Institution: Heriot-Watt University

Unit of Assessment: 4 Psychology, Psychiatry and Neuroscience

a. Overview

The research in Psychology described in this Unit of Assessment is carried out entirely within the School of Life Sciences, by staff who operate as a distinct and cohesive department within the School. Psychology at Heriot-Watt University has grown rapidly since 2008, due to strategic investment in revitalisation; the growing maturity of the research of staff who were early career researchers at that time; and our success in attracting new recruits with strong research portfolios. The 13 staff being submitted include seven appointed during the last two years; new growth that reflects increased University commitment to the discipline. As a result, we are now able to target research activity in three key areas, with a vision of rapidly increasing the volume and international reputation of our research in each one. These areas are: **Ageing, Cognition and Neuropsychology; Cognitive and Social Development;** and **Attention, Perception and Action**. Researchers working in each area span a range of levels of seniority and experience, enabling independent research leadership within each one.

Research leadership is the overall responsibility of the Head of the Psychology Department (currently **Green**, to be succeeded by **Morrison** at the end of 2013), and the Research Co-ordinator (**Milders**). The Head of the Department is a member of the School Management Group (SMG), and both are members of the School Research Committee. This ensures that Psychology has a distinctive voice in the SMG, which advises the Head of School on resource allocation, and in the Research Committee, which is responsible for research support, monitoring and training, and for allocating studentships. The Department's location within the School provides it with substantial benefits through pooling of both senior management roles and professional support functions.

b. Research strategy

Heriot-Watt embarked on a new strategy for research intensification in 2008. A number of interdisciplinary, cross-School research themes were established, together with the Global Platform for Research Leadership. This is a centrally funded scheme for supporting additional research leadership posts in any of the University's disciplines at any level provided potential is clearly demonstrated. It is advertised continuously, and Psychology has been able to identify candidates, gain approval and recruit quickly through the initiative..These appointments are open-ended and can be made at any level from early-career Lecturer to Chair. Staff appointed through this RL route have substantially lighter teaching and administrative loads than normal, subject to progress towards achieving their planned research targets. Five of the submitted Psychology staff were appointed through this route, all since mid-2012. The University introduced an enhanced PGR studentship scheme in 2012, and this supports between 50 and 80 additional research students per year across the University with three-year studentships funded at full RCUK rates. The ability of the Psychology Department to attract promising PhD students is demonstrated by the fact that six of the 11 studentships awarded in the School of Life Sciences in the first two years of the scheme went to Psychology, which is only one of four departments in this School.

Before 2011, the Psychology Department aimed to support the largely distinct research activities of a small number of individuals working in separate areas of the discipline, who had been appointed to ensure coverage of an accredited teaching syllabus. The success of the subsequent recruitment drive through the Global Platform Research Leadership scheme has meant that we are now concentrating research expertise in specific areas at leading edges of the discipline. Each of the three research areas described in (a) above has been supported by at least one Research Leadership (RL) appointment, and has created new synergies with existing staff in each one.

The Cognitive and Social Development area has grown out of the Cognitive Development and Education grouping described in the RAE2008 submission, strengthened by the appointment of **Rajendran** to a Readership in 2012 as an RL. Coming from the University of Strathclyde, he brings expertise in language and cognition in autistic individuals, and the application of knowledge of these processes to the development of assistive information technology. He has experience in multi-centre collaborations including psychologists and computer scientists, and has been a co-applicant on RCUK grants (held outside this UoA) totalling £1.2M in value since 2008. His research complements that of **Stewart**, who works on language, emotional and perceptual processing

across the autism spectrum, supported by grants from US and UK charities amounting to £34K over the last five years. On the basis of the strong track records of both these researchers, and the potential synergies arising from collaboration between them, our five-year strategic aim, with colleagues in Computer Science, is to establish Heriot-Watt as an internationally leading centre for research on ASD and on technology for helping individuals with this condition to develop greater social and cognitive skills. **McGuigan's** work on imitation and cultural diffusion in early childhood has extended into research that integrates data on these processes in humans and in non-human primates to provide novel insights into the evolution of human capacity for culture. She has followed a widely cited 2009 paper (output 2), with a series of further publications in internationally leading journals. Much of her work has been in partnership with **Whiten's** group at St Andrew's, and its international collaborators. In 2013, this research network won a £2.7M grant from the Templeton Foundation, which will provide RA and other support for **McGuigan's** research, and a strong base for our five-year strategy of securing an independent reputation for Heriot-Watt as an internationally leading centre in research on the evolution of cognition and culture. Since 2008, **Muldoon** has established an international reputation in the field of early childhood numeracy, marked by an invitation to contribute a review to Trends in Cognitive Sciences (output 2). During the period 2008-2013, he has been supported by an ESRC award of £125K. One element of his research programme is cross-cultural, comparing numerical cognition in Chinese and British children. Our five-year strategic aim in this area of major policy concern in Scotland and the UK is to achieve impacts for this work in educational practice and to obtain funding for it from Government bodies. **Harper** is an early career researcher and was appointed as an RL. Her doctorate on the consequences of parental bereavement for psychological and physical health led to a major publication in the British Medical Journal (output 1), which was selected as Editor's Choice in its issue. This is an under-researched area, and **Harper's** novel theoretical position is that recovery from bereavement depends upon processes of social and cognitive development that enable a person to create new representations of their experience of loss. These processes are still poorly understood and are the subject of **Harper's** research.

The Ageing, Cognition and Neuropsychology area is a new strategic development, building on the appointments in 2012 and 2013 of **Morrison** (from Leeds, to a Chair), **Milders** (from Aberdeen, to a Readership), **Gow** and **Dewar** (both from Edinburgh, to RL Lectureships). These appointments have added to **Potter's** expertise to create a group with strongly complementary research skills. **Morrison's** research has focused on lifespan memory function, from early childhood to old age, with the aim of achieving a better understanding of how autobiographical memory changes as people get older. Her key recent papers, published or in press, are in QJEP, PLOS ONE and Aging, Neuropsychology & Cognition. She recently held an ESRC grant (£92K) with Conway (City University), which has led to a publication in press in QJEP. The selection of **Milders'** outputs illustrates the integrative nature of the work that he has published since 2008, spanning neuropsychology (outputs 1, 3) and social cognition (outputs 2, 4). Recently, he has moved the focus of this research to the use of cognitive strategies in the care of dementia, and, with an NHS collaborator, has obtained two grants totalling £126K from the Scottish Government for projects on developing effective strategies of care for dementia sufferers. **Gow** held a post-doctoral Fellowship in the Centre for Cognitive Ageing and Cognitive Epidemiology at the University of Edinburgh, where he had gained expertise in epidemiological research on the roles of lifetime factors such as physical activity, occupation and diet in determining the outcomes of cognitive ageing. He has published 12 papers as first author since 2008, and those selected for submission illustrate the scope of his work. One paper reports results from a major new collaborative study with neuroscientists, which demonstrates correlations between variables of lifetime experience and structural changes in ageing brains (output 1). **Dewar** has recently joined us from the Human Cognitive Neuroscience Unit at the University of Edinburgh, where she held two competitively awarded 3-year personal research fellowships from Alzheimer's Research UK and then from the Royal Society of Edinburgh and Lloyd's TSB Foundation for Scotland. During this 6-year period, she bid successfully for six external grants totalling £535k, from Alzheimer's Research UK, RSE, AgeUK, Alzheimer's Society, Epilepsy Research UK and Scottish Crucible, Her research focuses on memory, forgetting and memory improvement in healthy people and in patients with memory impairment, including Alzheimer's Disease. She has shown that healthy people and patients with severe memory impairment can retain new memories for much longer than usual if the memory consolidation processes is shielded from interfering external information

(i.e. by resting quietly), and has published many of these findings in a recent major paper in Psychological Science (output 1). **Potter's** research uses novel experimental methods, based on motor control and visual search paradigms, to study healthy cognitive ageing.

In establishing this new research area, we have created a distinctive profile of research expertise and of collaborative contacts with both researchers and clinicians, which will position staff to take advantage of funding initiatives in this area of increasing social and economic importance, such as Horizon 2020 and the cross-council initiative in Lifelong Health and Wellbeing. Our five-year objective is to establish Heriot-Watt as an internationally leading centre for research on cognitive ageing and neuropsychology, which will be distinctive in integrating work on both healthy and disordered ageing and in its focus on the application of new technology to intervention strategies.

The Attention, Perception and Action area has grown out of the earlier Applied Cognition and Vision grouping, with the appointment of **Buckingham** as an RL to a lectureship in 2013 bringing a shift in the balance of its interests. **Buckingham** is an early career researcher, but is submitting a full set of four outputs. He joined us from a postdoctoral fellowship at the University of Western Ontario, where he had been supported from 2008 to 2012 by competitively awarded fellowships from the Department of Foreign Affairs and International Trade Canada, the Heart and Stroke Foundation of Canada, and the Natural Sciences and Engineering Research Council of Canada. During the same period he published 12 first-authored papers, many in neuroscience journals (e.g. outputs 1, 3, 4). His forward plans for his research include further work on fundamental processes of motor learning, together with clinical and educational applications of the research to recovery from stroke and surgery and to surgical training**. Lansdown's** research since 2008 has continued to apply basic knowledge of processes responsible for divided attention to problems of safe design of vehicle and road technology, as well as establishing a novel research programme on the effects on driving safety of attention to different types of conversations with passengers (output 1). **Green** has continued his research on the perception of textured surfaces and visual search within natural textures, publishing work supported by the EPSRC (£908K to the partnerships with Computer Science and Mechanical Engineering colleagues over the period). The five-year strategy for this area is to build on our contacts and expertise in interdisciplinary collaboration with engineers, computer scientists and clinicians to secure significant independent funding from Research Councils, and government and commercial bodes, for both basic and applied work in these areas.

Members of the Department collaborate across the boundaries of the three research areas. For example, **Stewart** is currently working on pilot projects with **Lansdown** on personality and driving style, and with **Milders** on typical and atypical perception of intentions. **Potter** and **Buckingham** work together on age-related changes in the visual control of walking, and are submitting funding proposals on this topic to the EPSRC. Co-location of labs and offices has aided this cross-fertilisation, together with our programme of monthly Departmental research seminars and workshops.

We will continue to increase capacity through recruitment of staff to all three areas, and to achieve internationally leading profiles of research in each one. To these ends, we have adopted the following targets: (1) From a baseline of seven in 2011, we have set a target to grow our research-active staff complement to 20 by 2018, specifically by recruitment through the Global Platform for Research Leadership scheme. In the first two years of this seven-year period, we have made five such appointments. This result gives us confidence that a total of 13 appointments over the seven-year period can be achieved, even before taking into account the effect of growth in catalysing new recruitment opportunities. At the time of writing, discussions are taking place with a further applicant for appointment to a Chair through the scheme. (2) Publication of research in journals with the strongest possible international reputations, to be achieved through pooling of experience in publishing and through mentoring of early career staff, both at Department and research area level. (3) A step increase in research income per member of staff, to be achieved by (i) building on appointments of research leaders and the synergies they create with existing staff, and more specifically by (ii) exploiting the opportunities for networking with clinicians that recent appointments have brought in order to attract funding from the MRC, the NHS, Government departments and other sponsors of research relevant to health. (4) An increased focus by staff in selected areas (e.g. autism and education, dementia care, driving and road safety) on achieving social and economic impact for their work, and to lever new streams of funding from these impacts.

c. People, including:

i. Staffing strategy and staff development

Success will require us to proactively seek candidates for additional Research Leadership posts, at all levels of seniority, who can add to our established research areas. Sustainability of this growth will be achieved by building the leadership role of senior members of areas, with a view to developing potential future leaders of the discipline as a whole, and by providing the resources and intellectual space for research that will be needed to retain staff.

Through the University's Personal Development Review system, academic staff set research and other career objectives annually, and indicate resource needs to managers, Staff appointed through the Research Leadership route have agreed start-up budgets to support initial resource needs. Otherwise, funding support for pilot projects and conference travel is provided from a devolved Departmental research support budget. For early career researchers, a mentoring system provides support in grant writing, publication and other research activities.

Support for research career development for staff and PGR students in the University is coordinated by the Research Futures programme within our award-winning Centre for Academic Leadership and Development (Times Higher Education awards for 'Outstanding Support for Early Career Researchers', 2010 and 'Leadership & Management' 2013). Research Futures offers a full programme of staff and PGR student training courses and opportunities. HWU was amongst the first in the UK to receive the "HR Excellence in Research" recognition from the European Commission in 2010 (renewed in 2012), This award recognizes the positive actions that the University has taken to support the career development of researchers and to implement the principles of the Concordat to Support the Development of Researchers. The Postgraduate Certificate in Academic Practice is offered to all incoming early career staff as part of a three year probationary period, and provides training in key research skills. In addition, Research and Enterprise Services (RES) runs workshops and individual advice sessions that are aimed at developing researchers' skills in attracting external funding and gaining social and economic impact for their work.

Heriot -Watt created and runs the Scottish Crucible as a pan-Scotland professional and personal leadership programme, funded by SFC and the Scottish Government. The scheme enables talented early career researchers from any discipline to explore innovation, policy, and interdisciplinary collaboration, and expand their creative capacity and problem-solving potential in new directions. **Dewar** was selected competitively for Scottish Crucible 2012, and together with collaborators, secured a small grant to develop a first-aid app for bystanders. Heriot-Watt was the first HEI to develop an institutional version, Heriot-Watt Crucible, and launched the first European Crucible in 2012. Of four Psychology staff who have participated in Heriot-Watt Crucible to date, two have obtained seedcorn funding through it, for collaborative projects on child numeracy (**Muldoon**) and assistive technology for dementia care (**Milders**). In addition, two staff have participated in the highly competitive Scottish Converge Challenge competition. This is a programme designed to embolden new entrepreneurs, which is led by Heriot-Watt on behalf of all the Scottish Universities and research institutes, and attracts over 90 applications for 30 places annually. We expect that the knowledge gained in the programme will provide incentives in the future to develop commercial outcomes from our research.

Heriot-Watt University has a robust framework to promote equality and diversity, and during 2013 received the Athena Swan Charter Bronze Award recognising excellence in STEMM employment for women in higher education. A University-wide Equality and Diversity Advisory Group oversees and advises on operational and legal compliance matters, interpretation and prioritisation of the equality agenda, and ensures effective linkages across the University's governance structures. An action plan has been adopted that will address a number of areas that were identified in the application for the Athena Swan award, setting out University- and School-level measures concerning recruitment to academic posts, the use of fixed-term contracts, progression to promoted posts, and uptake of and support for flexible working arrangements. Women make up 46% of the Psychology staff in this submission, and 38% of those at Grade 9 or 10. These figures indicate a need for further attention to research career support for women, over and above the flexible working provisions that two staff have used recently following maternity leaves. Over the coming five years, these issues will be addressed through a Departmental action plan, developed within the framework of University and School plans.

ii. Research students

The period 2008-2013 has seen a rapid increase in recruitment of research students to Psychology. The population of active full-time PhD students in Psychology rose steadily from five in 2008/09 to eight in 2012/13 (from 0.57 to 0.77 per staff FTE). In the early years of the REF period, we achieved a greater rate of doctoral graduations than would be expected from those figures by co-supervising three students in collaboration with Computer Science and Electrical Engineering. These students were supported by EPSRC studentships, as was one student who was supervised entirely within Psychology. There will be a marked increase in numbers of PhD completions between 2013 and 2018, following investment in internally funded studentships. This took place in two phases. The first, limited scheme recruited three students to part-scholarships in 2010, and these students are now writing up. Secondly, in 2012 and 2013, a total of seven University scholarships (see above) were awarded competitively in Psychology. Our aim during the period 2013-18 is to establish a population of at least 30 PhD students. This will be achieved both through increased success in obtaining externally funded studentships and through attracting strong candidates to competitions for internally funded University scholarships. While we encourage the allocation of scholarships to relatively junior staff to assist career development, this is a secondary aim in relation to attracting the best students to the most promising projects.

All research students are allocated to a first and a second supervisor. The School operates a rigorous system of review of research students' progress, co-ordinated by the Director of Postgraduate Research Studies (who is a member of the School Research Committee).In addition to routine reviews by their supervisors, each student is required to submit a substantial report on their progress half-way through each of their three years of research, and at the end of the third year, and to be interviewed about the report. These reviews are conducted by two members of staff who are independent of the supervisors, and their reports are considered at an annual School Progression Board, where a decision is made whether to continue enrolment for another year. Research students are encouraged to take part in the regular monthly meetings of the Department to discuss or present their current research, and to present their work at School research seminars. The University has invested £9M in a new Postgraduate Centre, which opened in 2010 and houses an auditorium lecture theatre, seminar, study and social spaces, and advanced video-conferencing facilities, primarily for postgraduate students.

The Research Futures programme (see (i) above) provides skills training for research students, covering organisation skills, literature survey, report writing, IT, team and project management, oral presentation, career development, research ethics, business awareness and intellectual property issues. All Psychology research students take advantage of these courses, and many participate in the Postgraduate Research Conference that the University PGR community organises annually with staff support. Research students are also eligible, and encouraged, to participate in the staff training offered through the Research Futures Programme and RES described in c (i). Further training and career development opportunities are provided at School level, through a programme of workshops for PhD students. In a new initiative, led and organised by PhD students, there will be an inaugural School postgraduate conference in 2013. PhD students are also invited to present and discuss their work at the monthly research meetings of staff and students in the Department. The mutual obligations and responsibilities of research students, supervisors and the University are formalised in the University's Postgraduate Research Student Code of Practice, which fully takes into account the requirements of the Concordat.

d. Income, infrastructure and facilities

During the period, staff held 33 competitively awarded grants, which supported a total spend of £632K. These were drawn from a wide portfolio of funders (ESRC, EPSRC, Wellcome, Leverhulme, the Scottish Government, the British Academy, Autism Speaks (a US charity), the Lottery Fund, and four other UK charities). While many of these awards were relatively small, they have been used in a cost-effective way to support published research of high quality, for example on childhood numerical skill (e.g. in Developmental Psychology and the Journal of Experimental Child Psychology) and on cognitive processing across the autistic spectrum (e.g. in Autism and in Cognition). Research by members of the Department has also had substantial support from funding awarded to the groups with which they collaborate, held by PIs in other UoAs or institutions. These grants, from EPSRC, ESRC, the Templeton Foundation and the Scottish Government, were noted in (b) above, and total £4.9M. This support has led to high-quality published research, co-authored by members of the Department, in the areas of visual texture

perception (e.g. in Vision Research and the Journal of Vision), language processing in autism (e.g. in Developmental Science and Cortex), and imitation and conformism (e.g. in PLOS One and Philosophical Transactions of the Royal Society).

We have six labs, with a total floor space of approx. 110 m^2, equipped with a driving simulator, two remote eye trackers, psychophysiological instruments, facilities for video capture, analysis and editing, a suite of PCs for running experiments under e-prime, a test library, and observation rooms. Through an investment of £70K, a human motor control lab, equipped with facilities for kinematic and kinetic recording and analysis, is currently being set up, and will support **Buckingham's**, **Gow's** and **Potter's** research in the first instance. Through their research collaborations with other Heriot-Watt departments, **Green** and **Rajendran** have enjoyed access to major lab facilities and equipment funded through major EU, SFC and EPSRC grants totalling over £5M. In Computer Science, the Texture Lab provides state-of-the-art computer graphics software, advanced display technology, and facilities for psychophysical research, and the Interaction Lab offers access to advanced software for creating interactive animations. In Mechanical Engineering, the Virtual Reality lab provides a driving simulator and other VR equipment, and facilities for EEG and other psychophysiological measurement. Since his appointment, **Buckingham** has established links with both the Texture and the Virtual Reality labs, and will have access to the same facilities. We can use further specialist lab facilities within the School of Life Sciences, and particularly the human exercise physiology lab, located in the Sports Academy, a £6m facility developed jointly on the campus by the University and the Heart of Midlothian football club.

The University has established Codes of Practice governing research integrity and good practice, covering collaboration, authorship, research management and investigation of allegations of misconduct. Each School has an Ethics Committee, which reviews applications for ethical approval of research by staff and research students, and these Committees report to a University Research Ethics Committee that includes external membership. Training in ethical research practice is provided to all academic staff. A University Policy governs knowledge transfer, commercialisation and intellectual property, and expert advice in these areas is provided by RES.

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e. Collaboration or contribution to the discipline or research base
i) Academic collaboration
The following external collaborations have led to joint grant awards and/or publications during 2008-2013. Cognitive and Social Development: **Rajendran** – Edinburgh (Logie, M Corley, Branigan); Institute of Education (Porayska-Pomsta); Birkbeck (Smith); Liverpool John Moores (Law); North Florida (Alloway); Queensland (Ham). **Stewart** – Edinburgh (Deary, Ota, Austin, Stanfield); Queen Margaret University (Peppe, Cleland); Oxford (Ebmeier); UCL (Fugard); Glasgow (Pollick, Melville); Newcastle (Grube). **McGuigan** – St Andrews (Whiten, Cladierie, Laland). **Muldoon** – Lancaster (Lewis, Towse). **Harper** – Glasgow (O'Connor), Stirling (O'Carroll). Ageing, Cognition and Neuropsychology: **Morrison** – City (Conway), Boulogne (Moulin), Aarhus (Cole). **Milders** – Tampere (Hietanen); Aberdeen (Sahraie, Bannerman); Northumbria (Ietswaart); St Andrews (Sprengelmeyer); Groningen (Spikman); Oxford, Dundee and Aberdeen Medical Schools (Kumar, Steele, Bell, Currie). **Gow** – Copenhagen (Avlund, Mortensen); Edinburgh (Deary, J Corley); Edinburgh Medical School (Starr, Wardlaw); Institute of Occupational Medicine (Crawford); MRC NHSD (Kuh, Richards). **Dewar** – Edinburgh (Della Sala); Oxford Medical School (Butler); Exeter Medical School (Zeman); Warwick (Brown); Glasgow (McGowan); Aberdeen (Mort); Ancona Medical School (Pesallaccia, Provinciali); Missouri (Cowan); Cuban Neuroscience Centre (Fernandez-Garcia). **Potter** – Strathclyde (Grealy). Attention, Perception and Action: **Buckingham** – Western Ontario (Goodale, Christiancho); Western Ontario Medical School (Lebel, Faber); Bangor (Carey). **Lansdown** – Cork (Stephens). **Green** – Informatics, Prague (Filip).

The University's strategy of promoting and supporting cross-disciplinary research has contributed to the growth of research collaboration within Heriot-Watt between Psychology, Computer Science and Mechanical Engineering. Long-standing collaborations involve **Green** (research on visual texture and visualisation with Chantler, and on cognitive processes in design with Ritchie) and **Rajendran** (research on assistive technology for autism with Lemon), while recent links have been made with other Schools by **Buckingham** (on robotics and perception of material properties), **Milders** (on assistive technology for old age), **Gow** (on housing environment as a factor in cognitive change) and **Dewar** (on assistive technology for first responders/first aiders).

Many staff join the Department early in their careers, and we encourage them to continue to

participate in networks that they built up during their doctoral and postdoctoral careers, while at the same time steadily developing their own independent profiles in the research community, and gaining new opportunities for collaboration. Advice and support for this is provided through the Personal Development Review and mentoring processes.

ii) Collaboration with commercial, public sector and third-sector bodies

The Department is developing solid links external to academia, especially with users. **Lansdown** engages with industrial and regulatory bodies concerned with road safety, is a member of the British Standards Institute Road Transport Informatics Committee (EPL/278), and has undertaken expert witness work. **Milders** is building links with the NHS on the basis of his collaboration with NHS Grampian in research on depression, dementia and brain injury, **Gow** has regular invitations to participate in meetings of research users organised by Age UK/Scotland. **Harper** is an academic/research advisor to the Bereaved Parents Support Organisations Network, and collaborates on a KE project with Delta Studios, Falkirk. **Dewar** has an honorary research contract with NHS Lothian, and close links with clinical neurologists and geriatric psychiatrists.

iii) Contributions to discipline

Committee positions. Trustee of the British Psychological Society, Chair of the BPS Cognitive Section 2006-2011, member of the BPS Research Board 2007-2013, Chair of the Education Board of the BPS (**Morrison**). Co-chair, Royal Society of Edinburgh Young Academy of Scotland (**Gow**); Member, Steering group, Institute of Transport Studies, Leeds (**Lansdown**).

Editorial service. Consulting Editor, Journal of Clinical and Experimental Neuropsychology (**Milders**); Lead guest editor, special issue of Journal of Aging Research (**Gow**); Guest Editor, Frontiers in Human Neuroscience (**Buckingham**); Review editor, Frontiers in Movement Science and Sports Psychology (**Buckingham**); Book review Editor, Cortex **(Dewar)**.

Conference organisation. Symposium organizer, Society for Neuroscience 2011 meeting, Washington DC (**Buckingham**); Symposium organiser, 15th European Conference on Personality, 2010 (**Gow**); Conference Committee member, Human Factors and Ergonomics Society European Chapter meetings, Berlin, 2010, Leeds, 2011, Toulouse, 2012; Driver Distraction and Inattention meeting, Gothenburg, 2009, 2011, 2013 (**Lansdown**); Symposium organiser, International Neuropsychological Society, Helsinki, 2009 and Buenos Aires, 2008; European Neuropsychological Societies meeting, Berlin, 2013 (**Milders**); Symposium co-organiser, SARMAC, Rotterdam, 2013; Plenary session co-organiser, SARMAC, Kyoto, 2009; Member of the BPS Standing Conference Committee since 2011; Symposium co-organiser, BPS Annual Conference, Stratford-upon-Avon, 2010; Symposium co-organiser, BPS Cognitive Section Conference, Southampton, 2008 (**Morrison**). Symposium organiser, Annual Meeting of Jean Piaget Society, Berkeley CA, 2011 (**Muldoon**); Symposium organiser and invited speaker, BPS Developmental Section meetings, 2009, 2012 (Rajendran); Invited Chair, Castang Foundation Meeting, Edinburgh, 2012 (**Stewart**);

Keynote addresses to conferences. 28th European Workshop on Cognitive Neuropsychology, Bressanone, 2010 (**Dewar**); Physical Cognition and Problem Solving workshop, Birmingham, 2012 (**McGuigan**); A-TEK conference, Copenhagen, 2012 (**Rajendran**).

Invited conference presentations. Joint Annual Conference of the British Psychological Society Developmental and Cognitive Sections, Reading, 2013; British Psychological Society 'Innovations in Neuropsychology' meeting, Edinburgh, 2011 (**Dewar**).1st World Conference on Personality, 2013; Workshop, Normal Aging and Plasticity Imaging Center, Zurich, 2013; 14th European Conference on Personality, 2008. UK Clinical Research Facilities Annual Conference, 2008 (**Gow**); Road Safety Scotland Annual Conference, Dunblane, 2011, BRAKE conference on young drivers, London, 2011 (**Lansdown**); Social Learning in Humans and Non-Human Animals: Theoretical and Empirical Dissections, Milton Keynes, 2012 (**McGuigan**); International Symposium on Neurorehabilitation, Valencia, 2009 (**Milders**).Royal Society for Medicine meeting on ASD, 2009 (**Rajendran**); Jean Piaget Society, Utah 2009, Bioconference Live, 2009 (**Stewart**).

International PhD examination. Universities of Extremadura (**Green**), Cork (**Lansdown**), Ghent (**Milders**), Western Australia (**Stewart**).

Other recognition of early career researchers. **Buckingham** has undertaken proposal review for the NSF (USA). **Harper** has presented her research findings to the Bereavement Research Forum and the Bereaved Parents Support Organisations Network.