research impact

The main areas of impact of our research are illustrated by the two submitted ICSs: (1) **Connelly's** work on Armed Forces Reservists had a major impact on the policy makers leading recent Government Reforms on reservists and on those tasked with implementing the policies; (2) **Barnett's** research has improved support for individuals with movement and handwriting difficulties

through the development of new assessment tools. These have provided health and education practitioners with new means to improve diagnosis and support.

A range of other work from across the four research groups also has growing impact, which will be built upon. Some examples are outlined below:

Wiggs' work investigates the effectiveness of management options for sleep problems in children with neurodevelopmental disorders. This has helped guide clinicians (and parents) about what approaches might be acceptable. Charities for children with particular conditions (e.g. Autism) have referred to this work in their online materials to guide patients and professionals looking for information and advice.

Harris's work on children born with hearing loss has shown they experience considerable difficulty in learning to read. In spite of early diagnosis and technological innovation in hearing aids, there has been little improvement in literacy levels for this group. Her research has indicated what factors are important for literacy. This has informed the development of a US curriculum for teaching young deaf children to read.

Kumar's research on different clinical groups has potential clinical implications. For example, improved knowledge of emotional blunting in individuals with depression has been applied in an outreach psychiatric clinic in India to support appropriate interventions to increase the range of emotions experienced.

Kenward's new strand of research aims to understand attitudes towards climate change. He has surveyed public attitudes to the environmental movement, Extinction Rebellion and has been involved in setting up a Citizens Assembly on climate. Preliminary research reports have been noted by Members of Parliament and findings may impact future Government policy.

Davies' work has improved understanding of factors associated with various healthy and risky behaviours (including drinking alcohol) and is beginning to inform intervention approaches. Her involvement with the Global Drug Survey has provided information on the perception of alcohol and cannabis health information labelling, likely to inform future policy and practice.

Future work will develop these areas, capturing evidence of impact on the 'Impact Tracker' tool.