Institution: Staffordshire University

Unit of Assessment: 26 – Sport and Exercise Sciences, Leisure and Tourism

a. Overview

Work in this unit is guided by the Centre for Sport, Health and Exercise Research (CSHER). The CSHER is an Applied Research Centre (ARC), one of 10 within the University. The University ARCs were established to act as a focus for research activity. The University is structured into four Faculties, each with three schools. Membership of the CSHER is drawn from the School of Psychology, Sport and Exercise, which is one of three schools in the Faculty of Health Sciences. Staff in this unit are drawn from four disciplines; psychology (Jones, Barker, Woodcock, Turner, Slater), biomechanics (Chockalingam, Naemi, Chatzistergos, Branthwaite, Healy, Needham), physical activity and health (Gidlow, Forsyth), and physiology (Unnithan) with research activity across a number of areas (see section b).

b. Research strategy

In RAE 2008 three targets for research activity were identified, which were:

1) *An increase in research income, from the 2008 level of £106,213 per annum to £500,000 per annum by 2012-2013.* This has been achieved, with income increasing year on year reaching £505,239 in 2012-2013. Total income equates to £113,955 per FTE over the assessment period.
2) *A threefold increase in PhD completions (from the 2008 level of 1.3 per annum).* In the census period, we had 14 PhD completions, which equates to 2.8 per annum, a substantial increase and close to our challenging target.
3) *An increase in the number of international-level research publications.* No specific figure was stated for the magnitude of increase, but the staff returned in this unit have published in leading international sport and exercise journals (e.g., *Journal of Sport and Exercise Psychology, Medicine and Science in Sports and Exercise*), published in leading international journals with a broader focus (e.g., *International Journal of Psychophysiology, International Journal of Obesity, Bone*) and have participated in Cochrane reviews. The outputs submitted in this census return reflect a more mature research profile than the previous submission. Key staff have remained (Chockalingam, Jones, Gidlow, Barker, Forsyth), staff with developed research careers have been recruited (Unnithan, Naemi), as have promising developing researchers (Branthwaite) and talented early career researchers (Chatzistergos, Healy, Needham, Slater, Turner, Woodcock).

Although staff have a discipline base, much of the research activity in this unit is multi-and inter-disciplinary with staff typically having more than one area of research interest and working across areas with shared PhD supervision and collaborative research projects; both within and across other ARCs as well as with external collaborators. Since the last assessment exercise we have moved away from defined research streams because of the volume of collaborative research across disciplines and the multidisciplinary work frequently needed to respond to end-user needs. Notable areas of research strength include; community interventions to enhance physical activity for public health and disease prevention; understanding the cardiovascular and cardio-respiratory bases for circulatory health and the superior aerobic performance seen in the elite child athlete; understanding and enhancing performance under psychological stress; human performance measurement, with a focus on foot and footwear biomechanics, injury prevention, lower limb musculoskeletal issues, diabetes and aetiopathology of scoliosis.

Our strategic aims for research are guided by two key principles. First, the University's Research, Enterprise and Scholarship strategy is focused on applied research. As outlined in the strategy, applied research is proposed to be "… 'end-user research' which has a clear applied or knowledge exploitation focus from the outset, but located within the broader context of the solution of real-life problems for the delivery of economic, commercial, environmental, cultural or social benefit." In line with this, our research activity and income is strongly based in a range of partnerships across professional sporting organisations, national sporting governing bodies, government organisations, local, national and international businesses and industry (see section

e). Second, the University Plan (2012-2017) describes Staffordshire University as a teaching-led university in which the curriculum is underpinned by research and as such, research activity is to be related to the courses we deliver. In line with this ethos, all Category A staff contribute to our teaching provision. This includes undergraduate, postgraduate and an increasing number of professional development awards with industry (see section e for details). As research is central to the aims of the University, the University Plan 2012-2017 reiterates the commitment to improve against national measures of research excellence through increased investment and support for key thematic areas of research excellence. Over the next five years the aims for this unit are:

- To increase research income by 10% per annum.
- To increase the critical mass of internationally recognised researchers to >15 FTE, all of whom will inform our curriculum.
- To increase the number of PhD students year on year.
- To have >20 PhD completions.
- To build on our strong partnership achievements and see a year on year increase in partnership activity with external organisations and industry.
- Through increasing public engagement activity to popularise, and disseminate, our research.

These aims reflect the positive trajectory of work in this unit, the increasing quality of the research outputs, and the increasing amount of research income and engagement with end-users. The sustainability of our research environment is evidenced by:

- The well-balanced profile of our current staff which includes established international researchers and talented developing researchers.
- Funded work with a range of end-users (see impact statement 3a) and research funding that will run well into the next assessment period with £743,961 already secured to be spent from 2013-2014 onwards.
- An increasing number of research students (see section cii).
- A commitment in the University Plan 2012-2017 for increased investment and support for key thematic areas of research excellence.
- The recent and planned investment in infrastructure (see section d).

c. People

There is a well established structure for the development, monitoring and evaluation of research activity. The CSHER, which guides work in this unit, operates under the supervision of the University Research Enterprise and Applied Scholarship Committee (REASC), which implements the University's research strategy. The management of CSHER is through a Director (Chockalingam) who attends the Health Research Sciences Institute (HRSI), the body responsible for research strategy in the Faculty of Health Sciences, from whom members of the unit are drawn. The HRSI is chaired by a member of the unit, Jones, in his role as Associate Dean for Scholarship, Enterprise and Research. An annual report on the CSHER's activities, with key aims for future years, is provided to both the Faculty (through HSRI) and University (through REASC). Regular CSHER meetings are held and action points from the meetings formally recorded, and progress against key targets and progress of PhD students monitored.

i. Staffing strategy and staff development

We recruit staff who demonstrate the potential to contribute to research activity. Depending on the requirements of the post, this can include a broad range of research experience from staff with extensive research outputs and an international reputation through to those who are just beginning their research career. Staff members are supported through the University work loading policy and research planning and support requirements are explicitly covered in appraisals. All staff are expected to produce research outputs and this is recorded in an annual audit and is monitored as part of the annual appraisal process. Opportunities for career progression are available through an annual call for Professorships and Associate Professorships. In the census period, Chockalingam and Jones were awarded Professorships, and Barker, Gidlow and Naemi Associate

Professorships. Staff on short-term contracts, which are linked to funded projects, are similarly supported through the line management system. Line managers work with part-time staff and those with other commitments or disabilities to ensure that they are able to carry out research to the best of their ability and get any additional support required, such as access to specialist computer software, or flexibility in working from home where necessary. New researchers and research assistants are mentored by a senior member of the research team. All staff (full and part-time) are encouraged (and supported financially) to present research at national and international conferences. There is a research seminar series, at which the staff and research students present, in addition to external speakers. The centrepiece of the research seminar series is the annual Basil Ashford memorial lecture. Staff in this unit also organise an annual international conference on clinical biomechanics which features eminent scientists and clinicians as keynote and invited speakers. The University is committed to the adoption of the HEFCE Concordat for the development of researchers, and REASC will be responsible during 2013 – 2014 for overseeing the phased implementation of the Concordat. It is also the University's intention to submit a formal application for the HR Excellence in Research Award given by the European Commission during the early autumn of 2014, again to be overseen by REASC.

Since the RAE2008, work in this unit has been in receipt of £328,931 funding from the University, evidence of a policy to invest in, and support, key thematic areas of research excellence. This money has been used to develop research through bursaries for PhD students, pay for conference attendance and staff have been given the opportunity to bid for small amounts of funding (usually around 2-3k) to fund specific research projects and this has helped provide a flexible and efficient use of research funding.

Annual CSHER reports monitored by the University provide the opportunity to reflect on progress and continue to refine the strategic direction of work in this unit by responding to emerging challenges and opportunities. One challenge was a strategic decision by the University, post RAE2008, for members of the Psychology Department to submit in REF2014 under UOA 4. This meant that five members of staff from the submission in sports-related studies in RAE2008 have worked towards inclusion in a different UOA. Despite this, we have maintained a comparable return in terms of numbers with an increase in amount, and quality, of research activity (see achievement of key targets in section b). In particular, the areas of psychology and biomechanics have the greatest critical mass. In psychology our work has focused on helping the psychological approach of athletes to competition, particularly around understanding and managing the influence of stress on performance (see case study 1). This work has been strengthened by the recent appointments of Turner (2013), Slater (2013) and Woodcock (2012) who has extended our work into dance settings with psychological support offered to two different vocational dance schools (Elmhurst School for Dance [Birmingham Royal Ballet], English National Ballet School).

Our research in biomechanics has grown substantially under the leadership of Chockalingam since the last assessment exercise. The research activity is broad and encompasses aspects of engineering, technology and medicine. In addition to studies with sport and exercise populations and conducted in sport and exercise settings, the research contributes to sport and exercise science by addressing underpinning methodological issues. Illustrations of these underpinning methodological issues include, how kinematics change during treadmill locomotion (Chockalingam, Healy, Branthwaite); planter pressure measurements (Chockalingam, Naemi, Healy, Branthwaite); the mathematical modelling of shock absorption in the foot-footwear complex (Chockalingam, Naemi); the use of foot orthoses (Chockalingam, Healy, Branthwaite); and the development of a finite element model of human musco-skeletal systems, building on work by Chatzistergos with the vertebrae to also develop models of the foot and ankle which facilitate virtual testing of bone tissue damage, related sports technologies and exercise footwear.

In the last return, we identified the 'Social Aspects of Sport, Health and Exercise' as a developing research area. However, Dr Nigel Thomas has moved on to broader strategic roles within the Faculty of Health Sciences (Deputy Dean) and other members of staff (Dr Jamie Cleland) have left shortly before the census date so critical mass in this area has not developed. A further challenge has been the loss of two Professors in 2010 (Rachel Davey, Tom Cochrane) who moved to the University of Canberra. We took this opportunity to develop and broaden our research work. We supported an existing member of staff, Dr Chris Gidlow (promoted to Senior Research Fellow and then Associate Professor) to further develop the work in healthy lifestyles started by Professors Cochrane and Davey. We broadened our research, by appointing Professor

Vish Unnithan (September 2010) to develop research in paediatric exercise physiology and he has successfully led collaborative research work with Wolverhampton Wanderers and Stoke City Football Clubs. With respect to Stoke City Football Club, Unnithan is the overall co-ordinator of a unique synergy between the football club and the University. This has led to the creation of PhD student bursaries (fully funded by the football club) in exercise physiology, performance analysis and sport psychology within the academy and staff members in the academy improving their professional qualifications by studying at the university.

In keeping with the ethos of the University for applied research and engagement with end-users, opportunities for growth in research have been identified through collaborations with external organisations and industry (see section e), some of which has funded PhD research projects (see section dii) and securing suitable European funding. There are two notable successes in securing European funding. First, unit staff (Gidlow, Jones) play a leading role in the PHENOTYPE research project which is a four year (2012-2016) €3.5 million European FP7 project to explore links between engaging with the natural environment (e.g., through physical activity) and health involving nine partner institutions. Second DIABSMART (2012-2015; € 1.1million) is a project led by Chockalingam, which aims to generate and exchange knowledge between the academic, clinical and industry partners to create a new generation of diabetic footwear through a newly developed patient assessment system. Through responding flexibly to the challenges and opportunities, our research activity since RAE2008 has seen a concentration in increasing the quality of our research output, along with increased research impact and research income. The ongoing collaborative work with organisations and research grants points to the sustainability and future growth in our research activity.

Our research activity is underpinned by robust ethical procedures which all researchers in the unit adhere to. There is a full-ethics submission, whereby all applications are reviewed by two rapporteurs and feedback and ethical approval is provided to the researcher via the Faculty of Health Sciences Ethics Committee. There is also a proportionate review ethics submission, this provides expedited reviews for researchers who can gain ethical approval for low-risk projects, without the need to submit a full ethics submission. Unnithan is the Chair of the Faculty of Health Sciences Ethics Committee. Therefore, individuals within the unit receive up-to-date guidance with respect to any changes to the University or Faculty ethics procedures and have a resource within the unit that they can rely on to provide ethical guidance.

The research environment is complemented by visiting Professors (n=7) such as Professor Joseph Hamill (University of Massachusetts, USA), Dr. Thomas Rowland (Baystate Medical Centre, Springfield, MA, USA), Professor Anthony Ward (University Hospital of North Staffordshire) and Fellows (n=10) such as Mr Simon Bartold (University of South Australia), Dr Tom Shannon (Oxford Metrics Group Plc.). These honorary staff have varied expertise and extensive research and clinical experience from other universities, industry, and the National Health Service and contribute substantially to create an international research environment by providing supervision for PhD students and by contributing to numerous research projects. This contribution is facilitated through an annual meeting for honorary staff organised by the University, and in addition we organise a quarterly meeting for honorary professors and fellows in this unit, which is also attended by academic staff, including PhD students, and industry partners. These meetings provide an excellent forum for discussion, debate around current and future research projects.

ii. Research students

The census period has seen a growth in the number of research students (see below for FTE numbers). During 2012-2013 the unit had 15.5 PhD students (9 full time).

2008-2009	2009-2010	2010-2011	2011-2012	2012-2013
6	10.5	10.5	11	15.5

During the assessment period, the unit has been in receipt of seven full-time PhD studentships funded by the University. In addition to this investment we have also worked with partners to secure funding for PhD students relevant to their needs. In 2012-2013 we started three funded PhD students, two with Stoke City FC Academy, and one with Wolverhampton Wanderers

FC in exercise physiology, match analysis and talent identification respectively, all supervised by Unnithan. A PhD student in psychology, funded by Stoke City FC Academy, started in September 2013 supervised by Jones. The total funding from the football clubs is >£220,000. Also in 2013 Stoke-on-Trent City Council funded a PhD student, supervised by Gidlow, to evaluate the use of physical activity strategies to reduce health inequalities. These are supplemented by an increasing number of PhD students who are attracted to study with staff in this unit and who chose to self-fund. Overall we have a balanced cohort of PhD students. These include full-time PhD students whose presence in the University enhances the research environment and part-time students whose studies are completed alongside other duties (e.g., working as a medical writer, or consultant psychologist) and as such often bring a different perspective (e.g., that of the 'end-user') to the research environment. We are developing an increasing critical mass of PhD students, which have made a contribution to the current submission and will demonstrate an even greater return in the next assessment exercise.

A supportive environment is provided for postgraduate research students and all full time research students are allocated a dedicated office space and computer. Part-time students have access to office space and a computer. The University Research Degrees Sub-Committee oversees the registration and supervisory support, transfer and examination of MPhil and PhD students and confirms the award of research degrees. All students and supervisors complete progress reports at the end of each academic year which are discussed by the University Research Degrees Sub-Committee which monitors progress, and resolves any difficulties which may occur. If progress is not as expected, students and staff will be contacted to enquire whether additional support is needed. All research students complete a research planning form in the first year of their registration, where the PhD is outlined and which is commented on by independent University rapporteurs and discussed at the Faculty Research Degrees Committee. Students also complete a nationally recognised Post-graduate Certificate in Research Methods. Midway through their studies, students undertake a transfer viva to move from the MPhil to PhD stage of their studies. Research students also attend and present at the research seminar series and are provided with financial support for library resources, consumables and attendance at conferences. In 2013 the inaugural annual postgraduate student conference was held in conjunction with Glyndwr University at which 160 students presented.

d. Income, infrastructure and facilities

There has been a consistent increase in research income over the assessment period, with a total of £1,526,996 secured overall and £505,239 secured in 2012-2013 (see REF4b).

(i) Research facilities

Since 2008, this unit has benefited from a substantial investment in infrastructure. This has comprised a £583,000 investment for a new biomechanics facility which was opened in January 2012 as part of the new £30 million University Science Centre. In addition to the biomechanics facility there are three psychophysiology laboratories, a phlebotomy room (blood and saliva analysis), and a food preparation area and specially designed interview rooms for use in qualitative and counselling research. These facilities are accessible and used by unit staff, for example, the storage and analysis of saliva samples for levels of cortisol as part of the PHENOTYPE project is being done in the Science Centre. Staff returned in this unit, are also based in the Brindley building which has recently been refurbished at a total cost of £3.2 Million. A total of £98,000 was invested in a new sport psychology laboratory and consulting room, opened in September 2012. An additional spend of £274,317 has been made on maintenance of existing laboratories. Furthermore, an additional investment of £360,000 is planned for a new exercise physiology laboratory and strength and conditioning laboratory. Facilities are well-used by staff and postgraduate students. We also have an excellent library with a subject specific librarian, and most library resources are now available electronically. All staff and research students have access to a range of software including, Nvivo 10, Superlab 4.5, Amos, Endnote, Lisrel85, Biopac 4.0.

Annually the University asks Faculties to bid for resources and equipment. Since 2008 £328,378 has been spent on equipment (e.g., Bod Pod, Cortex Metalyser and Metamax, Vicon and Ambulatory ECG Monitor, Finometer Haemodynamic Monitoring System). Research in this unit is supported by five technical staff. During the assessment period, externally funded posts include Research Associates (n=12), and Research Administrators (n=2).

e. Collaboration and contribution to the discipline or research base

The contribution of staff in this unit to the discipline is evidenced in the range of interdisciplinary research networks and collaborations, along with service of professional organisations.

There are a number of existing research networks which staff in this unit are part of, including the International Physical Activity and Environment Network (IPEN) project (Gidlow); PHENOTYPE research project (Gildow, Jones: www.phenotype.eu), and DIABSMART project (Chockalingam, Naemi, Chatzistergos, Healy). Jones is also on the advisory board of Emotion Regulation of Others and Self (EROS) a £2.1m Economic and Social Research Council project (www.erosresearch.org). In addition to these formal networks, there are a number of international and national research networks with other academics which has resulted in publications or grant submissions during the assessment period. Across our category A staff this includes 46 individuals from 35 Universities across 10 countries (for a full list see http://bit.ly/1aM9CCf). CSHER staff have conducted a range of interdisciplinary research evidenced in the collaboration in a number of projects. As part of the PHENOTYPE research project Gidlow and Jones are collaborating with a wide range of academics and users in other disciplines including: Health Geographers; Public Health Epidemiologists, Environmental Epidemiologists, Cardiologists, and specialists in mobile technology. Unnithan, Jones, Barker, Slater, Turner and Woodcock have worked with performance directors, directors of sports medicine, coaches and instructors in a range of sports at an elite level and other performance settings (e.g., dance). Chockalingam has led work by staff in the biomechanics discipline which has resulted in strong relationships with national (Salts Healthcare, Algeos, CL-7) and international (ASICS, TechnoFootbed, Tekscan, AR Hospitals) industry based on our research expertise in biomechanics. These collaborations have resulted in joint research outputs and funded projects (e.g., work with CL-7 on the project 'RUST funded by the Technology Strategy Board). In addition to these industrial partners, during this assessment period staff in this unit have conducted, or are currently conducting, research with the following organisations: Stoke City Football Club Academy; Wolverhampton Wanderers Football Club Academy; Nottinghamshire County Cricket Club; England and Wales Cricket Board; Elmhurst School for Dance [Birmingham Royal Ballet], English National Ballet School, NHS Stoke on Trent; Sandwell PCT; Stoke-on-Trent City Council (Public Health People, Leisure Services, Planning, Transport); NHS Scotland, NHS Stoke-on-Trent, South Staffs PCT; Voluntary Action Stoke-on-Trent; Beth Johnson Foundation, Harplands Mental Health Hospital, Sony Mobile, South Staffordshire prison in-reach team, with Sport England (through the West Midlands Physical Activity Network).

These collaborations with research users have enriched the research environment, through providing opportunities to conduct research in real-world settings, and benefit organisations and individuals. It has also helped shape our research agenda, so it is in keeping with end-user needs, and relevant government or organisation policy. There is external recognition of our partnerships. For example the partnership with Stoke City Football Club resulted in the Academy achieving Category One status, when audited by the Premier League. Our research has also broadened out beyond sport and for example, our work on psychological stress has underpinned partnerships with business (see impact statement 3a).

CSHER staff have made a substantial contribution to the discipline. Collectively category A staff have reviewed for over 100 peer reviewed journals which includes leading journals within sports science (e.g., *Medicine and Science in Sports and Exercise*), orthopaedics and physical medicine (e.g., *Gait & Posture*), psychology (e.g., *Emotion*) and physical activity and health (e.g., *Environmental Science and Technology*). They have also reviewed for a number of grant awarding bodies (e.g., Leverhulme Foundation; ESRC, The Nuffield Foundation, The British Academy, Social Sciences and Humanities Research Council of Canada; The Harry Frank Guggenheim Foundation). Editorial roles include Jones being an Associate Editor of the *Psychologist* (2008 – Present Day), Editor of *Sport and Exercise Psychology Review* (2007 – 2010) and Associate Editor of *Sport and Exercise Psychology Review* (2010 – present day) and a member of the Editorial board of the *International Review of Sport and Exercise Psychology* (2007- Present Day); Barker guest edited a special issue on single-case research methods published in the *Journal of Applied Sport Psychology* in 2013; Chockalingam has made a substantial contribution to two Cochrane reviews in the area of conservative management of scoliosis and is currently preparing the review on surgical vs. conservative management in scoliosis. He is one of the Founding Associate Editors for *Footwear Science*, Founding Research Editor for *Scoliosis*, one of the Senior Editors for *Internet Journal of Rehabilitation* and serves on the International Advisory Board of *The Foot* and

the Editorial Board of *Prosthetics and Orthotics International.*

In addition to dissemination through peer-reviewed publications and conference presentations staff have given invited lectures at numerous universities' research seminar series. Further, staff have given keynote and invited presentations at a number of conferences including; Unnithan at the Academy of Paediatric Chartered Physiotherapists Conference (London, 2012), Clinical Movement Analysis Society (Liverpool, 2012) the Joseph Rutenfranz Memorial Lecture (2010) of the joint Paediatric Work Physiology and North American Society for Pediatric Exercise Medicine conference; Jones at the British Association of Sport and Exercise Sciences Annual Student Conference (2010), the College of Osteopaths Annual Conference (2013); Turner at the British Chiropractic Association Autumn Conference (2013); Gidlow at the Urban Biodiversity Conference at Berlin (2013); Chockalingam at the International Research Society on Spinal deformities, Poland (2012), Society International Society of Prosthetics and Orthotics, India (2013), Clinical Movement Analysis Society, Dundee (2011) and Orthotic Technology Forum, Georgia Tech, Atlanta (2013). An upcoming keynote lecture is to be given by Jones at the 2013 Division of Sport and Exercise Psychology (BPS) Annual Conference. The dissemination of our research to the public is also important, as is the impact of our research more widely, and staff from this unit have given talks at a number of public engagement events (see impact statement 3a for more details).

Staff from this unit also make leading contributions to relevant professional associations and learned societies. Chockalingam served as the Treasurer for Footwear Biomechanics Group, which is a technical group of the International Society of Biomechanics, an organisation for which he has previously completed a four year term as the Secretary General. He is an Affiliate Professor at the University of Malta and a Visiting Professor at Sri Ramachandra University, Chennai, India. He is also a Research Fellow/Honorary Consultant at the University Hospital of North Staffordshire. Unnithan has been a Fellow of the American College of Sports Medicine since 1999, served the North American Society for Pediatric Exercise Medicine from 2004-2010 as President elect, President, and Past-President, was a member of the American College of Sports Medicine Strategic Health Initiative for paediatric exercise medicine and Chair of the Pediatric Special Interest Group (2006-2010). Barker is a Chartered Psychologist with the British Psychological Society (BPS) and a registered Sport and Exercise Psychologist (Health and Care Professions Council; HCPC) and has served many roles within the BPS including being a member of the Division of Sport and Exercise Psychology Training Committee (DSEPTC; 2009- to present day), an accredited Stage 2 supervisor and Stage 2 assessor, a media contributor for the Division of Sport and Exercise Psychology, and a reviewer for the division's scholarly journal. He also has many roles within BASES including accreditation supervisor, accreditation assessor, and network representative. Jones has served a variety of roles within the BPS including being an accredited Stage 2 supervisor and Stage 2 assessor (2011- present day), a member of DSEPTC (2011- 2012) and a member of the Psychologist and Digest Policy Committee (2008–Present Day). He has also co-authored the British Association of Sport and Exercise Sciences (BASES) position statement on emotion regulation in sport (2012), Gidlow is on the working group for primary care physical activity promotions Health Enhancing Physical Activity (HEPA), and IPEN.

During the assessment period, staff have conducted 18 PhD examinations as external examiners at University of Utrecht; Glasgow University; Loughborough University, University of Stirling; University of Birmingham (twice); Northumbria University; University of Chichester; University of Gloucestershire; University of Greenwich; Liverpool John Moores University; University of Dundee (twice), Exeter University; Oxford Brooks University; University of Central Lancashire; University of Leeds, Roehampton University. Staff have also examined one MPhil at University of Warwick and several MSc (by research) degrees at the University of Dundee.

The positive research environment is evidenced in the 193 peer-reviewed papers, six books and 23 chapters in edited books that unit staff have produced during the assessment period. The volume, and quality, of work reflect the positive trajectory of work in this unit as does the £743,961 of external funding already in place to support research from 2013-2014 onwards. We are confident that further growth towards our challenging targets (section b) is achievable through the sustainable and supportive research environment that has been developed.