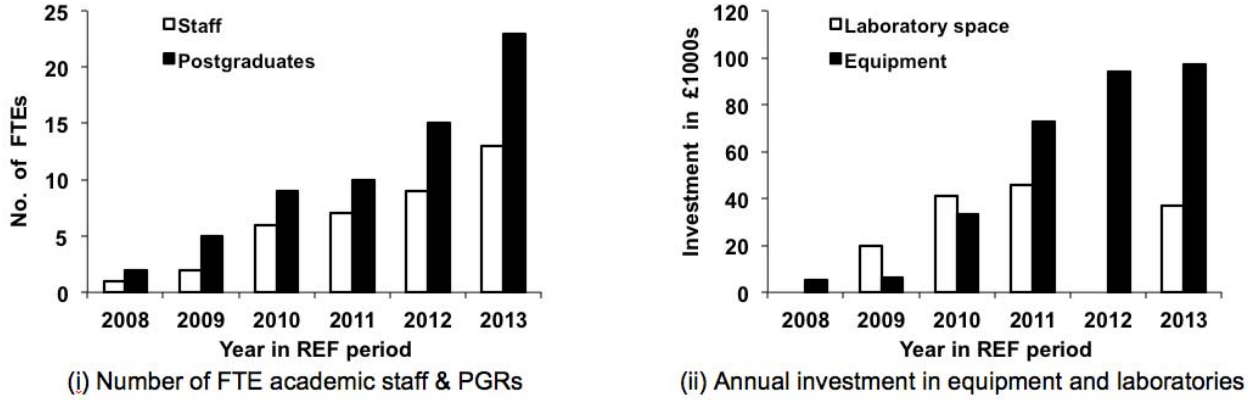
Institution: Bournemouth University (BU)
Unit of Assessment: UOA 4
a. Overview

Following RAE 2008, we set out to build a research-focused department. With strong university support, backed by an investment in excess of £1 million, we have produced a rapid transformation of the unit's research profile. This is evidenced by the four key indicators shown in Figure 1: (a) the appointment of a team of talented early career researchers (10 FTE), supported by senior staff in leadership roles (2 FTE plus 1 Category C Clinician); (b) the recruitment of a strong cohort of postgraduate researchers (23 FTE); (c) the creation of greatly increased laboratory space; and (d) investment in advanced research equipment. These resources have been targeted to ensure the phased development of two distinctive research programmes — first in **Cognitive Science** and then in **Health and Wellbeing**. This has resulted in a step-change in high-quality outputs, a thriving graduate research training programme, a marked up-turn in grant-seeking activity, and a corresponding but more gradual increase in research income.



(i) Number of FTE academic staff & PGRs

(ii) Annual investment in equipment and laboratories

Figure 1: Investment in staff, postgraduate researcher, laboratories, and equipment 2008-2013

b. Research Strategy

Current Strategy

We have pursued a multi-pronged strategy, designed to mature our research capability and to ensure its long-term sustainability:

1. **Planning a distinctive research profile with strength-in-depth.** Our aim has been to build distinctive research expertise with critical mass in **Cognitive Science** and **Health and Wellbeing**. We chose these themes because they: (a) played to our pre-existing strengths; (b) offered ready opportunities for collaboration with cognate disciplines at BU, including those based in the School of Design, Engineering and Computing (DEC), in which Psychology is located, and in the School of Health and Social Care (HSC); and (c) afforded potential impact pathways consonant with RCUK priorities such as dementia, mental health and e-health.
2. **Investment in high quality staff.** BU has steadily increased our staffing budget (Fig. 1(i)), allowing us to appoint: (a) a cohort of promising early career researchers (ECRs) who demonstrate clearly formulated long-term research plans; and (b) a smaller number of more experienced staff to provide research leadership for our laboratory groupings. Typically, both our ECRs and more senior staff have had postdoctoral experience in well regarded UK, EU and overseas research departments (e.g. Angele, UCSD; Balaguer-Ballester, Heidelberg; Gosling, Birkbeck; Kirkby, Southampton; Parris, Oxford; Weiner, Freiburg). Consequently, they bring strong research profiles and high levels of methodological expertise to their new posts.
3. **Creation of sustainable capability in key research methodologies.** This recruitment strategy means staff have real expertise with research technologies in which they specialise. For example, our eye-tracking and VR capability is distributed amongst several researchers with overlapping and complementary skills in using these systems, acquired in various internationally recognised laboratories (Angele, Bate, Gregory, Kirkby, Weiner). Similarly, in 2013, our new EEG laboratory was commissioned by the two experienced cognitive science researchers

appointed to develop it (Gosling, He). In both cases, the research programmes are facilitated by dedicated support from technical staff, selected for their relevant specialist expertise.

4. **Capital investment in research laboratories and equipment.** In building the Department's profile, it has been axiomatic that sustainable research requires excellent modern laboratory facilities. Accordingly, BU invested over £350k during the assessment period to create appropriately equipped laboratory space (Section d.). We currently operate 3 eye-tracking systems (2 static; 1 mobile), 2 virtual reality laboratories, several kitchens to support our work on eating, a mobile EEG facility and a new EEG laboratory.
5. **Building external research collaborations.** We always encourage new staff to retain links with ex-colleagues and to develop new, sustainable collaborations (Section e.). As a consequence, the Cognitive Science group has long-standing connections with the Centre for Visual Cognition in Southampton, Rayner's eye tracking laboratory at USCD and the Bernstein Centre for Computational-Neuroscience, Heidelberg-Mannheim. Likewise, members of the Face Processing Laboratory collaborate with Eimer's team at Birkbeck University, which recently installed an EEG system similar to ours. Seed-corn funding has been used to maintain Parris' imaging link with Exeter and to begin collaboration with the local NHS MRI unit.
6. **Internal support: doctoral training and society-driven research.** A thriving community of doctoral researchers is essential in creating a sustainable research culture. BU provides 50 competitive doctoral opportunities every year and, in the last two years, 11 of them have been awarded to Psychology (Section c.II). Competitive bidding for University pump-priming investment has accelerated major long-term research initiatives; for example, enabling us to establish — within the Cognitive Science programme — two research centres that act as flagships for our society-driven research agenda: these are The Centre for Face Processing Disorders (two post-doctoral researchers and two PhD studentships funded by BU) and the Wayfinding Research Centre (with a VR eye-tracking laboratory and 2.5 FTE studentships funded by BU).

Future strategy

We will begin 2014 with a committed group of research-active staff and postgraduates working in well-found laboratories. Our goal is to ensure that each of the laboratory groupings we support (Section d.) is recognised as an international centre of excellence by 2019. To this end, we plan to build on existing strategic research initiatives, increase the sustainability, distinctiveness and strength of our research groupings, and extend our presence in multidisciplinary research.

1. **Ensuring research sustainability**. The long-term sustainability of our research depends on maximizing our external research income and ensuring that we deliver on the impact agenda.

   Increasing external income. We are well aware that our research income during the assessment period has been low but, for a substantial portion of this time, we were assembling a critical mass of researchers able to operate successfully in the current, highly competitive funding climate. We have now employed the services of a consultant with an impressive track record of securing funding (Remington, RAE2008 Psychology 'Champion' for University of Southampton) to provide one-to-one staff mentoring and manage pre-submission quality assurance. This unique support has already borne fruit with £390k funding secured post-2013. Further mentoring comes from our other visiting professors (Parmentier, Balearics; Rayner, UCSD; Young, York) and, internally, from BU research management initiatives (e.g. Grants Academy; Researcher Toolkit; Research Blog). BU also supports participation in research networks by funding staff research visits and secondments, and visitors from the UK and overseas to participate in research seminars.

   Delivering the impact agenda. Recognising our responsibilities as publicly-funded researchers, and acknowledging the importance of impact for funding, we are continually developing ways of engaging with research users. As detailed in RA3, we work to extend the significance and reach of our work by public engagement initiatives and by building partnerships with NHS staff, charities, educational service providers and consultancy clients. As a signatory to the National Coordinating Centre for Public Engagement's Manifesto for Public Engagement, BU supports this approach through its dedicated engagement team which brings end-users and funders of research, and the general public, into contact with our research programmes. Public engagement initiatives include use of the print, broadcast, and social media and public events (e.g. Festival of Learning, 2013; Eating Disorders Week, 2013; Psychology@BU, 2009).

2. **Strengthening and extending work in distinctive research domain**. Within our current research groupings, we will target appointments to increase the number and size of our specialist research laboratories. We will prioritise strengthening our Health and Wellbeing grouping with posts in three areas of major social significance: Normal and Abnormal Eating, Lifelong Wellbeing and Clinical Psychology. Our Cognitive Science grouping already supports separate laboratories researching Visual Cognition and Face Processing (Section e.). Expansion will be driven by the increasing recognition of our expertise in advanced cognitive science methodologies, particularly VR, eye tracking, and EEG/ERP, and by further cross-disciplinary initiatives (cognitive work addressing key RCUK agendas in dementia and health is already under way). Some staff absent from this submission work in these areas; our staffing policy (Section c.) is designed to ensure that they are returned in the next REF.
3. **Developing a multidisciplinary research presence.** Psychology's Cognitive Science and Health and Wellbeing groupings feature very prominently in three of the eight BU Strategic Research Themes (Creative, Digital & Cognitive Science; Health, Wellbeing and Society; Ageing and Dementia). In the next three years we will engage fully in interdisciplinary working around these themes, which will allow us to respond rapidly, collaboratively and effectively to changing research priorities and new initiatives. For example, because electronic systems play an increasingly important role in health and wellbeing, we are already well advanced with plans for a pan-University Centre for e-Health, Internet Research and Practice (CHIRP). This will enable our researchers to undertake multidisciplinary research, supplementing existing health collaborations with the BU Dementia Institute and the BU Department of Mental Health, and building new links with DEC groupings (e.g. in Computer Science). This work will be underpinned by BU's open access policy which supports on-line open access through its own repository and provides funding to make outputs freely and openly accessible.

c. People, including: I. Staffing strategy and staff development

University Context

BU is recognised as a Mindful Employer (http://www.mindfulemployer.net/), actively promoting diversity and equality. Its positive approach to the employment and career development of disabled individuals has been recognised by the Department of Work and Pensions' award of Disability Two Ticks Status. Our employment strategy also adheres to the Concordat to Support the Career Development of Researchers, implemented through the University's Concordat Action Plan, which received the European Commission HR Excellence in Research Award in 2013 for its achievements to date. BU abides by the provisions of the Fixed-Term Employees (Prevention of Less Favourable Treatment) Regulations (2002): its Code of Practice – Use of Fixed-Term Contracts gives clear guidelines for their use. In summary, BU is committed to creating an ethical, egalitarian workplace that values its staff and supports all aspects of skill and career development.

Training, informing, supporting and mentoring

In line with the BU ethos, we focus on career development support that increases capability and confidence in staff at all levels. We are creating a career framework that ensures: (a) successful ECRs achieve senior status; (b) senior staff can continue to build their careers; and (c) capable staff, whether of long-standing or early in their careers, produce research that meets our quality thresholds. A number of mechanisms are in place to achieve these goals:

1. **BU Researcher/Academic Development (BRAD) Framework.** This skills identification and training framework has its foundations in Vitae's Researcher Development Framework. In addition, DEC funds specialist instruction (e.g. in LISREL analysis, programming in R). Training is likewise readily available from the Psychology technical team (e.g. EEG experimentation and analysis, use of Experiment Builder, ePrime, Open Sesame).
2. **Informing**. BU's award-winning BU Research Blog (http://blogs.bournemouth.ac.uk/research; HEIST Awards 2012) plays a key role in creating an energetic, collaborative University-wide research culture. It acts as the portal for all information regarding funding opportunities, internal research and collaboration activities, and research events, additionally providing instant access to BU's central Research and Knowledge Exchange Office (RKEO) — a highly effective support team. A daily blog digest is fed to Psychology staff and PGR email accounts.

3. **Support for developing research bids**. In addition to the high-level support for bid preparation available in Psychology, BU's RKEO offers mentoring for promising researchers, including: (a) generous seed-corn funding and investment; (b) grant writing support from an external peer review panel; (c) targeted help in matching researchers to appropriate funders and potential collaborators; (d) staff training in specialist bid preparation (e.g. EU framework bids); and (e) a dedicated budget for open access publication costs. Practical departmental support for new initiatives, including data gathering and literature review, is available via our annual Research Apprenticeship Summer Scheme. The scheme has raised research productivity by providing targeted assistance to speed workflow and freeing staff time for more advanced work.
4. **Early career support**. We support the next generation of researchers: ECRs have light teaching loads and thus sufficient time to establish their research programmes. Within a month of arrival, a research briefing by a senior colleague introduces them to the comprehensive support framework we provide, including assistance with grant writing, internal peer review, funding for equipment purchase, study leave, collaborations and conference attendance (contingent on international publication). These measures, together with those described elsewhere, have been highly successful: 5 ECRs have achieved rapid promotion in the last two years.
5. **Mentoring.** In addition to visiting professorial appointments and internal support for grant writing, two NHS clinical researchers are actively involved in mentoring. **Cole**, a Consultant in Clinical Neurophysiology and Visiting Professor, mentors members of the Centre for Disorders of Face Processing; **Clarke** (Category C), a Consultant Clinical Psychologist and, until 2013, Dorset HealthCare University NHS Trust's (DHUFT) 'Research and Development Lead', offers mentorship to the Health and Wellbeing grouping, additionally leading her own research programme. Likewise, **Innes**, the Director of the BU Dementia Institute (BUDI), supports several dementia research collaborations with departmental staff.

c. II. Research students

The BU Graduate School manages a rapidly growing postgraduate population, the result of a bold initiative in which BU funds 50 new studentships annually, the majority of whom are match-funded by external organisations. This has catalysed the rapid expansion of the Psychology PGR cohort to 28 FTE (Fig. 1A), in part through our success in gaining funding from commercial, public and third sector organisations (e.g. Tianpei IT Ltd, NHS, Age UK). The BU scheme has also increased our participation in interdisciplinary research (e.g. with the world-leading National Centre for Computer Animation based in the Media School; the BU Business School; BU Dementia Institute).

1. **Training and informing.** Students are assigned to one of our laboratories on arrival (see Section d.), where they engage with staff with shared interests and great expertise. New supervisors must: (a) obtain the Graduate School's PG Certificate in Research Supervision; and (b) work in a supervisory team with experienced colleagues. In their first year of study, PGRs must attend training in psychological research methods, advanced statistical analysis, and generic research skills (e.g. project management, specialist equipment training, impact, presentation). Throughout registration, they must attend laboratory meetings, our external speaker seminar programmes and internal seminars. In an extension of its BU Researcher/ Academic Development (BRAD) Framework, BU's Postgraduate Research Development Programme is built on RCUK's Joint Skills Initiative and Vitae's Researcher Development Framework. In addition, the Graduate School has developed interactive online support (ResearchPAD) for students to run alongside seminars and workshops linked to the Framework.
2. **Supporting.** Our PGRs are encouraged to apply competitively for financial support from the Graduate School to undertake scholarly activities related to their research project (e.g. to present at conferences; to undertake placements; to organise academic conferences). In 2013, Psychology PGRs were awarded £4k to present papers at major research conferences (e.g. Kita at Sleep 2013, Baltimore; Laishley at the European Conference on Eye Movements, Lund, Sweden). PGRs also become part of the larger postgraduate body by joining (a) one of the BU research themes (thus engaging with an active multi-disciplinary research community), and (b) the Postgraduate Forum, with access to a dedicated area on the BU Research Blog.

3. **Monitoring.** The whole supervisory process is scrutinized within the School by the Postgraduate Research Committee, which meets six times a year to monitor progress and ensure quality. A senior member of the Department (Liu) and the School PGR Administrator work together to support students, ensuring a high-quality experience (e.g. required participation in internal annual conferences, with presentations judged competitively by independent experts).

d. Income, infrastructure and facilities

Physical Infrastructure

The establishment of well-found psychology research facilities has been an integral part of our strategy (Section b.). Since 2007, the School has invested over £300k in the fabrication of appropriately equipped laboratories. General facilities for cognitive science research include an 80m^2 purpose-built research environment, divided into several specialised laboratories for individual or small-group testing (see below). Additionally, three large dual purpose computer laboratories (250m^2) are regularly used for experimental testing. Much of our health and wellbeing research is conducted in the community, but five newly-commissioned research kitchens (100m^2) are used for the study of eating behaviour. Three dedicated technical staff commission and manage these facilities, providing laboratory support, programming and training as required. Finally, an annual budget (currently £10k) supports links to MRI facilities (currently Exeter University), the participant pool (currently £10k) and an extensive psychometric test library (currently £5k).

Functional infrastructure

Our physical infrastructure currently supports three functional research laboratories — smaller groups of staff and PGRs with similar interests. Two are in Cognitive Science (the Visual Cognition and Face Processing Laboratories); the third is in Health and Wellbeing. All researchers align themselves to one laboratory, but they engage in many collaborations — between laboratories, with cognate disciplines across the University, and with senior researchers in the UK and overseas (Section e.). Each laboratory runs a regular seminar series featuring internal and external speakers (from the UK, Europe and visiting scholars from further afield). Seminar attendance is always open to members of the University, encouraging the growth of an overlapping and flexible research network, and affording opportunities for intellectual and technical cross-fertilisation. These laboratories, associated staff and facilities are described below:

1. **Visual Cognition Laboratory** (Members: Angele, Balaguer-Ballester, Elsley, He, Kirkby, Parris, **Wiener** (Lead). The laboratory studies two broad themes (visual attention and memory; applied visual cognition) in three eye-tracking laboratories, two virtual reality (VR) laboratories and a new EEG laboratory. A mobile EEG system is also available. MRI facilities are currently accessible only outside the department. This laboratory currently also supports 10 PGRs and incorporates the newly-formed Wayfinding Research Centre. Research examining visual attention and memory uses behavioural experimentation, often combined with fMRI, EEG and computational modelling. This research aims (a) to develop a better understanding of fundamental mechanisms (e.g. neural processes underlying attention; working memory; interpersonal influences on attention; spatial learning), and (b) to apply the knowledge gained to improve provision for those with memory or attention difficulties (e.g. dementia; ADHD). Research in applied visual cognition explores how new visual information is integrated with existing knowledge and uses these insights to tackle real world problems (e.g. wayfinding; reading).
2. **Face Processing Laboratory** (Members**:** Bate, Gosling, Gregory, **Liu** (Lead). This laboratory brings multiple perspectives to bear on the analysis of mechanisms underlying the recognition of human faces: its overall aim is to provide commensurable neural and cognitive explanations of these complex psychological phenomena. Researchers use a combination of methods, including eye tracking (an additional mobile system), neuropsychological testing and EEG/ERP to examine (a) the electrophysiological markers of explicit and implicit face recognition, (b) expression-invariant face recognition, (c) the perception of statistical information in multiple faces, and (d) individual differences in face recognition, primarily through the work of the Centre for Face Processing Disorders.

3. **Health and Wellbeing Laboratory** (Members: **Appleton** (Lead), Clarke (Cat C), Williams). The goal of the Health and Wellbeing Laboratory is to contribute to a research-based understanding of processes underpinning physical and mental health, and thus to create and evaluate interventions that improve wellbeing. Appleton and Williams study healthy and disordered eating using a combination of experimental, psychopharmacological and qualitative methodologies. Clarke's research focuses on the development and evaluation of psychotherapies. This laboratory is closely allied to colleagues the School of Health and Social Care, and strategic appointments will be made to strengthen this link: we aim by 2016 to establish separate laboratories in Eating and Health, Lifelong Wellbeing, and Clinical Psychology.

Income

Rapid departmental growth initially limited grant-seeking activities because ECR staff were occupied with commissioning laboratories and familiarising themselves with the local research context. Income of £240k was been generated during the assessment period from a variety of sources including RCUK (ESRC, MRC), industry (Cisco Systems), public bodies (Bournemouth, Poole and Dorset, and Frimley Park NHS Trusts, École des Mines), and charities (Nuffield Foundation, Army of Angels). Departmental income-seeking activity is now on an upward trajectory as we recruit more staff, mentor existing staff and develop an immersive research culture. The success of this strategy is evident from the fact that 44 bids have been submitted since January 2012 of which 13 were funded (with 10 pending): spend will begin in 2014. Moreover, we anticipate that senior staff will build on their previously demonstrated competence in obtaining grant funding to enhance this trajectory further. Clarke (Cat. C) is the PI at the lead NHS research site for REFRAMED, a £1.998m MRC EME randomised controlled trial of a new intervention for treatment-resistant depression. Prior to joining in 2012, Liu had been funded by the KC Wong Foundation, the EU Marie Curie Programme, the Wellcome Trust, the Royal Society and ESRC. Likewise, Appleton has received funding from a number of sources including MRC, the Leverhulme Trust, the Harold Wyam Foundation and PfG Delni. In fact, prior to joining BU, post-2008 appointees had generated ~£1m of grant funding, ~£700k of which was as principle investigator.

e. Collaboration and contribution to the discipline or research base

Collaboration

Our researchers make a distinctive contribution to the discipline, often working with colleagues around the University, within the UK, and internationally. We regard collaboration as critical in ensuring the sustainability and growth of our research programmes.

1. **Visual Cognition Laboratory.** Working with Parmentier (University of the Balearic Islands), Maybury (Western Australia), and Campos (Complutense), Elsley has used cognitive and MEG analyses of feature binding data to challenge existing models of episodic memory. Xun He's work has revealed the effects of social salience and interpersonal memory on attention (with Humphreys, Oxford; Chen, Tokyo; Han, Peking). Parris is extending current understanding of executive control by using hypnotic suggestion to modify Stroop performance in adults (with Dienes, Sussex) and in older bilingual participants (with Green, UCL; Weekes, Hong Kong, Abutalebi, University Vita-Salute San Raffaele, Milan). Balaguer-Ballester was amongst the first to examine the neurodynamics of the auditory and prefrontal cortex in contextual encoding, working closely with Rupp (Heidelberg) and Durstewitz (Director, BCCN, Heidelberg-Mannheim). Weiner's theoretical research programme on spatial cognition (with Hills, Warwick; Hölscher, ETH Zürich; Wolbers, Magdeburg) has been successfully applied to improve wayfinding in complex built environments. Kirkby, with Liversedge and Donnelly (Southampton), and Rayner (UCSD) conducted the first study to provide systematic data challenging the magnocellar theory of dyslexia by comparing eye movements and binocular disparity in typically-developing and dyslexic readers. Angele (also with Rayner, USCD) showed for the first time that readers process parafoveal information about an upcoming word, in addition to the foveal information about a currently fixated word.
2. **Face Processing Laboratory.** Bate's analysis of individual differences in face recognition has produced both a diagnostic tool for identifying prosopagnosia and a face recognition training method for children with developmental prosopagnosia. Her work with Cole (Visiting

professor/Poole Hospital NHS Foundation Trust) first revealed face processing difficulties in people with Möebius syndrome, a rare congenital neurological disorder characterised by facial paralysis. Gosling (with Eimer, Birkbeck) uses electrophysiological markers to reveal implicit face recognition in prosopagnosic individuals reporting no knowledge of previously seen faces. This work forms the foundation of a neural model that can account for variation in face recognition skills. Liu's research provides a counterpoint to Bate's and Gosling's by pinpointing factors underlying 'super-ability' in face recognition. Additionally, with colleagues in Asia (Chen, Beijing; Han, Peking) and the UK (Young, York; Lander, Manchester), he is analysing the processes that allow faces to be recognised regardless of expression and orientation.

3. **Health and Wellbeing Laboratory**. Appleton's work on eating behaviour focuses on population- and individual-level interventions to improve nutrition (with Brunstrom and Rogers, Bristol; Grippo, Illinois; Johnson, Iowa). Williams is developing a novel web-based early intervention programme to prevent major eating disorders in young women (e-Health) and is establishing a cross-disciplinary Centre for e-Health, Internet Research and Practice (CHiRP). Clarke is Director of the Bournemouth University Department of Mental Health, whose mission is to advance research-based advances in mental healthcare. Her research on dysfunctional cognitive processes (with Bond, Goldsmiths; Gillanders, Edinburgh; Gratz and Lejuez, Maryland) underlies her systematic evaluation of psychotherapeutic interventions for hard-to-treat patients (e.g., with Lynch, Southampton; Wilson, Mississippi).

Contribution to the discipline

1. **Visual Cognition Laboratory.** Members receive regular invitations to speak at workshops, conferences, and symposia (e.g., Angele: German Society for Cognitive Science, Potsdam; Kirkby: keynote address, British Ophthalmology Society 2013; Wiener: British Neuroscience Association), and at other universities (e.g. Balaguer-Ballester: Vancouver, Nottingham, Manchester; Kirkby, Max Plank Institute, Berlin, Oxford University; Parris: Hong Kong, Southampton). Weiner has twice been invited to the prestigious Strüngmann Forum, an international seminar bringing together scientists to discuss research themes transcending disciplinary boundaries (http://www.esforum.de). The group regularly reviews for journals spanning visual cognition and computational neuroscience, and several members act for RCUK (Balaguer-Ballester, Elsley; Parris, Kirkby). Balaguer-Ballester is guest editor of a special issue of Frontiers in Computation Neuroscience (where he serves on the editorial board).
2. **Face Processing Laboratory.** Members have given invited research presentations at several universities and taken part in conferences and workshops (e.g., Liu: Keynote Address, 75th Convention of the Japanese Psychological Association, Nihon University, Tokyo; Chinese Academy of Sciences, Chinese Normal University; Bate: Encephalitis Society Professional Seminar, 2013; Symposium on Developmental Prosopagnosia, Birkbeck).
3. **Health and Wellbeing Laboratory.** Appleton receives frequent invitations to present her research (e.g., Swedish Royal Academy of Sciences; European Society of Parenteral and Enteral Nutrition) and was recently guest editor of a special issue of Appetite. Clarke has achieved impact as a keynote speaker (e.g. 4th International Cognitive Analytic Therapy Conference, Kraków, Poland, 2011) and national trainer for the new cognitive-behavioural therapies on which her research has focused.

To summarise, we have provided clear evidence that, since 2008, we have created a growing and dynamic research culture, essentially from scratch. We believe that this is evident in the quality of our outputs, the facilities available to our staff, the strength of our collaborative links — both in the UK and overseas — and in the societal impact of our research. The next key step in sustaining and expanding our research capacity, and extending our reputation as a research unit, will be to increase our external research income. We are confident that the strategy and structures we have put in place will deliver income growth, allowing our growing cohort of researchers to raise our profile further within the next five years. We shall realise these goals by maintaining our distinctive strengths and our commitment to high quality research that delivers theoretical advances and significant societal benefits.