Institution: Canterbury Christ Church University
Unit of Assessment: Sport and Exercise Sciences, Leisure and Tourism (26)

a. Overview

This submission largely comprises the research of the Department of Sport Science, Tourism & Leisure, incorporating the *Centre for Sport, Physical Education & Activity Research (SPEAR)*, which collaborates on funded projects across and outside the University, and *SportsLab*, an applied translational research service established in 2012. Work is organised across 3 themes:

- ***Clinical Exercise Science*** (**O'Driscoll**, **Swaine**, **Wiles**, **Woolf-May**, supported by **Coleman**): research into the role of isometric and/or ambulatory exercise in reducing blood pressure, in cardiac rehabilitation, and in preventing cardiovascular disease and metabolic syndrome.
- ***Human Performance*** (**Coleman**, **Foad**, **Uphill**, **Vernon**, supported by **Swaine**, **Wiles**): research into efficiency and economy in cycling and running performance, swimming ergometry, and psychological factors that regulate or control performance (including placebo effects).
- ***Policy, Politics and Education*** (**Butcher**, **Chatziefstathiou**, **Dowse**, **Gubby**, **Mills**, **Weed**, **Wellard**, supported by **Foad**, **Uphill**, **Woolf-May**): research into Olympic and event legacy policy and education, public health and physical activity and sport policy in adults and children (including issues of sport, gender and the body), and tourism behaviours and life politics.

Broadly, work within *SPEAR* falls under ***Policy, Politics and Education***, although the Centre has had some involvement with aspects of ***Clinical Exercise Science***, whereas emergent *SportsLab* services seek to develop aspects of ***Human Performance***.

b. Research Strategy

b.I . Achievement of Strategic Aims for Research

Five specific strategic priorities for 2008-13 were identified in the UoA's RAE2008 submission:

i) Establish a new Research Centre to develop collaborative approaches to research and funding, and to build funded research capacity.
ii) Bring Physical Education research submitted to RAEUoA45 (Education) within REFUoA26.
iii) Expand the proportion of research funded by external sources.
iv) Build on early funding success to inform critiques/evaluations of Olympic policy/development.
v) Utilise research synthesis expertise to contribute to evidence-based policy and practice.

In addition, a strategic review of priorities for the UoA was undertaken in 2009 following the outcome of RAE2008, which identified 3 further priorities:

vi) Focus resources on fewer, strategically important, research areas to enhance quality.
vii) Build on strengths in the role of sport, exercise and physical activity in enhancing health.
viii) Enhance the profile of the UoA's research into sport performance.

The UoA strategically rationalised research into 3 themes (section a) representing specific research strengths (priority vi) identified as representing the strongest, most robust and most distinct research submitted by the UoA to RAE2008, and as addressing significant and impactful questions for contemporary policy and practice in health, human performance, sport and education (priority vii). However, this was not at the expense of research volume (FTEs in REF1 are up by 23% from RAE2008). This approach was supported by feedback from the RAE2008 UoA46 Panel, which noted small UoAs often spread limited resources too thinly across subjects. Resource drivers for each theme were then identified (priority vi), with ***Clinical Exercise Science*** driven by institutional and QR investment in PhD studies, ***Human Performance*** initially driven by investment in PhD studies, but latterly supplemented by *SportsLab* activity**,** and ***Policy, Politics and Education*** driven by external funding secured by *SPEAR* (sections c.II & d).

SPEAR was established in 2008, with 3 core staff: a Director (**Weed**), an Associate Director (**Wellard**) and a Research Development Officer (**Dowse**) (priority i). **Wellard** transferred from the Faculty of Education, which brought PE research within UoA26 (priority ii), leading to funding of £240,179 in REF4b for research linked to youth sport (priority iii). *SPEAR* secured income over £1/2million in its first 5 years and expanded its core staff to 5 in 2012/13, adding a Principal Research Fellow (**Foad**) and Research Assistant (Secker). Capacity for funded research has been built with the inclusion of other staff in REF2 (**Chatziefstathiou**, **Gubby**, **Mills**, **Uphill**, **Woolf-May**) and other UoAs (eg Burns, Coren, UoA3; Powell, UoA25) in *SPEAR* project teams (priority i). In 2012, a strategic decision was made to establish *SportsLab***,** with a dual remit to diversify resources driving ***Human Performance*** work (priority iii) and enhance the profile of sport performance research (priority viii), which has potential to act as an interest primer for the

wider work of the UoA (REF3a). Directed by ***Coleman*** and supported by **O'Driscoll**, **Uphill**, and **Wiles** (plus technical staff), little funding is yet showing in REF4b, but *SportsLab* is an important part of future research funding (section d) and impact (REF3a) strategy.

Data in REF4b shows that the per annum average value of funded research has increased by 82% since RAE2008 (priority iii)(section d). Furthermore, advancements in ***Clinical Exercise Science*** have moved research beyond the fundamental science of proof of concept to allow significant multi-centre grant applications to be made to support both isometric and ambulatory exercise research, and this is expected to be the resource driver for this work in the next period (priority iii). This has been aided by an important meta-analysis (**Wiles1**), which complements research synthesis expertise in ***Policy, Politics and Education*** which has generated £113,451 in REF4b for policy-focused research syntheses commissioned by the Department of Health (DoH), NHS, Sport England and Kent County Council (priorities iii, v), some of which is visible in REF2 (eg **Dowse1**), but much of which is pending peer-reviewed publication from 13 reports to funders (9 published)(section b.II). Across ***Clinical Exercise Science*** and ***Policy, Politics and Education***, and reflected in REF2 outputs of **Dowse**, **Mills**, **O'Driscoll**, **Swaine**, **Wellard, Wiles** and **Woolf-May**, there is considerable work related to health (priority vii) supported by funding of £237,029 in REF4b. Similarly, within ***Policy, Politics and Education*** activity related to Olympic policy and development (priority iv) has generated £308,708 in REF4b (priority iii) which is only partially reflected in REF2 outputs of **Chatziefstathiou**, **Dowse**, **Wellard**, and **Weed**, with peer-reviewed outputs pending from 21 reports to funders (14 published)(section b.II).

b.II. Research Outputs and Outcomes Not Yet Visible

Different resource drivers across themes lead to different models for developing outputs (REF2) and outcomes (REF3a). ***Clinical Exercise Science*** follows a traditional science model whereby small scale fundamental science driven by linked PhD studies leads to peer reviewed publications establishing proof of concept which can underpin grant applications for large scale research demonstrating health impacts and leading to wider take up. Consequently, peer-reviewed outputs are visible in REF2, but now proof of concept is established progress is underway towards changing the resource driver via funding applications comprising large multi-centre, interdisciplinary teams to establish efficacy and demonstrate cost-effective health impacts, but these are not yet visible in REF3a or REF4b. Conversely, ***Policy, Politics and Education***, driven by funding secured by *SPEAR*, follows an evidence-informed policy model, whereby funded research is undertaken, with findings simultaneously or immediately reported to the funder, leading to impact outcomes at a policy, practice and end-user level, but with peer-reviewed outputs often published after impacts have taken place. As such, impact and funding outcomes are visible in REF3a/b and REF4b, with some reports to funders listed in REF3b, but many peer reviewed outputs are pending, thus strategically important and impactful research on Olympic legacies and school sport and physical activity is only partially visible in REF2.

Recognising that sport performance research funding is sparse (a point made by the RAE2008 Uo46 Panel), in ***Human Performance*** a translational research model is being developed in which *SportsLab* translates the UoA's peer-reviewed research into bespoke scientifically-informed advice for individual and corporate clients, with the goal to progress beyond PhD studies as the sole resource driver for research in this theme. This achieves 3 goals: impacting directly upon research end users (performers and coaches); securing funding for ***Human Performance*** research; increasing the scale of the research by providing research participants and data. However, as this translational model is in its infancy, while peer-reviewed outputs are visible in REF2, outcomes in terms of impact and funding are not widespread in REF3a and REF4b.

b.III. Strategic Priorities for Five Years Following Submission

At the broadest level, strategic priorities will be to further enhance sustainability by taking forward the activities in relation to resource drivers discussed in b.II. More specifically, ***Clinical Exercise Science*** will seek funding to develop multi-centre controlled experimental designs investigating, *inter alia*: the effectiveness and cost-effectiveness of multi-disciplinary cardiac rehabilitation including ambulatory exercise in delivering clinical benefits to stable angina patients; the effectiveness and cost-effectiveness of isometric exercise to reduce stroke risk; the impact of pre-operative isometric exercise for cancer surgery. Related work will examine: specific mechanisms underpinning responses to both isometric and ambulatory exercise; specific impacts of isometric exercise in wider clinical populations; the feasibility of isometric exercise prescription and potential off-the-shelf isometric exercise products.

Human Performance will continue, and build on, PhD research, and grow research that can be supported by *SportsLab* activities, focusing specifically on: concurrent exercise training practices to improve performance; enhancing ecological validity by investigating athlete responses in the field; hydration strategies in the prevention of fatigue; the optimisation of performance in runners; and the continued specialisation of emotion regulation expertise and innovative research into counterfactual thinking. Established areas of research will also diversify: the relationship between cycling efficiency and weight loss will be investigated; the role of the placebo effect in supporting an antidoping stance (currently the subject of a multi-centre grant application to the World Anti-Doping Agency) will be explored; and, linking to ***Policy, Politics and Education***, funding to investigate the impact of counterfactual thinking on health and exercise behaviour will be sought.

Post London 2012, ***Policy, Politics and Education*** will take forward lessons for tourism, sport development, international relations and Olympism to future Games, events and other sports tourism contexts, and explore how processes for Olympic physical activity and sport legacies (REF3b1) can inform general physical activity and sport policy, including implications for communicating physical activity recommendations and for intervention participation/adherence. Funding is already secured for further research on youth sport and physical activity for the less active, including work to enhance the quality of research evidence in this sector through large scale (national) controlled experimental designs (REF3a). Finally, policy and political implications of identity will be further explored, both in relation to sport and the body, including attitudes to exercise during pregnancy, and to the use of tourism as a site for identity politics.

Priority development areas to support the above will be to: (i) further enhance sustainability by developing resource drivers and outputs as described in section b.II; (ii) linked to (i), increase both research funding overall and the proportion of funding from research grants, with *SPEAR* to build on success with research contracts (section d.I) to develop pro-active strategy for research grant applications; (iii) further enhance research quality by continuing to increase staff time for research (section d.II) and growing the number of support FTEs, such as Instructors, research assistants and technicians; (iv) further grow PhD numbers, particularly through the expansion of Instructor posts with bursaried “half-time” PhD study (section c.II), which also delivers (iii); (v) continue to develop ECRs, both from current ECRs to senior researchers, and mentoring future ECRs (section c.I); (vi) capitalise on and further expand external collaborations (section e.I), particularly for large-scale funded research.

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

The University and the UoA is committed to providing a fair environment in which everyone is treated with dignity and respect, having held Investors in People status since 2004 and been awarded the two ticks symbol for commitment to employment of disabled people and our role as a Stonewall Diversity Champion. Research in the UoA is led by a Director of Research (DoR) who, along with the Directors of *SPEAR* and *SportsLab*, reports to the Department Management Group. A Steering Group, comprising the DoR, Graduate Research Director, Laboratory Director and Head of Department advises on research strategy and the use of QR funding devolved to the UoA, which is discussed in Department Meetings and at Department Research Meetings, to which all staff are invited. Deriving from this, strategy in terms of staffing has been to: (i) promote staffing stability; (ii) develop and promote staff internally; (iii) recruit ECRs to new posts; (iv) increase staff time for research. In terms of stability, 9 staff in REF1 were also submitted to RAE2008 (Bull retired; Beedie left academia). Internal promotions comprised **Chatziefstahiou**, **Wellard** and Mansfield to Reader (the latter left to become Deputy Director of the Brunel Centre for Sport, Health and Wellbeing), **Butcher**, **Coleman**, and **Wiles** to Principal Lecturer, **Dowse**, **Foad**, and **Mills** to Senior Lecturer, and **Dowse** and **Foad** to Principal Research Fellow. A third of staff in REF1 are new appointments, 4 to new posts (**Dowse**, **Gubby**, **Foad**, **O’Driscoll**) and **Mills** replacing Beedie. While 60% of staff in RA1 are male, 80% of newly recruited staff are female, and 90% of FTEs in REF1 are on permanent contracts.

All 5 new staff are ECRs appointed to help focus resources on strategically important research areas. ECRs are located within focused, distinct and established research themes, given a lighter teaching load in their first 18 months, and are mentored to work alongside more experienced colleagues on PhD supervisory teams and on funded research. **O’Driscoll**’s PhD in cardiovascular physiology and link with University College London Hospitals contributes to moving ***Clinical Exercise Science*** on isometric exercise beyond proof of concept into clinical populations, whilst **Foad**’s previous work with Beedie secures placebo research within ***Human***

Performance. Since 2012, **Foad** has also been Principal Research Fellow in *SPEAR*, particularly supporting work on controlled experimental designs in ***Policy, Politics and Education***. **Dowse**, was recruited to *SPEAR* in 2008, promoted to Principal Research Fellow then Senior Lecturer in 2013, and recently submitted her PhD on international relations impacts of sport events. **Mills**' PhD in exercise behaviour helps move physical activity policy research in ***Policy, Politics and Education*** beyond the Olympic context, and she is now developing a specialism on attitudes to exercise during pregnancy. Finally, **Gubby** has experience in learning and teaching research, but was recruited to contribute to sociology of sport, gender and the body (PhD submission early 2014). **Foad**, **Mills**, and **O'Driscoll** have been mentored on PhD supervisory teams, whilst **Dowse**, **Gubby**, **Foad**, and **Mills** have been mentored on funded research teams.

Internal staff development is illustrated by **Chatziefstathiou**'s progression. Appointed in 2004 and submitted as an ECR to RAE2008, she was initially mentored on *SPEAR* project teams, which helped her secure IOC research funding. She was awarded the Inaugural DeCoubertin Prize by the IOC in 2008, promoted to Reader in 2011, and in 2012 secured a 2-year Marie Curie Fellowship for Olympic research. Staff development strategy also seeks to support career enhancement for experienced staff. **Weed**, appointed to a Chair in 2006, was supported to develop *SPEAR* from 2008 and to lead research across 5 UoAs in the Faculty (2008-2013) before becoming Acting Head of Department in 2013. Similarly, **Coleman,** who was appointed Laboratory Director in 2006, was promoted to Principal Lecturer in 2008 and has been supported to develop *Sportslab* from 2012, whilst **Wellard**, brought into the UoA as Associate Director of *SPEAR* in 2008, was promoted to Reader in 2010, and has been supported to lead PhD research in Department and Faculty since 2011. Finally, all staff have experienced significant increases in time allocated for research, with investments described in section d.II more than doubling staff time for research in lieu of one-off study leaves. This comprehensive staffing strategy is implemented within a context of research integrity that promotes joint authorship, seeks to give early career staff opportunities to be mentored to lead on publications where possible and appropriate, and mentored to lead research sub-teams as independent researchers.

c. II. Research students

Average PhD registrations per year have more than tripled to 22 (13.6 FTE), from 6.8 (5.6 FTE) during RAE2008, and remained stable (+/- 0.8 FTE per annum) as investments to increase the volume of PhDs have been maintained throughout the period (see table). While completions have increased from 1.4pa during RAE2008 to 1.8pa during REF2014, a particular focus on part-time PhD study, including internal and external investment in a series of innovative Instructor and Development Officer posts (section d.II) which offer the opportunity for "half-time" PhD study, means that investments reflected in registration data are not yet visible in completions in REF4a. In particular, 4 further PhD studies have completed in the latter part of 2013.

	per annum average						
	RAE2008	REF2014	2008/09	2009/10	2010/11	2011/12	2012/13
Registered PhD students:	6.8	22.2	22	24	23	21	21
FTE PhD Registrations:	5.6	13.8	14	14.5	14.5	13	13

Of 32 PhD students registered during the period, 9 received institutional scholarships (FT), 14 received external funding (2FT,12PT) and 9 were institutionally supported (PT). Two students (**Dowse,** Curtis) received ESRC early career networking bursaries. This significantly increases externally supported PhD numbers, for which the UoA was commended by the UoA46 panel. Six part-time students have been employed in new posts, 3 externally funded, 3 QR funded, 5 as Instructors and 1 Development Officer. The latter post provided funded research experience in *SPEAR* to underpin PhD study in ***Policy, Politics and Education***, whilst the Instructor posts included 0.5FTE protected time for PhD study, supported by a bursary, alongside experience of either HE teaching or research support work in ***Clinical Exercise Science*** or ***Human Performance***. These posts will continue with new appointments in 2013/14.

Full-time PhD students, and the Instructors and Development Officer, are provided with a dedicated desk, computer and study area or office, and all full-time or institutionally supported students receive research expenses of £800-£1000pa. In addition, consumables (eg blood testing kits) are provided. The Graduate School provides training organised around the 4 themes of the Vitae Researcher Development Framework, which supports the Concordat to Support the Career Development of Researchers, the QAA Code of practice for research degrees, and the 'Roberts'

recommendations. This provision is supplemented by support and advice from a supervisory panel of a first and second supervisor and a chair. Further opportunities and training are provided within the UoA, with 10 PhD students gaining funded research experience in *SPEAR*, 15 gaining experience of laboratory based research support work, latterly with *SportsLab*, and 6 being supported through professional accreditation (eg BPS, BASES). This has led to PhD students securing additional career enhancing skills and qualifications in phlebotomy, ultrasound and ECG assessments, and in Prince2 Project Management. Finally, the UoA encourages publication throughout PhD studies, and over 40% of outputs in RA2 include PhD students as co-authors.

d. Income, infrastructure and facilities

d.I. External Income

Research income has increased by 82% from RAE2008. REF4b shows year-on-year increases from £57,554 in 2008/9 to £142,255 in 2012/13, and totalling £446,198. Future growth is assured, with contracts with DoH, Youth Sport Trust (YST), Lloyds Banking Group and SportLeadersUK in place for income of £254,993 across 2013/14 to 2014/15. Personal research awards of £203,174 (not in REF4b) from the EU, IOC, ESRC and NIHR Stroke Research Network have been made to UoA members, including a £184,762 Marie Curie Fellowship to **Chatziefstathiou.** The total value of research contracts and awards secured during the period thus totals £904,365.

Over 80% of funding listed in REF4b comes from organisations with a national remit, such as the British Heart Foundation (BHF), NHS, DoH, Sport England, UK Sport, YST, and ESRC, with £413,052 related to the 3 overlapping areas of health (£237,029), youth sport (£240,179) and the Olympics (£308,708), and over 75% secured through open competitive processes. There has also been significant repeat funding competitively awarded, some extending beyond the period, including: DoH for Olympic Physical Activity and Sport Legacies (£27,000, extended to £42,000); DoH and YST for evaluating Change4Life school clubs (£40,000, extended 3 times to £351,700); YST and LloydsTSB for evaluating National School Sport Week (£25,000, extended 3 times to £101,000). The former features in REF3b1 and the latter 2 in REF3b2. Almost half of staff submitted in REF1 (**Chatziefstathiou**, **Dowse**, **Mills**, **Vernon**, **Weed**, **Wellard**, **Woolf-May**) have outputs in REF2 supported by funding in REF4b. However, the evidence-informed policy model for ***Policy, Politics and Education*** means that much research arising from funding secured by *SPEAR* is not yet visible in REF2 (section b.II), although it is visible in outcomes in REF3a/b, and has produced 30 reports to funders (17 published). Over 70% of staff in REF1 are co-authors on these reports, for which both initial research designs and final reports are subject to scrutiny and feedback by research commissioners before research is approved or released.

d.II. Strategy for External Income and Internal Investment

Building funded research capacity was a key reason for establishing *SPEAR* (section b.I). However, to increase quality and maintain focus on strategically important research in ***Policy, Politics and Education***, *SPEAR* has focused tendering activity on youth sport and Olympic and other event legacies and impacts, particularly relating to health, but only for research that is likely to have significant impacts with wide reach (REF3a), and yield peer-reviewed publications that will advance knowledge, albeit that the latter are often developed after impacts have developed. Strategy for ***Clinical Exercise Science*** is longer-term, and initial investments in PhD studies to establish robust proofs of concept are now underpinning substantial multi-centre, interdisciplinary funding applications totalling over £2million with key partners including 9 NHS Trusts, 8 HEIs, and internal colleagues in *SPEAR*. Emergent strategy for ***Human Performance*** is linked to developing a translational research model through *SportsLab* (section b.II), which is expected to yield income to support this area in the next REF period. The UoA's external income strategy is operationally supported by the University Research & Enterprise Development Centre, and a specific Development Manager attached to the Faculty.

Despite increasing FTEs in REF1 by 23%, internal QR investment strategy has focused on enhancing quality. The QR funded Instructor posts (section c.II) were established to release research active staff from teaching (0.5FTE) and for PhD study (0.5FTE). As a result, staff time for research has more than doubled, but this increase in routine research time comes in lieu of one-off study leaves. Also, an Incentive Fund rewards high quality peer-reviewed publication and success in attracting external income with discretionary research funding to pump prime research. Between 2008/9 and 2012/13, over £1/2million has been invested in this way.

d.III. Infrastructure and Facilities

Investment of over £1million in laboratory provision was identified in the UoA's REF2008

submission, which has been extended by over £700,000 since 2008, including £310,000 to extend the laboratory complex, with new laboratory space and additional offices for key research staff, and new and refurbished offices for Instructors, technicians and PhD students. A further £415,000 has been invested in laboratory equipment, including Doppler ultrasound, used to measure vascular responses to ambulatory and isometric exercise to understand mechanisms underpinning adaptations and acute responses, and portable gas analysis systems and SRM technology, which are now being used by *SportsLab* to develop applied performance measures in the field to enhance ecological validity. Beyond the laboratories, *SPEAR* staff offices have been co-located and incorporate a dedicated meeting and resource space, GIS equipment, online conferencing, and data storage, with GIS, for example, supporting research mapping school sport participation hotspots and economic flows for sport events. Finally, investments have increased research support staff by 2.4FTE over the period, whilst additional support is provided by the University Research & Enterprise Development Centre, which houses teams focused on staff development, project support and business and community engagement. More broadly, in 2008/9 the University invested £35million in a technology rich 12,000sq.m. library and resource centre.

e. Collaboration and contribution to the discipline or research base

e.I. Collaboration

Two-thirds of REF2 outputs collectively include 45 external co-authors from 31 institutions, 9 of whom are international. Beyond academia, these co-authors include those from NHS Foundation Trusts, such as University College London Hospitals and East Kent Hospitals University, and from independent research organisations, such as Phillips Research (Holland) and Cambridge Cognition. Funded collaborations include those with: Universities of Edinburgh, Leeds, and Kent, plus University Hospitals of Leicester and East Kent Hospitals University NHS Trusts for NIHR Stroke Research Network funding to explore the impact of isometric exercise on stroke risk; Universities of Kent and Portsmouth, plus Hampshire Hospitals and East Kent Hospitals University NHS Trusts for NHS R&D funding to explore the use metabolic equivalents in assessing cardiac patients; the Open, Brighton, Exeter and Manchester Universities and Kings College London for AHRC funding exploring the importance of culture in peak performance; Universities of Wolverhampton, Staffordshire, Aberystwyth and Qatar Orthopaedic & Sports Medicine Hospital for ESRC funding for Emotional Regulation of Others & Self (sport element); Universities of Bournemouth and Essex for ESRC funding on leveraging social, cultural and health benefits from London 2012; Sheffield Hallam University for UK Sport funding to investigate the impact of watching live sport events on sport participation; and an international panel of academic advisors from North America, Australasia and Europe for the part of the Olympic Physical Activity Sport and Health Legacy project funded by DoH (REF3b1). REF3a also demonstrates work with funders as collaborators, with particularly strong relationships existing across multiple projects with the YST, DoH, NHS and StreetGames. Also, *SPEAR* is the most listed HE research unit on Sport England's Research and Evaluation Framework (2013-2018).

Collaboration is ongoing with former (or soon to complete) PhD students now at other HEIs, with one third of REF2 outputs representing such collaborations with 11 former students working in 10 different HEIs. Specific examples include: **Coleman's** collaboration with Hopker (Kent) and Jobson (Winchester) on cycling efficiency; **Swaine's** and **Wiles**' work with Devereaux (UCSussex) on the effect of isometric exercise training intensity and programme duration on blood pressure; and Woolf-May's work with Meadows (Kent) and Scott (Portsmouth) to establish a Collaboration for Research into Exercise as Medicine (with some initial NHS seed funding success).

In ***Policy, Politics and Education***, virtually all *SPEAR* projects are interdisciplinary, from the development of exercise intervention measures in deprived areas to assessments of sport event impacts, and incorporate behavioural, social, and policy implementation factors. As such, teams routinely include at least one psychologist, sociologist, physical educationalist and policy studies specialist, and in some cases physiologists and biomechanists have also been involved as required. Similarly, much research in ***Human Performance*** is interdisciplinary, with work on placebo effects, drawing on psychological and physiological perspectives, being the most prominent example. Finally, although ***Clinical Exercise Science*** has, to date, been rooted in physiology, future plans for multi-centre research to explore efficacy and cost-effectiveness have drawn in important expertise on health economics and policy. Interdisciplinary collaboration takes place within and across UoA themes, which are not discipline based, across the University (staff

in UoAs 3, 6 & 25 have worked on UoA projects), and with other HEIs, the NHS and beyond. To support interdisciplinary projects, and the often emergent need for interdisciplinary perspectives, workload allocation in the Department is dynamic, with hours allocated to key staff on the assumption they will contribute during the year to future unknown interdisciplinary projects.

e.II. Contribution

(i) Conferences, Meetings and Events: The UoA has hosted a number of important international and national conferences, meetings and events, with illustrative examples being:

- International Pierre DeCoubertin Symposium (2012): This event, held during London 2012, attracted over 100 Olympic scholars from more than 20 countries across Europe, Asia, and North and South America, and reflected the UoA's significant contributions to Olympic research.
- Leisure Studies Association National Conference (2009): Emphasised health, wellbeing, identity and experiences in post-conference volumes reflecting the UoA's contributions in these areas.
- Association for Tourism in Higher Education Annual Conferences (2008, 2010, 2013): The 2013 conference is of particular note as the Association's 20th Anniversary celebration.
- ESRC Seminar Series (2008-2009): This series, on the social, cultural and health impacts of the Games, was the first ESRC funding awarded for London 2012 related work, and it stimulated continuing debate about the non-economic impacts of the Games among academic and policy communities, with participants from Scotland, Wales and all English regions (REF3b1).
- Imagining the Olympics (2009): This ESRC funded Festival of Social Science event (linked to above) invited policymakers & academics to imagine what London 2012 would bring to the UK.
- BSA Sport Study Group Postgraduate Forum (2013): this event was an important contribution to professional development and networking for UK sociology of sport postgraduate researchers.

In addition, notable examples of international conference keynotes delivered by UoA members across the period include those to: German Association of Sport Science (Konstanz, 2013), Singapore Olympic Academy (2012), Canadian Institute for Health Research (Ottawa, 2011), Portugese Sport Management Association (Lagos, 2010), Turkish Sport for All Federation (Antalya, 2009), International Tourism Studies Association (Shanghai, 2008).

(ii) Touchstone Texts and Reviews: Important contributions have been made by key 'state of the art' touchstone pieces in particular fields or sub-fields, not all of which are submitted in REF2. These include: **Swaine**'s review in *Sports Medicine* (2013, DOI: 10.1007/s40279-013-0118-x) and **Wiles** and **Swaine's** meta-analysis (**Wiles1**) on the role of isometric exercise in reducing blood pressure; **Foad**'s review of the placebo effect in sports performance (**Foad3**); **Weed**'s meta-review of progress in sports tourism research in *Tourism Management* (2009, DOI:10.1016/j.tourman.2009.02.002). In addition, **Uphill**'s co-authorship of the BASES expert statement on emotion regulation in sport (*Journal of Sports Sciences*, 2012; DOI: 10.1080/ 02640414.2012.693621) and **Weed**'s sports tourism book (**Weed3**) are already recognised as touchstone references, whilst **Chatziefstathiou**'s book on discourses of Olympism, derived from her international award winning research (**Chatzief4**), and **Wellard**'s innovative text on sport, fun and enjoyment (**Wellard3**) are expected to become touchstones for future scholarship .

(iii) Positions, Service, and Awards: All UoA members review for the key journals in their field, the most notable being *The Lancet* and the *BMJ*. **Weed** is Editor-in-Chief of *Journal of Sport & Tourism*, while UoA members are, or have been, on the editorial boards of, *inter alia*, *Journal of Sports Medicine*, *Psychology of Sport & Exercise*, *Sport & Exercise Psychology Review*, *Qualitative Research in Sport & Exercise*, *International Journal of Sport Management*, *European Sport Management Quarterly*, *The Science of Dance*, *The Journal of Sustainable Tourism, The Qualitative Report*. Similarly, UoA members regularly review funding applications for national (eg ESRC, MRC, BHF) and international (eg l'Agence Nationale de la Recherche, France, Academy of Finland, Research Grants Council of Hong Kong) agencies. Staff are members of the key national and international scholarly associations, such as *BASES*, *British Association of Cardiac Rehabilitation*, *British Psychological Society (BPS)*, *European Association of Sport Management (EASM)*, *Association for Tourism and Leisure Education (ATLAS).* **Uphill** is Honorary Secretary of the BPS Division of Sport and Exercise Psychology and a member of the BPS Behaviour Change Advisory Group, **Swaine** is a member of the BASES Awards Panel and Charted Scientist Panel, and **Weed** is a long-standing member of the EASM Scientific Committee. Finally, **Chatziefstathiou** is a member of the International Pierre DeCoubertin Committee, and was awarded the Inaugural Pierre DeCoubertin Prize from the International Olympic Committee (2008) and Scientist of the Year from the Hellenic Association of Sport Management (2011-12).