REF2021

Institution: Royal Holloway, University of London

Unit of Assessment: 04 Psychology, Psychiatry and Neuroscience

1   Unit context and structure, research and impact strategy

1.1 Unit context and structure

The Department of Psychology (established 1985) is a thriving research-led unit within the School of Life Sciences and the Environment (established 2019). Our REF2014 submission demonstrated the excellence of our research: 51% of research outputs and 73% of our impact were judged to be world-leading. Since then, we have further enhanced our research quality and reputation across existing strengths in cognitive psychology and cognitive neuroscience, but also in new areas such as social-affective neuroscience. We have made significant investments in staffing and infrastructure, developed and refined support mechanisms to enable high-quality research and impact, and enhanced structures for supporting career progression and development. Research grants of £10m have been awarded to the Department by national and international funding bodies, reflecting a 25% success rate, and our RCI has increased by 20% relative to REF2014. During this period, staff have published over 600 peer-reviewed outputs. Our PhD cohort has increased by 45% relative to REF2014. We have led or played a key role in large cross-disciplinary and inter-disciplinary projects, including the *StoryFutures* 'creative cluster' (AHRC), *Magna Carta Doctoral Centre* (Leverhulme Trust) and *Body & Image in Arts & Science* (NOMIS Foundation). Our staff have been recognized nationally and internationally with prestigious awards and grants such as the ESRC Celebrating Impact Prize, EPS Mid-career award, EPS Prize lecture, ERC Consolidator Grant and Leverhulme Trust Major Research Leadership Award.

Since 2014, our research has been structured across four research groups:

- **Language, Memory & Attention** investigates language, memory and attention across the lifespan, comprising eight members.
- **Social & Affective Processes** investigates social and affective processes, comprising eight members.
- **Perception, Action & Decision Making** investigates sensation, perception, decision processes and motor behaviour, comprising twelve members.
- **Health & Well-Being** investigates mental health and well-being, comprising four members (along with seven additional members whose research is closely aligned with health professionals, and who are returned to UoA3).

Our research is supported by state-of-the-art facilities including dedicated laboratories for PIs with major projects, and many shared facilities accessible to all researchers including PGR and UG/PGT student projects. Cutting across the four research groups is the Combined University Brain Imaging Centre (**CUBIC**) in partnership with the Universities of Brunel, Roehampton, and Surrey, which houses our own research-dedicated 3T fMRI scanner. CUBIC has seen substantial investment in the period in both personnel and infrastructure.

Our research is led by Directors of Research for Strategy (*Tsakiris*) and Operations (*Walker*), who sit on the Department's executive group and chair the Research Committee. This comprises the Director of Impact (*Ricketts*), the Research Group Convenors (*Lau*, Social & Affective Processes

; *Hodgetts*, Perception, Action & Decision Making ; *Krishnan*, Language, Memory & Attention; *Murphy*, Health & Well-Being) and the PGR Leads (*Watling, Ramnani*). The Directors of Research have a close relationship with the School Director of Research, the Research and Innovation (R&I) Department, and the Deputy Principal (Academic). This structure ensures that our Departmental research strategy is aligned with School and College strategies, and that we make full use of School- and institution-level support mechanisms.

1.2 Research strategy and objectives 2014-20

Our aim in the period has been to advance our position as one of the leading Psychology Departments in the UK and to grow our international reputation.

We set, and met, the following objectives:

- Restructure our research groups into emerging themes rather than methodologies;
- Develop new support mechanisms for the vitality, sustainability and reproducibility of our research and its impact;
- Strengthen our research quality by investing in existing areas of research excellence (e.g. cognitive psychology and neuroscience) and develop new areas of excellence (e.g. social neuroscience) through strategic appointments;
- Promote collaborative and cross- and inter-disciplinary partnerships with cognate disciplines;
- Achieve these objectives in a collegial, diverse and inclusive environment that supports staff across all levels in pursuing their research aspirations.

Our research was previously organised in three groups: Adult & Child Cognition, Brain & Behaviour, and Clinical, Health & Social. These were determined primarily by the dominant methodologies used within each group (e.g. cognitive and experimental psychology methods for Adult & Child Cognition, neuroimaging and brain stimulation for Brain & Behaviour). In 2015, following a Departmental consultation, the Research Committee reorganised our research into themes, enabling us to bring together researchers with common interests but with expertise in diverse research methods. The resulting four groups (e.g. **Language, Memory & Attention** ; **Social & Affective Processes** ; **Perception, Action & Decision Making; Health & Well-Being)** comprise researchers probing similar questions across different levels of analysis and using different methods; for example, Social and Affective Processes comprises social psychologists studying attitudes and behaviour, social neuroscientists studying brain processes, and affective scientists studying physiological responses. This new research structure alongside our decision to promote dual supervision for PGR students has led to several new collaborations within and across research groups. To illustrate, 15% of our staff have established new internal collaborations through the research groups that have allowed them to use neuroscientific methods for the first time.

Our Department aligned recruitment of 16 new teaching and research staff members (seven new posts) with the strategic aim to consolidate existing strengths in cognitive psychology and cognitive neuroscience *and* to develop new expertise in social, affective and developmental neuroscience. Several high-profile research grants reflect our focus in new areas such as social neuroscience (ERC Consolidator Grant to *Tsakiris*; Leverhulme Trust Major Research Leadership Award to *McGettigan*, now at UCL), and affective science (MRC grant to *Brewer*), while existing

clusters of excellence such as Language and Reading received almost £2.5m in research funding. We also made strategic investments into two new permanent research support posts. A **full-time MRI Research Fellow** post was created in 2016, with the aim of developing new MRI methods for existing users and supporting colleagues without MRI experience (including PGRs) to develop neuroimaging research. This post acts as a catalyst for new collaborations within and across research groups. We also introduced a **Research and Development Coordinator** to support our research and impact capabilities. This post strengthens synergies between student and staff research and develops the impacts of our research. In 2015, we established a new research support mechanism, the Research Initiative Fund that allocates pump-priming funding with a specific focus on colleagues without external RCI (often ECRs). Lastly, we have invested substantially into new research facilities, start-up packages, and a new pump-priming scheme. These mechanisms and investments are described in Sections 2 and 3.

Our strategic emphasis and investment into new collaborations has supported development of several new strands of interdisciplinary research. In 2014, Royal Holloway launched the *Magna Carta Doctoral Centre* (Leverhulme Trust, 2014-17) to examine issues around personal freedom in the digital age. This has produced new synergies for collaborative PGR projects (six to 2020) between Psychology and the Departments of Sociology & Law, Biological Science, Media Arts, and Computer Science. In 2016, *Tsakiris* initiated the 4-year *Body & Image in Arts and Science* project, combining neuroscience, psychology and the Arts and Humanities to study the performative and political power of images. Since 2018, *Dalton* has been a co-I in 'StoryFutures', a major (£6.9m) multidisciplinary AHRC Creative Industries Cluster. *Dalton* leads a strand that investigates audience engagement with Virtual and Augmented Reality, with collaborators in Electronic Engineering and Media Arts. Deep partnerships with other disciplines in the College have enabled us for the first time to return some of our staff members with other UoAs (e.g. *Memon* to UoA18, and *Pincus* to UoA3). Finally, we have focused our internal PhD studentships on cross-and inter-disciplinary research. Consequently, 40% of our PGRs conduct cross- or inter-disciplinary research.

The vitality of our research environment derives not just from structures and investment, but also from our values. We have always considered it essential to support the research potential of all colleagues in a rich research culture that is highly inclusive and collaborative, operating with transparency and a strong sense of shared endeavour. Ours was one of the first three Psychology Departments to hold Silver Athena SWAN status (2012, renewed in 2016). Since 2014, we have taken substantial actions to address equality and diversity. We have also applied these values to our research by committing to the Open Science agenda for transparent and reproducible research.

1.3 Strategy and approaches for enabling impact

The Department of Psychology has a long-standing tradition of generating real-world impact in the areas of health and quality of life, the justice system, and human factors, as demonstrated our successful submission in REF2014 for impact (73.3% 4*, 26.7* 3*). Since 2014, we have sought to embed impact development much more deeply across all of the research in the Department, through innovation in our structures, policies and incentives. Structurally, this work has profited from joined-up working between the Vice-Principal for Research Impact and Interdisciplinarity, the School Director of Impact, and our Departmental Director of Impact (DoI;

Ricketts), with impact activities enhanced by designated research administrative support (R&D coordinator). Impact work also benefits from investment into knowledge exchange capacity within Research and Innovation and is showcased via the Royal Holloway website. Research impact is one of the four major areas in which applications for promotion are assessed in the institution; the fact that it is weighted equally to research, teaching and leadership demonstrates its significance. Bids to the College and Departmental pump priming schemes are prioritised if they develop research impacts. Research impact activities are reflected within our Departmental workload scheme.

Impact has been further accelerated via two key objectives:

(i) Provide impact-related training and support for staff. Institution- and School-wide meetings ensure a clear understanding of impact in research staff, complemented by discipline-specific training at Department level targeting key beneficiary groups (e.g., health practitioners, teachers, policy makers, industry partners) and areas of impact (e.g., health, education, legal system, transport). Individualised support from the DoI enables researchers to embed impact from the earliest stages of research planning by identifying non-academic beneficiaries, anticipating potential impacts, and designing activities and mechanisms that maximise the impact of findings.

 (ii) Use the research group structure to consolidate and extend our impacts. Impact strengths from REF2014 in health and well-being are reflected in REF2021 case studies (*Bradley, Pincus),* and our ongoing impacts relevant to the legal system have progressed during the period (recognised by *Memon's* ESRC 'Celebrating Impact' prize in 2017). New impacts have arisen from the Learning, Memory and Attention group, with a case study on literacy included in the REF2021 submission (*Rastle*) and clear future impacts (*Ricketts*, *Krishnan*).

1.4 Open research and reproducibility

The Department is committed to Open Science and established the 'Open Science Working Group' (OSWG) in 2017. Members include academics, post-doctoral researchers and PGR students. The group is headed by *Glover* who reports to the Research Committee and supports and trains staff to ensure that their research is robust, transparent, accessible and reproducible. The OSWG is a member of the UK Reproducibility Network, which aims to facilitate training and disseminate best practice via local hubs. The OSWG has hosted a number of external speakers on a range of topics including: data sharing, ethics, pre-registration, reproducibility, statistics, and journal practices. Since 2014, all research outputs have been made publicly available via the Institutional Pure repository. Two further Departmental initiatives were developed to strengthen our Open Science practices:

- the requirement for pre-registration for all UG and PGT research projects internally, with supervisors encouraged to register them externally (implemented in 2018);
- the obligation to make all data underpinning published research publicly available, barring compelling reasons to restrict availability (relevant to data collected from April 1, 2019)

1.5 Research ethics and integrity

Psychology is committed to upholding the highest standards of research integrity and ethics. We adhere to the RHUL guidelines on research governance, integrity and ethics and to the British Psychological Society's *Code of Ethics and Conduct*. Royal Holloway ensures that research is

conducted in accordance with the *Concordat to Support Research Integrity*. Our research is reviewed by the RHUL ethics committee. Research ethics and good practice is embedded into our PGR training programme with a compulsory session early in their first term. New staff receive ethics training through the Advance Staff Development programme.

1.6 Research and Impact Strategy 2021-2026

Our aims for research and impact post-REF2021 are to (a) further advance our leadership within the psychological sciences and neuroscience; (b) increase our engagement with cognate disciplines; and (c) further improve the vitality of our research culture through investments in staff and Open Science. Following a formal consultation in 2019, we set the following major objectives:

(i) Scaling up disciplinary research. We are committed to the advancement of our discipline, to nurturing areas of excellence and doing so in a mixed ecology of challenge and investigator-led projects. We already have an impressive track record in producing world-leading research and impact in the areas of (a) language, literacy and learning (*Rastle, Ricketts, Krishnan, Tamminen, Lev-Ari*; joint RCI 2.5million, 26% of our overall Grant Income) and (b) interoception and embodiment (*Tsakiris, Brewer, Ferre, Murphy*, joint RCI 2.1million, 23% of our overall Grant Income). Our vision is to capitalise on critical mass in these areas to scale up research and impact through larger-scale more ambitious collaborative grants, nationally and internationally. The Department will support them in securing time to develop larger and more integrated research units and identify funding opportunities and pathways to academic and societal impact. We will also identify and support individuals in other areas that are amenable to larger and ambitious bids (e.g. support for *Lau's* and *Ferre's* UKRI FLF applications).

(ii) Leadership in interdisciplinarity. The Schools structure at RHUL (established 2019) enables the Department to play a leading role in in advancing the cross-disciplinary research capacity of psychology. We intend to continue and expand our leading role in advancing the cross-disciplinary research capacity of psychology across all Schools and beyond. First, we will consolidate existing cross-disciplinary collaborations with law, economics and social sciences and play a key role in the study of cognitive, behavioural and societal issues in two of the four main Research Catalysts created by RHUL: Transformative Digital Technologies, Security and Society and Digital Futures in the Creative and Cultural industries. Second, in 2021 we will inaugurate the *Centre for the Politics of Feelings* (led by *Tsakiris*), funded by the NOMIS Foundation, and spanning psychology, neuroscience, political science and digital humanities. Third, we will integrate our expertise in mental health and well-being with leadership in digital technologies (e.g. StoryFutures) to develop effective and scalable therapeutic interventions. Our vision is to open up to other disciplines, within and beyond the School of Life Sciences & Environment, and act as a hub for challenge-led research in human cognition and behaviour and its impacts in different contexts, from climate change to digitalisation and from health-related behaviour to political behaviour. For this reason, we have introduced a new leadership role (*Rastle*) for developing interdisciplinary and challenge-led research.

(iii) Investing in and advancing our neuroimaging capabilities. Our neuroimaging capabilities are at the core of Departmental research and a research priority for the School. Post-2021, we will replace our MRI scanner and establish a new *Neuroimaging Centre for Decision-Making & Choice*. The Centre will capitalise on the expertise and talent of our recent appointments (*Furl, Lau, Bahrami, Sidarus*) to address timely societal and policy questions across disciplines both

within our School and beyond. In these challenging times, where there is unprecedented uncertainty about finance, politics, climate and health, our research will address important questions about the way people take decisions in today's difficult conditions. This new Centre alongside the replacement of the scanner will ensure the sustainability and vitality of the frontiers neuroscience research that we have been conducting ever since we became the first UK Psychology Department to acquire a research-dedicated MRI scanner.

These major objectives will be addressed in parallel with our commitment to :

- supporting the research potential of all staff, researchers and PGRs through mentoring, peer-review and training in new methods, impact and interdisciplinary research;
- addressing inequalities; and
- further increasing diversity to extend the advances we have made in recent years; and strengthening our commitment to Open Science through continuous support, and our participation in larger scale collaborations that allow powerful studies, including our participation as a founding member of the South East of England Replication in Psychology Syndicate (SERPS) with University of Reading (2021).

Our vision is for the Department to be the catalyst that enables colleagues to drive their research in ever more innovative, rigorous, transparent and far-reaching directions. We have the leadership, research structures and support mechanisms from the School and the institution to sustain and further advance the vital research culture we have built

2 People

The Department has grown since 2014 and now has 31.3 FTEs on permanent Teaching and Research contracts submitted to UoA4, comprising 11 Professors, two Readers, eight Senior Lecturers, and 11 Lecturers. Nearly one-third of staff have been in the Department for over ten years (9, all Professor). The majority of our academic staff are Category A research staff (71%); others have chosen teaching-focused (18%) or professional practice (11%) contracts (both of which are also valued career pathways with clear routes through to Professor). Equality and diversity are at the heart of everything we do. Half of our academic staff *across all levels* are women; these include key leadership positions as heads of Department (*Rastle*, 2015-2019; *Dalton*, 2019-), Impact Lead (*Ricketts*, 2014-) and PGR Lead (*Watling*, 2018-). The Equality, Diversity and Inclusion lead (*Hammett*) convenes an equalities group with wide staff representation to ensure this is embedded across all Departmental processes.

2.1 Staffing strategy

Our vision since 2014 was to enhance the vitality of our research environment by appointing researchers with proven disciplinary expertise and the ambition to act as catalysts for projects beyond disciplinary boundaries. Our strategy in making new appointments has been to consolidate and develop interactions within and between our existing research groups, and to foster new research avenues such as social-affective neuroscience, decision-making and developmental neuroscience. These new avenues also reflect our strategy to support and develop challenge-led research with broad multidisciplinary and societal impact. Each of these areas has witnessed substantial growth over the last decade, and jointly they have broadened the dialogue between life and social sciences.

We have appointed 16 new Teaching and Research staff, nine of whom were replacements for colleagues who have left for European Institutions (n=2), UK Institutions (n=4) or charities/industry (n=3). Our new appointments align with aims to consolidate existing strengths (e.g. *Krishnan*, *Tamminen, Ricketts*, *Lev-Ari* in language; *Vetter* in vision neuroscience; *Bjornsdottir* in social psychology; *Ferre* in multisensory perception); to develop new expertise in areas that were identified as key objectives for the post-2014 period (*Lau*, *Bahrami* in social neuroscience; *Brewer*, *Murphy* in affective science) or areas of international growth that were not represented strongly in our research portfolio (*Lachlan* in cultural evolution and animal behaviour; *Furl* and *Sidarus* in decision-making; *Bathelt* in developmental neuroscience; *Hodgetts* in spatial cognition); and to invest in areas with substantial impact potential (*Krishnan*, *Ricketts*). These appointments helped us to meet our post-REF2014 objectives and prepare us for our post-REF2021 objectives.

2.2 Staff development

Our staff development strategy facilitates colleagues' research plans, career development, wellbeing and work-life balance; and ensures that clear criteria for recognition and reward are available and rigorously applied. The Department provides a portfolio of research support to staff at all levels, individualised according to aspirations, career stage and personal circumstances.

(i) Supporting early career researchers. New academic appointments benefit from a variety of initiatives that assist them in developing their research potential and establishing their research programmes. New staff receive comprehensive inductions at Departmental and institutional levels. Early career appointments receive formal support through the College probation and training schemes, at the heart of which is one-to-one mentoring from an experienced member of staff in the Department who provides advice on teaching, research and administration, and assistance throughout the three-year probation period. Research group convenors and DoRs also assist in the mentoring process. To set up their laboratories, new members receive (a) generous start-up packages comprising lab space, equipment, consumables, and research support (with cash contributions totalling £160k); (b) significantly reduced teaching and administrative duties (ca. 50%) in the first year of appointment, with these loads increasing gradually over the subsequent two years; and (c) generous access to our physical infrastructure (e.g. totalling over 950 hours of MRI scanning time). Where necessary, new staff attain HEA fellowship by completing the CAPITAL course to develop their teaching practice. The success of these support mechanisms for new staff, especially ECRs, is demonstrated by the fact that our ECRs secured external research funding totalling over £2.2m between 2014 and 2020.

(ii) Research planning. In addition to the annual RHUL appraisal process, all staff complete an annual 'Personal Research Plan', in which they review their publications, grant applications and impact activities in relation to previous aims and propose research, publication and funding plans for the coming year. Staff receive feedback on their plans from the Directors of Research. Staff are assisted in the preparation of grant applications through a rigorous system of internal peer review that provides high-quality guidance to applicants, and greatly improves the applications that we put forward to UKRI, charity, and industrial funders. Each grant has at least one reviewer (two for UKRI). The Director of Impact (*Ricketts*) provides support on proposals for the development of project-specific impact strategies to aid grant writing and maximise impact. The

success of these policies is reflected in the 25% success rate in our applications for the current REF period.

(iii) Career development support. RHUL embraces the *Concordat to Support the Career Development of Researchers*. Research staff at all levels are eligible for the RHUL mentoring scheme, which was designed with support from the UK Resource Centre for Women in SET, and which pairs individuals with trained mentors from outside the Department. Members of staff are also invited to participate in the 'Advance' Researcher Development Programme (a series of annual workshops devised to enhance skills such as grant writing and funding, research ethics, project and impact management, and public engagement), and almost 40% of our staff have done so. These workshops are complemented by more focused Department-level training as appropriate (e.g., sessions on research impact, open science). Training sessions are led by a combination of external facilitators and internal experts. Staff are also encouraged to access targeted training opportunities (e.g., Mandala for BAME staff, Springboard, Aurora Leadership and Women's Enhancement Programmes). To support staff outside of formal probation or annual review processes, we have introduced a new mentoring scheme headed by *Zanker* whereby staff, including our post-docs, can request mentoring on any aspect of career development (e.g. general career progression or specific circumstances such as return from parental leave, part time working, support for staff with protected characteristics).

(iv) Workload and sabbatical leave. Our Research Workload Scheme supports research by adjusting the teaching and administrative workloads of academics with funded projects. In 2016, we implemented specific changes to our Workload Scheme to acknowledge: (i) career stage and personal factors (e.g., return from maternity leave or other career break, exceptional caring responsibilities); (ii) substantial impact-related activities, in addition to (iii) research funding. Staff are encouraged to use generous sabbatical entitlement (one term in every nine served) to pursue periods of sustained research, and two men and eight women did so during the period.

(v) Exchanges and Secondment. *Rickets* (DoI) and *Cinnirella* (Industry Liaison Officer) scope opportunities and work with colleagues to foster exchanges and placements as described in Section 4. Our colleagues are supported in developing innovative projects that often lead to secondments (e.g.*Tsakiris* at the Warburg Institute).

(vi) Wellbeing and work-life balance. Our ethos is that our careers should be seen as a marathon rather than a sprint, and senior staff members set the tone in the Department by modelling healthy attitudes to work. Several staff have used formal flexible working options during the period, and the Department has also supported transitions between full-time and part-time working as well as extended periods of unpaid personal leave. During the pandemic, the College established the Working Well Hub, a huge set of resources to mitigate the mental and physical effects of remote working. Staff all have access to 24-hour Confidential Care to support wellbeing; and the Hub offers links to free activity and creative classes, nutritional advice, peer support groups and many other resources. Staff in the Department are very open about rejections; this enhances our resilience and allows us to improve our work. We have introduced a new leadership role for wellbeing (*Zanker*) which led to the new mentoring initiative described above and established wellbeing as a more visible Departmental priority.

(vii) Recognition and Reward. RHUL has put immense effort over the past 10 years into developing clear and equitable promotion processes. Every aspect of the process (including

through five professorial bands) is now conducted in relation to a matrix of clear criteria that assess achievements in the domains of research, teaching, impact and engagement, and leadership and enhancement. The College requires mandatory equality and diversity training for all staff participating in selection panels or promotion processes. Instead of relying on self-assessment of readiness for promotion (which can introduce inequalities) the Departmental promotions group invites all colleagues to submit CVs every year, offering support and recommendations on the basis of the published criteria. RHUL holds several promotion workshops each year to assist with applications, and women approaching readiness for professorial promotion are invited to a bespoke enhancement programme led by RHUL's Deputy Principal.

The emphasis on equitable promotion processes at the very highest level of the College has helped us to transform the gender balance of our Department. In the period, we have achieved equal gender representation at every career stage, and there is no gender pay gap at any level in our Department. Six of the seven promotions to Professor in the period have been women, all of whom participated in the Deputy Principal's women's enhancement programme. Our 50% representation of women at professorial level substantially exceeds the HESA benchmark for Psychology and the Behavioural Sciences (37% in 18/19).

2.3 Research (PGR) students: recruitment, training and supervision

In the REF2021 period, we increased our PGR cohort by 45%. 52 fully-funded students have entered our PhD programme and 42.03 PhDs have been awarded (98% completing within 4 years). Psychology has an active group of 35 PGR students, of whom 73% are female, consistent with sector norms (74%). PGRs are fully integrated into our research groups and culture including the Open Science working group. Each student is given access to equipment and the laboratory space required for their project. The exceptional work that our students have undertaken has been recognised by several professional bodies: for example, *Lavan* received the BPS 'Outstanding Postdoctoral Research' award, and the Psychonomic Society 'Best Article Award in *Psychonomic Bulletin & Review'*; and *Tappin* was awarded a Visiting scholarship to Yale University by the Australian Research Council Centre for Excellence in Cognition and its Disorders. Since 2014, over 30 of our PGRs have published 90 peer-reviewed articles in top tier journals (e.g., *Cognition, JEP: General, Psychological Science*).

 (i) PGR Strategy post 2014. In 2016, we revised our PGR strategy to align allocation of studentships more closely to our strategic research aims. For example, we have promoted studentships in particular areas (e.g. 4 additional PhD Studentships in Cognitive & Social Neuroscience in 2016), or emphasised particular methods, new collaborations across psychological sub-disciplines, and interdisciplinary research. Consequently, 40% of our PGR students conduct cross- or inter-disciplinary research. Forty percent of these involve supervisors across two of our research groups, and 60% involve supervisors from different disciplines within or outside RHUL (e.g., Biological Science, Computer Science, Information Security, Law, Media Arts, Management and Electronic Engineering).

(ii) Recruitment and funding. We have an excellent track-record of securing doctoral funding from sources including: ESRC SE DTC, ESRC SeNSS DTC Individual and Collaborative studentships (industry partners with Transport Research Laboratory), the AHRC TECHNE scheme, Leverhulme Magna Carta studentships, Amy Bueller studentships, RHUL studentships

including matched-funding with partners (Eurospine, Macular Society, Waterloo Foundation). Psychology successfully joined the BBSRC LiDO DTP through a new collaboration with Biological Science and Computer Science in 2019. Our PGR students are provided with an annual budget of £550 towards research and travel costs, and are awarded an additional £100 upon publication of each peer-reviewed article. MRI-related PhD projects are supported with up to 60 hours of scanning time at a 10% subsidised rate. Students may apply for additional funds to support development activities (e.g., RHUL Travel Awards) and those working in cognitive (neuro)psychology are eligible for up to £1500 through the Elaine Funnell Prize competition to fund external laboratory visits, conference travel and training.

(iii) Skills and career development. We offer a high-level training and skills development programme starting with a "Planning for your PhD" session, through to advanced research skills (e.g. project management, Gorilla, Qualtrics, eye tracking, R Studio, DataCamp, fMRI analysis) and career development (e.g. publishing and reviewing, public speaking, life outside academia), and these sessions are also open to our post-doc researchers. The PGR Staff-Student committee reviews annually and revises the programme if required. Our PGR students have access to a wide range of training through the Doctoral School's Researcher Development Programme (e.g. NVivo, improving work/life balance, presentation skills, ethics, and careers) as well as through the SeNSS DTP and partner institutions. Our students attend in-house workshops and take advantage of our specialised 'MRI programme'. All PhD students are members of a research group, attending journal clubs and seminars, and they also have their own journal club. Ninety-five percent of our PGRs reported in the most recent PRES survey that their research skills (including critical analysis and evaluation of findings) develop positively during their training.

(iv) Support mechanisms and monitoring. The PGR Lead (*Watling*) has overall responsibility for the Postgraduate Research (PhD) programme and also serves on Departmental Executive committee and the RHUL Research Degrees Programme Committee. The PGR Lead and Deputy Leads (*Ramnani, Lev-Ari*) are responsible for policy and governance regarding admissions and funding for prospective students, supervisory arrangements, academic progression (annual reviews, upgrades), the provision of Department-specific training and ensuring students' pastoral welfare. They sit on the Department's Research Committee and represent us at School-level Research Student Oversight Committee. The School holds a minimum of three Student-Staff committees per year (previously held at Department level), chaired by a PhD student representative, where actions may be taken to enhance the PhD programme and support for students.

We provide strong, complementary and supportive PGR supervision. Students have a lead supervisor, a second supervisor (from 2016 onwards) and an advisor for academic and pastoral care. Staff members' supervision skills are developed through formal training (e.g. Departmental PGR induction by the PGR Lead, RHUL CAPITAL supervisor training) and support for new supervisors (who are encouraged to gain experience as advisors and, if acting as supervisors, are paired with experienced second supervisors). Staff are required to attend RHUL training on equality and diversity, including sessions within the TaLIG (Teaching and Learning Interest Group) series. In the most recent (2019) PRES survey, 95% of respondents indicated that supervisors have the necessary skills and subject knowledge to support their research and provide appropriate feedback through regular contact.

(v) Annual reviews and feedback. PGR Leads chair an annual review process involving the student, supervisor(s) and advisor to assess how well the supervisory team is working, the progress made, the timeline for completion, career development opportunities and any training required. The first review is scheduled after approximately nine months of study and the formal upgrade meeting after 16-18 months. All our PGRs have successfully upgraded since 2014. A second annual review is held after 24 months and a third, or mock viva, at 33-36 months, with regular monitoring thereafter up to submission.

2.4 Equality and diversity

The vitality of our Department derives from the diversity of our staff and their achievements. Our commitment to equality and diversity permeates all of our activities. Our Athena SWAN Silver Award was renewed in 2016 and we are still one of only 14 Psychology Departments to hold this honour. The award reflects our proactive approach to supporting the career development of staff at all levels, to creating an inclusive environment in which all colleagues can thrive, and to understanding the many routes in which inequalities can be manifest.

Our primary focus during this REF period has been on transforming outcomes for women in the Department. Our Athena SWAN Silver renewal submission showed that in the five years prior to 2016, women made up approximately 70% of staff at all levels except Professor, where this disparity was reversed. The preparation of that submission allowed us to rigorously interrogate women's experiences in the Department, and to develop strategies to enhance their outcomes. These included: enhancing the visibility of women (e.g. the Elaine Funnell Lab has portraits of inspiring women psychologists); gathering data on gender splits (in e.g. seminar speakers, internal funding, sabbaticals, workloads); scheduling meetings and seminars in core hours; utilising flexible working options; proactively assigning 'high-leadership' roles to women; developing clear criteria for starting salaries and start-up packages; and insisting on rigorous application of criteria in promotions processes. The institution has also invested substantially in policies that enhance women's experience and outcomes. We have generous maternity provision (26 weeks ordinary leave plus 26 weeks additional leave) and shared parental leave (to mothers, fathers, partners, and adopters). The institution offers research sabbaticals following a period of maternity, shared paternal, or caring leave. RHUL operates a salary sacrifice scheme to access on-campus nursery provision, and private breastfeeding spaces are available across campus. Taken together, these measures have helped the Department to achieve equal gender representation at all academic levels, and to eliminate the gender pay gap at every level. Staff involved in REF2021, and all staff involved in recruitment and promotions processes, have undergone mandatory training on unconscious bias, and REF Leads regularly scrutinise equality and diversity data. Our processes are fully in line with the RHUL code of practice for REF2021.

Our aspirations on equality and diversity over the next period are to widen our focus to other protected characteristics, and to show leadership nationally for greater equality and diversity in our field. To this end, our previous Athena SWAN leadership role has been expanded to Equality, Diversity and Inclusivity Lead (*Hammett*). Our Department played a lead role (*Ramnani*) in the College's bid to become one of the first eight nationally to receive a Bronze Award in the Race Equality Charter scheme (2015) and in the renewal of this award (2019). The comprehensive action plan for the award is providing us with the data and senior management support needed to interrogate the representation, outcomes and experience of BAME colleagues and students,

and to develop specific strategies for change. Our data indicate that access to PGR study is a major barrier for greater BAME representation in our field; thus, we have developed the Sarah Parker Remond studentship specifically for Black students. We believe that visual symbols are important in promoting inclusivity; thus, many colleagues now wear rainbow lanyards to support LGBT+ students and colleagues, and since 2015 we have decorated the Department with rainbows during Pride month. In 2018, we introduced a "get to know your Department" session for first year undergraduates in which staff with diverse backgrounds share their experiences of academia. The Department is proactively engaged in championing these initiatives, e.g. by supporting empirical research on the impact of our lanyard intervention and the experiences of widening participation and BAME students, the commissioning of gender neutral toilets and the provision of free sanitary products.

The Department has shown leadership nationally through a variety of equality and diversity initiatives. *Ramnani* led the development of the Athena SWAN Psychology National Forum (ASPON) and hosted its inaugural conference (2015). Likewise, he led the creation of the Women in Science Database (WISDATABASE), a collaborative initiative between our Department, the British Psychological Society, and British Neuroscience Associations, launched in 2018 to enhance the visibility of women scientists in the UK. Members of the Department also promote equality and diversity nationally and internationally through service in learned societies; for example, *Ramnani* led the EDI policy of the British Neuroscience Association with respect to the representation of women in society meetings, and he is on the evaluation panel of the BNA scholars programme designed to help underrepresented groups to thrive in neuroscience.

3   Income, infrastructure and facilities

The Department has outstanding research facilities and infrastructure, and we receive high-quality support from the Departmental Research Committee and College's Research and Innovation. R&I develop and disseminate policies on research governance, research integrity and good conduct, ethics and data management, as well as mechanisms for outputs and data to be openly accessible. Psychology staff are supported by a designated team who help identify funding opportunities, develop costings for funding applications, draw up contracts and agreements including Intellectual Property, and administer post-award grant management.

3.1 Research income and funding

The total amount of funding awarded for this REF period is approximately £10m (awards by gender: F- 60%, M– 40%), and our RCI has increased by 20% compared to REF2014. Our research funding strategy was threefold. Firstly, to support colleagues through annual individual research planning meetings and internal peer-review; consequently, our success rate across all funders stands at 25%. Secondly, to diversify our funding streams through interdisciplinary and large scale projects. To that end, our awards reflect a portfolio from UK Research Councils (ESRC, BBSRC, MRC), British Academy and European Research Council, along with funding from charities (e.g. Leverhulme Trust, Nuffield Foundation) and Industry (Transport Research Laboratory, Shell UK, QinetiQ). Major new awards obtained during the census period include substantial funding from the European Research Council (*Tsakiris* £1.7m), Leverhulme Trust (*McGettigan* £961k), ESRC (*Rastle* £530k), BBSRC (*Ramnani* £422k, *Lachlan* £220k), and AHRC for StoryFutures (*Dalton* £428k, as part of the £6.9m StoryFutures project). Our ECRs have been

successful in obtaining major grants (e.g. *Brewer* £469k from the MRC and *Sidarus* £292k from the ESRC). Thirdly, in 2015, we established a new research support mechanism, with a specific focus on colleagues without external RCI (often ECRs). The new Department Research Initiative Fund (RIF) allocates pump-priming funding quarterly, and supports small equipment bids, conference travel and publication costs. The total amount awarded since 2015 exceeds £85k, providing an average of £18k p.a. of research funding for ~76 proposals, supporting 36 members of staff. The RIF enables the continuation of research in the absence of external funding and has acted as a catalyst for new grant applications and impact activities. It is used alongside the RHUL Research Strategy Fund to seed-fund initiatives.

3.2 Operational Infrastructure and Facilities

Psychology has invested substantially in new laboratories and infrastructure to sustain and enhance our ability to conduct world-leading research. Our facilities permit research in cognitive, experimental, social and developmental psychology, sleep, psychophysiology, neuroimaging (MRI, EEG), brain stimulation (TMS, MRI-compatible tDCS) and Virtual Reality. Since 2014, we have made significant capital investments (totalling ~£455k) on seven new laboratories:

- The **Elaine Funnell Neuroscience Lab** opened in 2015 providing a large shared lab with soundproof testing booths, and several workstations equipped for cognitive and psychophysical studies, including a 'clone' workstation for piloting MRI experiments and MRI data processing.
- A dedicated **Sleep Lab** opened in 2015, with two bedrooms and a control room, with polysomnography equipment for monitoring neural activity during sleep. Research was supported by an ESRC grant to *Tamminen* and *Rastle*.
- Three new shared **Eye-tracking labs** were built to house eye-tracking equipment including remote MRI compatible and portable eye trackers.
- A state-of-the art **EEG** lab comprises a 64-channel system with active external electrodes and a wireless 32-channel system, allowing hyper-scanning but also recording during neurostimulation and integration with Virtual Reality.
- Investing in the research potential of *Ferre*, an ECR specialising in vestibular cortical processing, multisensory integration and gravity, we developed the **Vestibular Multisensory Embodiment** (VeME) Lab, housing: MRI-compatible Galvanic Vestibular Stimulators, devices for tactile, proprioceptive and pain stimulation, a 3D inversion table, and VR head mounted displays funded by the European Low Gravity Research Association.
- A new **Social Psychophysiology Lab**, led by *Tsakiris* (ERC grant) with the participation of *Bahrami,* allows simultaneous peripheral physiology recordings from multiple participants while they perform joint tasks.
- A strategic investment was made (2019) for a new shared **Virtual-Reality (VR) facility** building on our existing expertise in vision, neuroscience and eye-tracking and enabling new interdisciplinary collaborations. This includes a large "play space" for participants, equipped with five headsets, two incorporating an eye-tracker, and high-spec PCs.

Our specialist facilities also include: a) a speech perception and speech production studio housed in a sound-treated room with specialized equipment for measuring tongue movement; b) a TMS laboratory with the Magstim Rapid Stimulator for single-pulse and repetitive stimulation and Visor

System for Neuronavigation; c) a 'Baby Lab' including waiting room, testing room and control room with dual camera capability; d) behavioral labs (with recording equipment and three high-spec participant-testing PCs/stations); e) psycholinguistics laboratory. These facilities are centrally-bookable and accessible to all research staff and PGRs irrespective of funding. Management of our research facilities and infrastructure is undertaken by the R&D Coordinator who risk assesses all facilities, manages our participant pool, assists with research ethics, and organises impact events.

The Department benefits further from large capital investments (£57m) in a new state-of-the-art library in the Emily Wilding Davison building, and the new Beatrice Shilling building (£18m investment, opened 2018) accommodating the new Electronic Engineering Department. The Shilling Building houses the AHRC creative cluster 'StoryFutures' with purpose-built VR facilities to which we have access through our central role in 'StoryFutures' (*Dalton*). Staff in the Department have used these new buildings along with our property in Bedford Square to host events with external stakeholders designed to enhance our research impacts. The impacts of *Bradley*'s research have also been supported through dedicated space in the RHUL Enterprise Centre for HPR Ltd, the commercial arm of her research.

3.3 Specialist and collaborative research infrastructure or facilities

The 'Combined University Brain Imaging Centre' (CUBIC) hosts our 3T MRI scanner, the first research-dedicated MRI in a UK Psychology Department. This facility is jointly owned and run through a long-standing partnership between Royal Holloway, Brunel University, Roehampton University and the University of Surrey. The scanner recently underwent a major upgrade (replacement of gradient coils 2018). We invested £85k in a **High Performance Computing Cluster** and our **Data Storage and Network Back-up** (2015 and 2017) to upgrade the IT infrastructure, with the development of a new powerful 'cluster' to manage computer resources for raw data processing and analysis.

The MRI Research Fellow (*Sengupta*) provides support for all MRI users (including PGRs) in methods and analysis and the use of the cluster. Capability has been extended by introducing new rules of operation to enable the scanning of children (2017), and we have invested in peripherals including MRI-compatible transcranial direct-current stimulation (tDCS) and the purchase of a 'Biopac' (£16k, 2018) enabling the direct MRI-compatible recording of physiological measures (ECG, EMG, respiration & bi-manual grip force). We advanced our commitment to Open Science in MRI research by enabling staff to adopt good data management practices and data sharing through a wiki knowledge-base. Researchers have access to the RHUL 'Figshare' data repository and can make their data publicly available via the OpenNeuro platform as documented on the CUBIC wiki.

By 2022, the CUBIC 3T scanner will be 20 years old and additional strategic investment will be critical for driving forward the research excellence of the Department, the School and RHUL as a whole. For this reason, RHUL has enthusiastically endorsed our plan to replace the scanner, ensuring the continuation of our world-leading neuroimaging research.

3.4 COVID-19 pandemic

Our infrastructure and support mechanisms offered resilience to the impacts of COVID-19 on our research. Grants from our Research Initiative Fund were immediately made available to colleagues who studied the psychological and social impact of the pandemic. For example, *McKay* is involved in the multi-wave C19PRC Study that monitors and assesses the pandemic's long-term psychological, social, economic and political impacts. This study was launched on 23 March 2020 (Wave 1), the day that a strict UK lockdown was enforced, and has already generated 13 publications. *Tsakiris* led data collection from the UK and Greece as part of one of largest international studies, involving representative samples (total: 47k) from 67 countries. Our investment in the post of R&D Coordinator allowed efficient COVID-specific risk assessment of our labs, and many reopened in time for the Autumn term.

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

Strong collaborations underpin the vitality of our Department, and our leadership within the wider discipline contributes to its sustainability. We have deep, reciprocal partnerships with a range of industry, government, public sector and charity organisations, which inform our research at every stage and permit us to make pivotal contributions to society and the economy, both nationally and internationally, via changes to knowledge, policies and practices. These activities and achievements reflect staff at all career levels, and women are prominently represented.

4.1 Research collaborations

Support for collaboration forms a cornerstone of our research strategy; it was a primary motivation for restructuring our research groups, and underpinned our move to promote dual supervision for PGR students. The MRI Fellow role was also aimed at encouraging staff to develop new and often collaborative research directions with a focus on neuroimaging. Staff are supported to develop external collaborations through easy access to travel and seed funding via the Department's Knowledge Exchange Fund and Research Initiative Fund. More extended visits to develop impact (e.g. *Dalton* to Cranfield University, UK) and research (*Durant* to the Hungarian Academy of Science, *Bardi* at the University of Western Australia) collaborations with colleagues in other institutions are supported through sabbaticals. Collaboration is recognised formally through the promotions process (e.g. the Senior Lecturer criteria emphasise "successful collaborations with other research teams/institutions"). Our success in supporting collaboration is illustrated, for example, by: the 86% of submitted outputs that involve co-authors from other institutions; major funded research projects involving collaborations with other institutions, both nationally (e.g. *Tsakiris* seconded at the Warburg Institute for the "Body & Image in Arts & Science' project) and internationally (e.g. *McKay* on the ARC Centre of Excellence in Cognition and its Disorders at Macquarie University, Australia, *Ricketts* with MGH Institute of Health Professionals, Boston, USA, *Rastle* with Sogang University, South Korea, *Tsakiris* in a Visiting Professorship at the University of Luxembourg, and a long-standing collaboration with the New York University School of Medicine on their joint research in face-transplantation); and the success and longevity of the CUBIC research partnership across four institutions. Our submitted outputs and impact case studies further showcase our collaborations and joint infrastructures.

4.2 Relationships with users, beneficiaries, and audiences

Our impact strategy informs our relationships with non-academic beneficiaries. Projects are supported through Department's Research Initiative Fund and RHUL's Research Strategy Fund. Training from the Department, School and College supports researchers in developing existing relationships with key research users and beneficiaries, and in fostering relationships with new stakeholders (e.g. training on how to engage with government and parliament). Individual support from the Director of Impact can identify relationships that would enhance knowledge transfer for a specific project and suggest targeted mechanisms for developing such relationships. The Department also supports a range of bespoke knowledge transfer and public engagement activities, including research networks and seminar series that actively draw in professional stakeholders (e.g. the South East Research Network for Schools, described further below). These engagement activities often involve PhD students and ECRs, ensuring that these relationships can be sustained in the Department and in the wider discipline. For example, PGR student *Lally* provided training on engaging with the Parliamentary Office for Science and Technology following an internship with them, and PGR student *Soderberg* had a 3 month placement at the Cabinet Office

These strategies have helped us to grow our industry partnerships substantially. We play a major role in two AHRC-funded interdisciplinary projects aimed at driving innovation and growth in immersive storytelling ('StoryFutures' and 'StoryFutures Academy') involving partnerships with large companies including Discovery and Heathrow (*Dalton*). These collaborations have energised related partnerships with Tobii (*Zanker, Durant*) and Cinefade, a leading edge cinematic production company (*Durant*). Our previous REF submission described *Wann*'s long-standing links with Volvo and Transport Research Laboratory; his mentorship has supported other colleagues to develop projects with the latter (*Dalton, Durant*), investigating the safe use of domestic VR systems (funded by the Department of Trade and Industry) and motion in advertising displays. Our long-standing links with the major global pharmaceuticals are described in the impact case study about *Bradley's* work on quality of life. *Tsakiris* is scientific advisor for Empathic Technologies Ltd and Team Turquoise Ltd in the area of wearable technologies. The importance that RHUL places on industry engagement as part of a vital research culture is demonstrated by the recent promotion of *Cinnirella* to a practice-based industrial professorship, further enhancing our environment. *Cinnirella* advises multinationals including Shell and GSK on security behaviours and has delivered keynotes to large industry conferences at i-4 and the UN International Atomic Energy Agency.

Our engagement with government, charities, and the public sector has also increased dramatically. *Rastle*, *Ricketts*, *Krishnan* and *Watling* work with a large and well-established network of schools, educational practitioners and health practitioners (South East Research Network for Schools (SERNS) led by *Ricketts*). SERNS holds an annual meeting that brings together researchers and education practitioners in a two-way dialogue to inform research design and practice, and enhance understanding of the diverse publics that our research needs to benefit. There are deep synergies between this work and *Walker*'s long-standing partnership with the Macular Society. He is a member of their professional advisory board and has worked with them to develop technological reading aids for people with vision loss. *Walker* has a Knowledge Exchange project to promote wider use of technology as a visual aid in low-income countries with

a colleague in the School of Management. In the human factors domain, *Dalton* has worked with the Ministry of Defence and, in a separate project, with the UK Civil Aviation Authority and the Safety and Accident Investigation Centre at Cranfield to improve the design of helicopter warning systems. *Ferre's* work on vestibular–multisensory interactions was sponsored by the European Low Gravity Research Association and European Space Agency and has broad applications for human space programmes.

4.3 Wider contributions to the economy and society

We produce policy-relevant and public-orientated research findings that contribute to debates on topics such as global literacy, transport safety, quality of life in chronic health conditions, and memory in the judicial system. Our commitment to engaging proactively with non-academic beneficiaries allows us to ensure that this research delivers on its potential for driving wider economic and societal impacts. For example, *Rastle* has advised both the World Bank on their 'Ending Learning Poverty' strategy that aims to halve global illiteracy by 2030, and the Massachusetts Department for Education on their strategy for Mass Literacy. *Ricketts* and *Rastle* work with educational charities (e.g., National Literacy Trust), the press (tes, formerly the Times Educational Supplement), schools and teachers to inform educational practices for promoting reading. They were lead speakers in a parliamentary seminar on literacy chaired by Suella Braverman MP. *Ricketts* works closely with the Education Endowment Foundation (EEF), a high-profile charity that summarises research evidence for use in schools and funds educational research, and has contributed to guidelines for teaching literacy in secondary schools. *Tsakiris* was a steering committee member and co-author of the flagship Scientific and Technical Research Report 'Understanding our Political Nature', led by the EU's Science Advisory Body and prepared for the new EU Commission (2019). *Dalton's* work on helicopter warning systems informed the European Organisation for Civil Aviation Electronics. *Dalton* has also served as an expert witness for Fatal Accident Inquiries by the Scottish Courts into two major helicopter crashes, including the Clutha disaster. *Wann's* work on children's roadside judgments is translated through his role as trustee of the Bikeability Trust, which engages over 50% of England's primary school children in cycle training. Finally, the audience insights team within 'StoryFutures' (led by *Dalton*) has supported the development of more than ten new immersive storytelling experiences, including 'Virtual Veronese' – the National Gallery's first ever virtual reality experience, and generated broader insights into immersive audiences that have been shared with stakeholders around the world.

We use multi-media outlets, science festivals, museum residencies (Science Museum, Tate Exchange) and public engagement events to showcase our research with diverse publics. For example, *Krishnan* gave one of the 'Lost Lectures' at the Natural History Museum alongside champion beatboxer Bellatrix*; Rastle* spoke at UNESCO about 'how we can end the Reading Wars'; and *Ferre* discussed the future of human space exploration at an event organised by the Space Generation Advisory Council. Our colleagues also work closely with the RHUL press office to capture opportunities to share our research on television (e.g. BBC), radio (e.g. More or Less, In Touch), and in newspaper formats (e.g. NY Times, Guardian).

4.4 Contributions to the sustainability of the discipline

We contribute to disciplinary sustainability through memberships of key panels and advisory groups (outlined in detail in section 4.5 below) as well as by serving on umbrella bodies that promote vitality, reproducibility and sustainability in scientific inquiry itself, within the Department as our Open Science policies and support mechanisms demonstrate, and beyond. For example, *Rastle* and *Tsakiris* have used their editorial positions at Journal of Memory and Language and Cognition to introduce Open Data policies that enhance reproducibility across the discipline. *Ramnani* has represented the British Neuroscience Association (BNA) on the Parliamentary and Scientific Committee, which provides a link between Parliamentarians, scientific bodies, industry and academia, and is now a member of their Programme Committee. Our support for early career researchers and PGRs also allows us to contribute to the sustainability of the discipline by developing the research leaders of the future.

An important part of our approach to our discipline's sustainability entails our ability to make links with other areas, and our strong commitment to interdisciplinary research highlighted throughout this document. Our staff have leading roles in major interdisciplinary research projects including the *Body & Image in Arts and Science* project (*Tsakiris*) and 'StoryFutures' (*Dalton*) and we deliberately seek to enable new connections, for example by focusing PhD studentships on cross- and inter-disciplinary research. As a result of our research re-structuring, 40% of our PGRs conduct cross- or interdisciplinary research and are co-supervised by staff from different research groups or academics from other disciplines. Such networks of collaborations beyond the discipline allow us to respond rapidly to newly emerging national and international challenges, as exemplified by *McKay's* involvement in the multidisciplinary C19PRC study that was launched in response to COVID-19. This type of work is supported through a new (2020) leadership (*Rastle*) to promote interdisciplinarity and challenge-led research.

4.5 Contributions to the research base

Staff are strongly encouraged and mentored to contribute to the sustainability of the research base by participating in peer review, panels, and learned societies, and their contributions have been acknowledged with a range of prizes and awards.

Editorial Contributions. One third of our staff have held senior or associate editorial roles in major journals during the period including: **Journal of Memory and Language** (*Rastle*, Editor-in-Chief), **Cognition** (*Tsakiris*, joint Senior Editor), **British Journal of Social Psychology** (*Zagefka*, Editor-in-Chief), **Frontiers in Psychology: Personality and Social Psychology** (*Bardi*, joint Editor-in-Chief), **Journal for the Cognitive Science of Religion** (*McKay*, Editor-in-Chief), **Brain and Neuroscience Advances** (*Ramnani*, Senior Editor), and Associate Editor roles in **Infant & Child Development** (*Watling*) **British Journal of Psychology** (*McKay*), **Journal of Experimental Psychology: HPP** (*Rastle*), **Auditory Perception and Cognition** (*Hughes*), **British Journal of Educational Psychology** (*Ricketts*),.

Panel Memberships. *Rastle* chairs the ESRC steering group (since 2019) on the *Future of the PhD in the Social Sciences* designed to inform the shape of the next generation of DTPs. She has been a member of the ESRC Strategic Advisory Network (since 2019); the ESRC Research Committee (2015-18); and was Chair of the ESRC grants assessment panels for Psychology (2014,2015). *Rastle* served on the Medical & Health Sciences panel for the Excellence in

Research for Australia (2015) and is a panel member for REF2021. *Ramnani* is a trustee for Research Policy at the British Neuroscience Association (2017-), was a core member of BBSRC committee A (2016-2019) and served on funding panels in Portugal and France. *Walker* is a member of the Moorfields Eye Charity research grant panel. *Zagefka* is a panel member of the Polish National Science Centre, member of panel for NORFACE and Chair of the Psychology, Pedagogy, Didactics and Social Work Panel at Research Foundation – Flanders (Belgium) where *Tsakiris* also serves as member. *Tsakiris* is panel member of the Fyssen Foundation (France) and the Volkswagen Stiftung (Germany). *Ferre* is a panel member for the European Science Foundation and the European Space Agency.

Prizes, Fellowships and other Recognition. Staff across all career stages have been awarded prestigious prizes and fellowships: *Rastle*, EPS Mid-Career Prize (2017) and ESRC 'Celebrating Impact' Prize (2020); *Tsakiris*, Young Mind and Brain Prize (2014), 22nd Experimental Psychology Society Prize (2015), NOMIS Foundation Distinguished Scientist Award (2016); *McGettiga*n, Leverhulme Trust Major Research Leadership Award (2017); *Mickes,* Psychonomic Society Early Career Award (2017); *Ferre*, European Low Gravity Research Association Research Prize (2017); *Murphy*, EPS Frith Prize (2020). *Rastle* (2018) and Tsakiris (2020) were elected to the Academia Europea; *Tsakiris* to the APS (2019); and *Rastle* (2018) to the Academy of Social Sciences. *Rastle* is President Elect of the EPS and *Tsakiris* is President of the European Society for Cognitive and Affective Neuroscience.