

Institution: University of Strathclyde

Unit of Assessment: 19 Business and Management Studies

a. Overview

The intellectual development and rigour of research at Strathclyde Business School (SBS) is deliberately rooted in its seven departments (Accounting & Finance; Economics; Human Resource Management; Hunter Centre for Entrepreneurship; Marketing; Management Science; Strategy & Organisation) where expert knowledge within specific domains can be fostered and new talent nurtured. Within these departments, research objectives and attendant strategies are designed and implemented, guided by over-arching goals and resources managed by SBS, under the leadership of the Vice Dean (Research). Each department, led by a Head and Directors of Research and Knowledge Exchange, are largely coterminous with research domains, though Employment Studies is used to describe the research domain of the Department of Human Resource Management (HRM). This structure allows us to cultivate knowledge through the twin tracks of depth and breadth and most departments have three to four informal, specialist sub-groups. Three specialist research centres complement domain-based departments: the Fraser of Allander Institute (FAI), focused on regional economic analysis; the Scottish Centre for Employment Research (SCER); and the Strathclyde Institute of Operations Management (SIOM).

b. Research strategy

SBS academic research strength, as indicated in the RAE 2008 performance, derives from both excellence in domain-based departments and a capacity to engage in cross and inter-disciplinary activity through projects, clusters and specialist centres to produce and organise new knowledge, theories and diverse methodologies. Our strategic orientation is informed by Strathclyde's founding mission as 'a place of useful learning' and the increasingly differentiated identity as an international technological university; both highlighted in the award of Strathclyde as THES University of the Year 2012. Specifically, we seek to advance and invest in research that strengthens links between theory, practice and policy. A distinctive policy of engaging with the research needs of multiple stakeholders – companies, governmental and other organisations, such as social enterprises and trade unions – complements that orientation.

SBS's strategy is formed through a culture of dissemination and dialogue that seeks to build from the bottom as much as direct from the top. Initiatives for the identification of new research topics and priorities are taken, in part, at departmental level. Nevertheless, there is strong Faculty coordination, management and strategic development of research activities. The Faculty Research Committee, linking Directors of Research from each department, regularly reviews priorities and the extent of alignment of our projects and practices with them. To increase coordinative capacity, a Research Leadership Team (RLT), also chaired by the VDR, was established in 2011 that incorporates a new post of Associate Dean Research Enhancement, the Associate Dean Postgraduate Research (PGR) and the Vice Dean Knowledge Exchange (VDKE). It meets regularly to review opportunities, and propose and promote new initiatives. There is also a newly-created Knowledge Exchange Committee with similar departmental representation that coordinates practice-based research and shares responsibility for the development of impact cases. SBS's research planning and policy is developed firmly in conjunction with the University's Strategic Plan and the University-wide Research and Knowledge Exchange Committee. That plan sets general objectives and targets for areas such as performance, income and doctoral students that SBS interprets and adapts. We monitor SBS targets, not merely through the above structures, but on the basis of a long-established process of annual audit of performance. Since 2011, annual audit has included the appointment and involvement of leading external scholars to evaluate outputs and strategic direction within each domain. Audit not only informs a benchmarking exercise within departments and across SBS, it informs strategic choices about investment and growth, and underpins a variety of evaluation and staff development processes and initiatives.

Several key themes concerning future strategy emerged from the SBS RAE2008 submission. First, there was a general commitment to maintain and develop the critical mass of active researchers in domains that enable SBS to influence research agendas in respective fields through publication, projects and networks. Since RAE2008, we have sought to maintain levels of excellence, retain

key staff and expertise, and invest for new collaborative, international and inter-disciplinary opportunities. SBS has invested in new posts at all academic levels (7 Professors, 8 Readers/Senior Lecturers, 14 Lecturers and 21 Researchers, largely funded from external sources). Three University recruitment initiatives, the John Anderson Research Lectureships, the Strategic Academic Investment Scheme and the Chancellor's Fellowship Scheme, are designed to support recruitment of excellent candidates able to contribute to the renewal and enhancement of the intellectual base in domains of strategic importance. SBS has successfully competed for and added to these investments, resulting in 6 chairs and 5 research-led posts, in areas of distinctive and emergent areas of strength. Strategic investment has been incremental in domains where stability of staffing, notably in Employment Studies, Economics, Accounting & Finance, Management Science and Marketing, has enabled the continued excellence of research performance as exemplified by publications, grant income and hosting journals. The appointment of D. Cooper, Roberts and Williams has added to Accounting & Finance's reputation as a significant centre for critical and social accounting adding capacity to the existing resource (C. Cooper, Ferguson, Coulson, Thomson), while corporate and empirical finance (Fletcher, Marshall, McColgan, Davies, Tang) has been further strengthened by the appointment of high calibre staff (Faff, Hillier, Paudyal, Thapa). In Employment Studies, the recruitment of Marchington augments the already strong profile of scholarship on the impact of the transformation of employment relations in the context of economic restructuring (Taylor, Newsome, Cunningham, Stewart, Thompson). The risk and reliability group in Management Science (Bedford, Quigley, Walls) has further enhanced its reputation with Cooke, a renowned international scholar in expert judgment assessments, and Morton, a leading expert in health economics. Appointments in Marketing have strengthened practice-oriented research. In particular, Alexander, Demangeot, Doherty, Fain, Gong, Gounaris, He and Murdy complement the strengths of existing staff (Hart, Wagner, Walsh, Wilson) in the managerial dimensions of improving marketing practice. Considerable investment in the Hunter Centre for Entrepreneurship has transformed it from a cross-faculty teaching unit to a research-oriented academic department. Recruitment of internationally diverse, emerging scholars (Monsen, Casulli, Rosenbusch, Biniari) with specialisms in innovation, international entrepreneurship and family business has substantially increased the research output and reputation of this department. The successful award of the ESRC Enterprise Research Centre (in collaboration with Warwick, Aston and Imperial Business Schools) recognized the group's expertise in applied, policy-oriented research, particularly in the areas of entrepreneurial growth and diversity. There has been a strategic shift in the composition and orientation of the former Department of Management. A focused recruitment strategy to replace staff exits during the post-RAE2008 period has allowed greater concentration on the twin areas of Strategy & Organisation. McKiernan, Sminia and Wright extend the work of Eden and Ackermann, strongly focusing on the dynamics of strategy practice, while D'Adderio and Weston add perspectives on innovation and creativity that complement Simpson's work on the processes of organising and contribute to the University's broader agenda for technology innovation.

Investment has also been directed towards strengthening and stretching the applied research centres: FAI, SCER and SIOM. The FAI is at the heart of the Department of Economics' success in raising research funding and plays a pivotal role in large-scale projects that often involve an extensive, active network of researchers across subject disciplines and HEIs. The appointment of eight post-doctoral research associates (PDRAs) and a number of linked PhDs has strengthened FAI's work. SCER's particular focus on skills and job quality has been enhanced by the appointments of Findlay and Lindsay. SCER's enhanced impact is indicated by its designation as the hub for a new Scotland-wide Workplace Innovation Consortium underpinned by grant funding from the European Regional Development Fund. The international profile and expertise of SIOM and the operations management group (van der Meer, MacBryde) have been strengthened through adding core skills in optimisation with appointment of Akartunali and Illes. Collectively, the increased depth of activity by these groupings has led to the securing of grants totalling approximately £5.5m between 2008-13.

Such investment facilitates delivery of a second strategic theme from RAE2008 - strengthening policy-relevant research involving collaborations with multiple stakeholders. A detailed profile is contained in Section E (sub-section ii). A third theme was to extend the depth and diversity of

research funding. The core themes and extent of such funding can be found in Section D. One illustration of diversity in funding is in Employment Studies where project funders include ESRC, European Commission, Skills Development Scotland, Scottish Trade Union Congress, Technology Strategy Board, Big Lottery, Equalities & Human Rights Commission and EOC Scotland, Australian Research Council, and Canadian Social Science and Humanities Research Council.

The fourth and fifth themes were to strengthen international networks and collaborations, and to develop more inter- and multidisciplinary projects. Detailed evidence for achievements in these spheres can be seen in Section E (sub-sections i, iii). Establishing new research themes and clusters was a sixth theme. Among those referred to as emergent in RAE2008, funded projects and high quality publications have been developed in and across departments in risk (Quigley, Walls *ManSci*; Burns *EmpSt*); migrant labour (Baum, Nickson, Stewart *EmpSt*); entrepreneurial philanthropy (Shaw, Gordon *HCE*); performance management & measurement (MacBryde *ManSci*; Taylor *EmpSt*; Coulson *A&F*); innovation, creativity and creative industries (Thompson *EmpSt*; D'Adderio, Simpson, Weston *S&O*); supply chains & business process outsourcing (Newsome, Thompson, Taylor *EmpSt*; Wagner *Mktg*). Among the new research themes that have become significant during the REF period, the most prominent focuses on energy and energy management, with extensive funding secured (see Section D) by Economics (Allan, McGregor, Swales) and Management Science (Bedford, Walls, Howick, Quigley, Ackerman). The determinants of foreign direct investment has emerged as a major theme in Economics (Darby, Desbordes, Wooton) which has hosted two international conferences and published extensively on the topic. An integrative theme of Employment Studies research has been job quality and workplace innovation, with a range of externally-funded SCER projects under Findlay's leadership, adding to the strong existing research profile around skills and work organisation (Scholarios, Thompson, Nickson, Stewart). An inter-disciplinary research grouping (Bryce, Hamilton, Hewer, Jafari) around consumption, markets & society has matured mainly in Marketing, where staff have secured funding for two ESRC Seminar Series on 'Nostalgia in the 21st Century' and 'Consumer Vulnerability'.

Finally, there was a commitment to strengthening the doctoral community. SBS strategy is to focus recruitment and development of synergies with existing and emergent areas of research strength, thus enabling better support for students and a more cohesive overall research community. In pursuit of such synergies, the University, Faculty and Departments have made significant strategic investments in studentships since 2008, with annual averages of 12 University/SBS awards (increased to 19 for 2013-14), five SBS 'research cluster' awards, and 10 Departmental studentships. Many of these enjoy engaged support from practice and policy partners who provide finance or access to data. There also has been consistent engagement with and success in RCUK competitions. Since the creation of the ESRC's Scottish Graduate School of Social Sciences Doctoral Training Centre (DTC) in 2011, 5 out of a possible 9 studentships have been awarded to SBS students within the Business & Management / Accounting & Finance pathway competitions. A further 5 Business students have received awards from other pathways (Environment; Climate Change and Energy; Economic and Social History) or co-funded ESRC studentships (1 in HRM with Skills Development Scotland and 2 in Economics with the Scottish Government). SBS students have received 9 Open Competition ESRC and 5 EPSRC studentships since 2008. International collaborative partnerships have led to notable successes. SBS is the lead partner in a seven-country consortium of universities and non-academic partners awarded an EC FP7 Marie Curie Initial Training Network grant from January 2013 (The Changing Nature of Employment in Europe). This is a significant success given that it was one of 27 successful bids from 1200 and one of the few within the social sciences. SBS also recruits PhDs and DBAs through strategic service agreements with international partner academic institutions (e.g., the International School of Management, Dortmund).

In terms of future strategy, we will continue to build on successes in the seven research domains, though additional emphasis will be placed on ensuring sustainable capacity in the strategy and innovation areas. Increased emphasis will be placed on the provision of additional resources to underpin and extend the growing number of interdisciplinary projects detailed elsewhere. Existing cross-cutting themes such as sustainable environmental practices & business models and energy and risk will be added to in areas such as workplace-organisational innovation and performance

management. Second, there will be increased emphasis on research that builds on engagement with business and government. Given its track record in high quality publications, applied research and the strong performance of its near-market research centres, SBS is well placed to benefit from the raised profile of policy-oriented projects. In addition, SBS expects to benefit from the strategic opportunities offered by Strathclyde's positioning as a leading international technological university. We will seek to grow the recently-formed, interdisciplinary innovation research group, which brings together staff from Strategy & Organisation (D'Adderio, Simpson); Management Science (MacBryde, Dorfler); Marketing (Wagner, Fain, Gounaris); HCE (Monsen) and Employment Studies (Findlay). This group will benefit from Strathclyde's recent creation of a Technology & Innovation Centre (TIC), with £89M investment and a strong business engagement theme led by SBS, offering sectoral and thematic opportunities. For example, the operations management group will create a research hub within TIC (inspired by the MIT Media lab) to pursue further opportunities for collaboration on industry projects. The TIC's emphasis on interdisciplinary engagement and academic-business partnering offers further opportunities to leverage funding and act as lead players in research consortia at a national and international level. Third, SBS is making significant investments in its already successful PhD programme. An additional tranche of SBS studentships made available in 2013 and 2014 will focus on disciplinary and cross-disciplinary research clusters that create or extend synergies with existing expertise and projects. Further and more detailed evidence underpinning the strategic emphasis on collaborative and interdisciplinary projects can be found in the following sections.

c. People

i. Staffing strategy and staff development

In addition to our focus on strategic recruitment of high calibre research active staff, we have maintained equilibrium between research leaders and early career researchers. This has resulted in an age profile for SBS with a mid-point of 40-44 (also the mode), evidencing a balance between experience and early career research expertise. To develop research capability, SBS's research environment is designed to ensure consistent and continual support for staff to develop individual competences and meet collective objectives. Posts deriving from University-wide strategic funds are supported by a package of financial support (up to £50,000), while a Knowledge Exchange Enhancement Fund provides for new KE initiatives. SBS maintains a research support fund, amounting to £300,000 for the 2011-13 period, focusing largely on start-up projects. In 2009, the University launched a Researcher Development Programme (RDP), initially supported by RCUK Roberts' funding, which helps researchers enhance their personal and professional competencies and career management skills. One indication of progress is that 85% of early career researchers met the Faculty's REF inclusion threshold.

RDP provision is mapped to the UK's Researcher Development Framework and Statement (RDF/S) and the programme, now institutionally supported, is delivered by Faculties, Professional Services and external partners. Some key highlights include: the Enterprise Academy – an Institute of Leadership and Management (ILM) accredited residential programme to develop researchers' enterprising behaviours and support them in developing a business plan; Becoming an Engaging Researcher – a credit-bearing module enabling researchers to develop their skills in achieving high-quality public engagement; My CPD – an online tool based on RDF/S which supports researchers with their personal and career development; Researcher Career Pathway – an analysis tool to support researchers in identifying their development needs; Mentoring@ Strathclyde - a scheme to support career development; Images of Research – an exhibition and competition for staff and PGRs to showcase the pioneering research being carried out across the University's faculties; and Project Management in the Real World – a professionally accredited programme designed specifically for researchers. A case study series demonstrating the positive impact of Strathclyde's RDP is available at <http://www.strath.ac.uk/rdp/>.

The success of these initiatives is evidenced by Strathclyde's (2011) shortlisting for the THES Award for 'Outstanding Support for Early Career Researchers' and in the retention of the European Commission's HR Excellence in Research Award. Our KPIs include compliance (as measured by audit) with relevant standards including the QAA Code of Practice for Research Degree Programmes (2004), the European Charter for Researchers Code of Conduct for the Recruitment

of Researchers, and the UK Researcher Development Framework (RDF) by 2012. A mid to late career development programme for academics was launched in September 2012, while the university runs a mandatory research supervisor's training course and academic writing 'retreats' are organised throughout the summer months which SBS staff regularly attend, supported by the Faculty. The Research and Knowledge Exchange Service (RKES) department provides assistance on securing funding for projects, for example, negotiating and administering grants and contracts. Its team of 57 staff is augmented by Faculty-specific Business Development Managers who collaborate with academics on the refinement of research proposals. Personal development and training opportunities are also provided through the Organisational and Staff Development Unit (OSDU) and the Strathclyde programme in Research and Leadership (SPIRAL). These include: Leadership and Heads of Department programmes, management skills, PDP support and advice, new staff induction seminars and team development. A 2013 Grant Challenge programme aimed at researchers in SBS and the HASS Faculty aimed to increase support for and stimulation of new project applications, leading to two additional ESRC bids from SBS participants. This has been followed up in the new academic year by similar Publication and Collaborative PhD Challenges.

All research-active staff have access to funds for career development, training and sabbaticals (the latter operate on the basis of approval from the FRC against a specified programme of research). Consideration by Faculty Resources and Planning Committee (FRaP) ensures that all requests, once endorsed by the head of department, are treated equitably and consistently. Sabbatical approval requires a clear statement of intended outputs in line with departmental and SBS priorities. In addition to such requests, it is usual for heads of department to be granted a sabbatical on completion of their term of office to enable them to refocus their attention on their research following a period of academic management. FRaP approval is sought for all such sabbaticals. In February 2012, the system of mentoring for research staff was formalised; this provides a one-to-one supportive relationship focused on learning and development which helps individuals fulfil their potential and facilitates career development. The priority assigned to research is reflected in the standard basis for workload planning which comprises 40% of allocated time, teaching 40% and citizenship 20%. Aside from standard promotion processes, SBS rewards excellence in research in a variety of ways, including a sabbatical system and the Senior Academic Review and Development (SARD) annual appraisal process.

Policies and procedures are in place to ensure that appointments and promotions are based only on transparent criteria of merit, ability and potential. This includes, as the result of the University holding the Government's 'Double Tick' award, a pre-interview assessment for individuals who confirm that they have a disability, against essential criteria. SBS's diversity is evidenced in a growing proportion of female staff (currently up to 38%) and of non-UK citizens (currently 29%). In addition, since January 1999 the University has been formally recognised by Investors in People (reaffirmed in 2008). In order to achieve the standard, organisations must demonstrate, among other things, that top management is committed to development of all the staff in the organisation. The University's Athena Swan Champion is an SBS academic, and the Athena Swan Institutional Bronze Award was achieved in August 2011. The award recognises that the University has a solid foundation for eliminating gender bias and developing an inclusive culture that values all staff.

Research is firmly embedded in the criteria for successful probation, promotion and is a central feature of the Accountability and Development Review (ADR). The criteria include a balance of teaching, research and good citizenship qualities, appropriate to level. At the core of the criteria is a requirement that to be counted as 'research active' academic staff need to develop and sustain a continuous body of work that demonstrates independent research capacity. We continuously improve the number in this category by supporting staff with financial, time and know-how resources to increase their number of high quality publications (output) and projects (input). In the past 18 months, SBS has also been working closely with the University's Human Resources team to devise a performance management process where we have identified under-performance (no research outputs, or activity that does not reach appropriate volume or quality that can demonstrate a body of independent research work). Heads of Department discuss contractual status and/or require the production of detailed research plans that are regularly reviewed.

ii. Research Students

Table 1: Disaggregated total of doctoral awards per year

	2008-09	2009-10	2010-11	2011-12	2012-13	Grand Total
Professional Doctorates	0	1	0	4	3	8
PhD	21	21	13	30	20	105
Total	21	22	13	34	23	113

At the start of the 2013-14 session, SBS had 218 research students, most of whom are registered for PhDs, with small cohorts of research Master's (19) and professional doctorates (9) (DBA). Over half are non-UK (25% EU; 40% non-EU). All research students are guided by supervisory teams who are international experts in their fields and are recognised as qualified supervisors according to the Strathclyde Code of Practice for Postgraduate Research Programmes. Departments are responsible for managing each student's broad academic apprenticeship, and students are further developed through attendance at research seminars, teaching in specialist areas from their second year of study, participation in doctoral colloquia and international research networks; students are also encouraged to submit papers to, and provided support for attendance at, academic conferences. Opportunities for international and external engagement, such as placements at international institutions, international advisers, collaborating with external and non-academic organisations, public engagement and outreach, are encouraged and monitored through a bi-annual progress review system. Students also benefit from wider exposure to a large, multi-disciplinary business school, and since 2010 25 cross-departmental and 17 cross-faculty supervisory teams have been established through studentships in strategically significant research areas. Recruitment strategy aims to attract the highest quality students through collaborations with academic and non-academic partners, studentship awards, and the MRes in Business and Management as a training pathway to a doctoral degree. Practitioner partners provide either financial support, or access to internships/placements or data. Most recently, these have included the Scottish Government, Scottish Enterprise, the US Air Force Office of Scientific Research, NASA, the Risk Consortium, the Entrepreneurial Exchange, and the Public and Commercial Services Union. SBS's MRes in Business and Management, which received ESRC recognition in 2001, is now integrated into the University's Researcher Development Programme and has provided the research training foundation for 31 doctoral researchers between 2008 and 2013, with a progression to PhD rate of 68%.

In terms of partnerships, SBS has convened two large pathways of the Scottish ESRC DTC, Business & Management (2011-13) and Accounting & Finance (2011-13), and in 2011 hosted the first Scotland-wide colloquia for both pathways. As well as opening up our MRes classes to research students across the DTC, SBS's Accounting & Finance department has taken a lead (with Edinburgh) in providing pathway advanced training to DTC students across Scotland. From 2013, the two institutions will collaborate to offer three intensive doctoral-level courses (Corporate Finance, Empirical Accounting, Qualitative Accounting) with the aim of training highly skilled students who will be able to compete with the best graduates internationally in their future careers. Economics is a founding partner in the Scottish Graduate Programme in Economics (SGPE) that is the preeminent route to doctoral training in Economics in Scotland.

Training for all SBS research students has at its core a well-established suite of research methodology classes leading to the MRes or a PG Certificate/Diploma in Research Methodology for Business & Management. All MPhil and doctoral students must complete at minimum the Certificate, which is consistent with the four competence domains defined by the national Researcher Development Framework This is designed to add breadth to students' discipline-specific training. Module design allows accessibility for students who are part-time, undertaking professional doctorates (often senior practitioners working full-time) or who are at advanced stages of study. SBS received Roberts Funding to develop an online, searchable Methods Library based

on staff and external speakers' lectures and workshops and to extend an innovative course in Interdisciplinary Collaborative Research across the University. An annual 'Engage with Strathclyde' week facilitates student involvement with industry through cross-faculty teams providing solutions for companies; University Research Day allows students to share their work with the general public; and Pathways to Research Enterprise, which offers all Strathclyde researchers professionally-accredited training to develop career-enhancing skills alongside entrepreneurs, is the only enterprise-focused training in the UK specifically for research students and staff.

d. Income, infrastructure and facilities

Research income has enabled investment in PhD scholarships, graduate teaching assistants, dedicated administrative support and a faculty-wide research fund that has helped create the resource headroom for research activities. SBS has actively sought to improve its competitiveness, diversifying income sources and enhancing income levels, as the climate for RCUK funding has become more constrained and competitive. The positioning of Strathclyde as a leading international technological university frames its strategic approach, for example in relation to cross-disciplinary and interdisciplinary collaborations to secure new funding sources. Over the REF period, SBS has participated in 124 successful research awards with a combined value of £19,888,774, of which 88 awards with a value of £7,054,496 were SBS-led. SBS strategy does not prescribe personal research activities and, as can be seen from Section B, there is considerable diversity of content and contributions. However, the University's positioning has enabled a broad focus on three core themes (energy and energy management; economic performance and innovation; ethics, equality and diversity in business and employment), each of which have attracted significant levels of research income and investment and collectively comprise a large proportion of research activities.

Research in the area of energy and energy management has led to several awards in Economics, including £450k from the Scottish Government, £81k from the ESRC, and £695k from the EPSRC focusing on climate change, energy conservation and environmental trade balances. Building on a strong cross-disciplinary relationship, Economics in conjunction with colleagues in Engineering, has also focused on off-shore renewables as part of the EPSRC-funded Supergen Marine & Supergen Wind Consortia. Two key projects in Management Science, the Northern Isles New Energy Solutions (NINES), a £1.3M project funded by Scottish & Southern Energy, and an EPSRC-funded (£315k) project with a strong input from Economics on new mathematical tools for modelling uncertainties in offshore turbine operation and maintenance, also bring together colleagues from the Engineering and Business faculties. Since 2008, Management Science has been named on EPSRC-funded research projects with a total value of £2.5M, and academics within the department named as PIs for £1.5M of this funding. Marketing secured EPSRC funding for marketing multi-scale flows, while Economics is coordinating a €2.7M EU initiative on sustainable cities, building on the success of a previous project, 'Sustainable Glasgow', and has recently secured a £600k award from the Technology Strategy Board as part of the Future Cities Demonstrator award to the city. Accounting & Finance (A&F) have pursued themes of environmental risk in the financial sector with grants from the Canadian Social Sciences and Humanities Research Council to study risk governance in theory and practice: connecting Canadian and UK risk networks to improve the resilience of critical infrastructure, and smaller awards for research on climate change accounting. Cross-disciplinary collaborations within this theme are likely to continue, as the University's new Technology & Innovation Centre (TIC) provides increasing opportunities for SBS's academics to work with key industrial and technology-focused partners, such as Fraunhofer Gesellschaft, which has recently established its UK HQ (Fraunhofer UK Research Ltd) at the University.

The second core theme, economic performance and innovation, also accounts for a significant portion of the funded research undertaken within SBS. Economics has led a large-scale (£3M) multidisciplinary study assessing the impact of higher education institutions on regional economies, funded by the ESRC and HE funding bodies; a major ESRC grant on macroeconomic forecasting under uncertainty; and recently secured a £250k award under the ESRC's Future of Scotland and the UK pre and post referendum initiative. SCER, in collaboration with colleagues at Oxford, secured ESRC funding for research identifying the extent and use of graduate skills in a tightening

Environment template (REF5)

labour market. SCER also attracted £160k funding, primarily from the ERDF to lead a multi-institutional Workplace Innovation Consortium. Marketing contributes to this theme, studying supply networks in the global pharmaceuticals industry (KTP-funded), as well as a Leverhulme Trust funded exploration of the urban mobilisation of rural living. The Hunter Centre for Entrepreneurship (HCE) was part of a pool of business schools (Warwick, Aston, Imperial & Strathclyde) awarded the Enterprise Research Centre, a £3.6M project analysing SME growth, co-funded by the ESRC, Technology Strategy Board, Department of BIS and the British Bankers Association. The Enterprise Research Centre aims to improve the evidence base for enterprise policy and practice, focusing on SME growth and increasing the diversity of SME owners. HCE also received ESRC funding and additional grants from NESTA and the City of London Authority to study informal investor (business angel) exits, and funding from Scottish Enterprise to study the dynamics of high growth firms. A focus on empirical finance within A&F has seen international research funding for studies on pension return distributions, stock market de-listings and minority shareholder protection, insider trading, and the pricing of liquidity and market structure.

A third prominent theme within SBS's funded research focuses on issues of ethics, equality and diversity in business and employment. Research funding to study gender and job segregation in call centres by HRM, and gendered pay and rewards in different industry sectors by SCER, funded by the Equalities & Human Rights Commission (EHRC) and EOC Scotland have been complemented by studies exploring the dynamics of employment change in supply chains (Nuffield Foundation) and student income, expenditure and debt (Scottish Government). More recently, HRM received a €4.6M EU Marie Curie Initial Training Award for the Changing Employment programme, with the intention of finding solutions to some of the most pressing employment problems currently facing the EU. In Economics, the impact of an ageing population has been supported by new awards with colleagues at Stirling with funds from the National Institute of Ageing, Washington. Studies of accounting, governance and ethics, funded both by research councils (ESRC) and trade unions (Unison) have been undertaken in Accounting and Finance, while in Economics government-funded studies have been undertaken exploring the effect of attitudes and behaviours at work. Within HCE, notably one of the few academic departments endowed by a philanthropic donor, the ESRC Centre for Charitable Giving & Philanthropy (CGAP) has been co-funded by ESRC, the Cabinet Office, the Scottish Government & Carnegie UK, to explore the scale, purpose and dynamics of entrepreneurial philanthropy in the 21st century. In this regard, SBS regularly hosts public lectures by prominent figures in the business world, such as the Enlightenment Lectures series hosted by SBS alumnus and benefactor Sir Tom Hunter, and the Family Business Lectures held in conjunction with the Scottish Family Business Association.

Financial support for specialist and collaborative seminar programmes has been secured from the ESRC across a range of themes. These include the joint programme of seminars in Accounting & Finance and Economics (SAFE), the previously referred to series within Marketing and two seminar series in HRM focused on job quality and on trust in the employment relationship. Additional support for seminar series drawing together multi-institutional partners as well as policy-makers and practitioners is forthcoming from the Strathclyde-hosted Insight Institute, a collaborative venture of five Scottish universities, which aims to inform policy and practice through programmes of knowledge exchange involving multi-disciplinary and multi-sector perspectives. Insight Institute funding has been awarded for seminar series exploring issues such as developing capacity in technology road-mapping (Marketing), as well as internationalization, leadership and diversity in the cultural industries (HCE) which developed from a NESTA-funded project exploring entrepreneurship in Scotland's creative industries.

SBS's research infrastructure comprises financial investment and facilities as well as managerial and administrative support. The infrastructure requirements of SBS's research includes office accommodation, state of the art computing facilities, subscription access to appropriate and relevant databases, and support for research grant applications provided by the University's Research & Knowledge Exchange Services (RKES). All of these necessities are in place, and the University's £350M estates plan is on course to deliver a modernised, co-located and improved environment for SBS staff and PhD students by 2014. We expect this investment to facilitate stronger inter-disciplinary collaborations across departments. Beyond this, the major infrastructure

element of SBS's research lies in supporting the researchers themselves.

Excellence is rewarded through access to discretionary funds periodically directed towards research. This support is evident at the faculty level, where the Faculty Research Committee (FRC) distributes the previously-referred to £300,000 support fund by means of competitive bidding. The fund helps develop staff to support the key strategic objectives of income generation and publishing. FRC reviews SBS research strategy annually, plans and facilitates initiatives across SBS and co-ordinates the assessment and allocation of University studentships, all contributing to staff development. At departmental level, each department has a research director and research committees that are led by senior academics to determine cognate-based directions, priorities and resourcing levels. Over the period, these have allocated between £10,000 and £15,000 annually supporting, for example, small research bids, short writing sabbaticals overseas for ECR staff (e.g. at IE Madrid; INSEAD; and Kelley Business School, Indiana University), and the purchase of specialist software for research. In addition, department's oversee funds for the appointment of doctoral students as tutorial assistants, unlocking time for staff. Departments also fund activities such as conference attendance, seminar programmes, co-funding of PhD studentships and some small scale pump-priming activities. SBS supplements this through research funds dispersed on the basis of competitive application, through diverse initiatives such as co-funding of PhD studentships, and with the University, co-funding investment in strategic appointments. The average annual expenditure on conference attendance in each department is in excess of £1500 per head with the intention that all staff have the opportunity to attend at least one high-quality, international conference each year. Departments also provide conference funding support for their PhD candidates. In addition, staff maintain a personal research account, whereby surpluses are retained and used to supplement research activity.

SBS's Research Leadership Team is supported by a Research Co-ordinator, the Head of Recruitment and Marketing, and the IT Manager. This structure aims to sustain and stimulate research activities at individual, departmental and research centre levels. At University level, support through briefings, training and strategy formation is provided by the Research and Knowledge Exchange Services (RKES) office. The management of research has been facilitated by the implementation of a University-wide information gathering IT system and electronic repository (PURE), which has enabled regular auditing. Office accommodation, IT facilities and access to fast-responding technical support staff help promote vitality within the research environment for staff and PGRs. The recently-established University's Research Data Management Policy establishes a framework within which support and advice for researchers can be provided, with particular focus on enabling researchers make informed decisions in relation to storage of and access to data.

e. Collaboration or contribution to the discipline or research base

A key part of SBS's prominent research profile is achieved through extensive links, networks and collaborations with researchers nationally and internationally, often taking leadership roles in projects and practices. The developmental support outlined in Section B ensures that the culture of SBS encourages and sustains collaborations and professional contributions.

i. Interdisciplinary collaboration: Though having deep roots in particular domains, the culture of SBS and the University encourages and facilitates internal and external interdisciplinary collaboration. University and Faculty research funds target and incentivise cross-department and Faculty bids. For example, Bridging the Gap (BTG) is a University scheme to foster interdisciplinary collaboration, and SCER is currently working with the Departments of Management Science and Pharmacy on a BTG project on the impact of automation on health services. Our other applied research centres are prominent vehicles for interdisciplinarity. SIOM itself represents an innovative collaboration between SBS and the Faculty of Engineering. The strategic modeling and management group not only links the Departments of Management Science and Strategy & Organisation, but also with the Engineering Faculty. FAI plays a pivotal role in large-scale research projects that often involve an extensive network of active researchers across many disciplines and HEIs. These include the coordination of the £3M multi-disciplinary ESRC co-funded project on *The Impacts of HEIs on Regional Economies*, and the €2.7M EU initiative on sustainable cities. More

broadly, staff from Economics are working on various aspects of energy-economy-environment system interdependence, the research involving extensive collaborations with a wide range of UK and EU universities and disciplines. Much of the research in the Hunter Centre for Entrepreneurship is undertaken on a collaborative basis, between staff in the department, across SBS, and in other universities in the UK and internationally. Economics and other SBS departments are also engaging in joint research initiatives with the HASS and Engineering Faculties through the recently established Strathclyde International Public Policy Institute (SIPPI), which hosts both the Institute for Future Cities, and (in the near future) the Centre for Energy Policy. Management Science is currently working on funded research projects with academics from 15 different universities. Within Marketing a commitment to interdisciplinarity is evidenced by collaborations with colleagues across SBS, Engineering and HASS. Research on risk is a key theme in a number of departments and is expressed in a Canadian Government-funded project involving collaboration between A&F, HRM and Management Science departments. A growing focus on interdisciplinarity is shown by the increasing numbers of PhD studentships involving cross-departmental projects and supervision, and national and international collaborations for doctoral training (see Section C).

ii. Networks and collaborations with users: SBS applies the University's mission as a 'place of useful learning' through a consistent concern to build research and other relationships with a variety of stakeholders. We have recorded 258 partnerships with external organisations (148 with business, 80 with government and 30 with 3rd sector) during the REF period. SBS's Centre for Corporate Connections has been central to creating more effective and coherent industry-based research connections. For example, extensive links with Babcock International Group, including a dedicated MBA, has led to collaborative research on performance measurement and journal papers co-authored by staff in Strategy & Organisation and Babcock employees. Successful corporate links and collaborative research partnerships are evidenced by the eight Knowledge Transfer Partnerships (KTPs) across SBS during the assessment period; while the new Technology & Innovation Centre (TIC) is facilitating further opportunities. An operations management hub provides a central pool of expertise, supporting organisations and research teams. For example, a project for the NHS to improve a logistics centre has generated further new research opportunities. There are numerous other examples of collaborative, practice-based research across SBS's departments. Economics is a member of the Scottish Institute for Research in Economics (SIRE), and organises and participates in ECR workshops, research seminars, and conferences. We have already referred to the Risk Consortium, where large companies meet regularly to share problems and discuss current research. The risk and reliability group are also currently working with the Health & Safety Leaders Forum, and a further project involves collaboration with the large energy providers benchmarking health & safety KPIs. There are also strong links with sector and professional bodies. For example, drawing on its ESRC-funded network on good and bad jobs, SCER in 2012 organised an employer seminar for the Chartered Institute of Personnel and Development (CIPD) to discuss the role of the HR function in improving job quality.

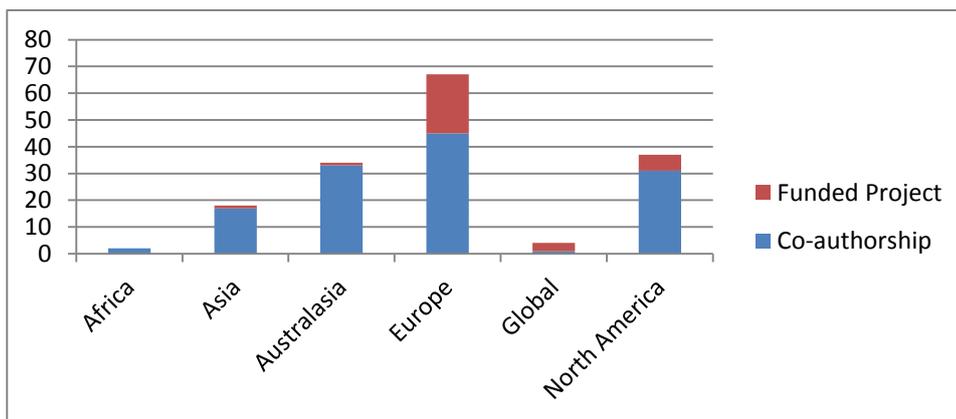
SBS has strong research links to government. This is particularly reflected in research within Economics and HRM. The former is a founder member of the Centre of Expertise in Climate Change; SCER in HRM has undertaken funded projects from the Scottish Government. Taylor's work on call centres and business process offshoring has been partly funded by Scottish Enterprise and Scottish Development International. It is also a significant example of our multi-stakeholder approach: collaborations also involve the International Association of Outsourcing Professionals; the Contact Centre Association; the European Outsourcing Association; and Unite the Union. HRM is distinctive in having extensive research links with trade unions, several of which sponsor and support research projects, including on workplace learning, sickness and absence and performance management. A number of departments, including HCE and HRM also have strong research links with third sector organisations. HRM's collaborations (led by Cunningham and Nickson) and co-funding involve the Voluntary Sector Social Services Workforce Unit, the Scottish Voluntary Sector HR Network, and the trade union UNISON.

iii. International academic collaborations: SBS's research agenda has traditionally emphasised

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the international dimension of research activity, manifested in a number of ways: existing and emerging research clusters to connect with partners through key cross-national alliances; international research collaborations to leverage funding; taking leading roles in international research networks; external appointments of eminent SBS academics in the form of visiting professorships and fellowships, invitations to present keynote speeches at international conferences; and editorships of leading international journals. The 2012 Strategic Plan gives additional emphasis to further developing international research links through a sabbatical leave programme and research exchanges with our international partners; and a programme for international advisors and exchanges with respect to PGRs. The range of collaborations is too extensive to list, but Figure 1 gives an indication of the number and distribution on two measures: collaborations resulting in published papers in the REF period and projects funded by other national and global bodies.

Figure 1: The distribution of international research collaborations



iv. Key roles in international research networks, conferences or international bodies: As indicated earlier, SBS is the lead partner in a seven-country consortium of universities and non-academic partners awarded a Marie Curie Initial Training Network grant in 2012 (Stewart et al., Employment Studies). The Department of Economics supports and organises the European Trade Study Group, the largest annual conference in international trade in the world (Wooton is founder and conference organiser). Koop is co-Chair of the European Seminar on Bayesian Economics. Levie (HCE) runs the Global Entrepreneurship Monitor (Scotland & UK reports), used by policy makers around the globe; Thompson (HRM) is the Steering Group Convener for the International Labour Process Conference; Coulson (A&F) has been a member of and consultant to the UNCTAD International Standards on Accounting & Reporting Group. Within Management Science, Walls is project leader for International Standard IEC 61710 and Belton expert advisor and consultant to the United Nations Environment Programme. Jafari, Shaw, Findlay, Biniari, Taylor and Newsome have been track chairs at leading international conferences in marketing, labour studies and entrepreneurship. Simpson has been an EGOS sub-theme co-convenor from 2008-13. Marchington is the co-convenor of the HRM Group of the International Labour and Employment Relations Association. D’Adderio has been selected as co-organiser of the EGOS Standing Working Group on Routines and Dynamics and is a founder of the interdisciplinary network MIND (Making Innovation Dependable). O’Doherty was chair of the Academy of Marketing annual conference 2103. Levie is on the Expert Panel on Entrepreneurship and Social Exclusion for the European Commission. R. Wright is a member of the International Advisory Group, Academy of Social Sciences (since 2011); senior external demographic expert, Office of National Statistics (since 2008) and member of ESRC International and Methods and Infrastructure Committees.

v. Journal editorship, seminar series, conferences and research-based CPD: Several SBS staff have a research leadership role in editing international peer-reviewed journals (Table 1). In addition to these prominent positions, there are currently 20 Associate Editor and 84 editorial board positions held by staff. As has been previously indicated, SBS has received funding for a number of high profile ESRC Seminar Series involving leading UK and international scholars: two from Employment Studies and two from Marketing. During the 2008-13 period SBS staff gave keynote

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addresses at 118 conferences.

Table 1 Editorships of Leading International Journals 2008-13

Journal	SBS Academic	Role
Supply Chain Management	Wagner	Editor-in-chief
Journal of Marketing Management	Hewer, Hart	Editor, Editor-in-Chief
Entrepreneurship, Theory & Practice	Carter	Editor
New Technology, Work & Employment	Taylor	Co-Editor
Work, Employment & Society	Taylor, Thompson, Scholarios	Co-Editors
Critical Perspectives on Accounting	Cooper	Editor in Chief
Journal of Multicriteria Decision Analysis	Belton	Editor
Employee Relations	Nickson	Editor
Social, Environmental and Accountability Journal	Ferguson	Co-editor
Journal of Economics and Business	Hillier	Editor
Scottish Journal of Political Economy	Koop	Editor
Human Resource Management Journal	Marchington	Co-Editor
Journal of Behavioural Decision-Making	Wright	Editor
Review of Behavioural Finance	Paudyal	Editor
Social Policy & Administration	Lindsay	Co-Editor

vi. Contribution to professional associations, learned societies, and disciplinary initiatives:

Belton (Management Science) was awarded the Georg Cantor Lifetime Achievement Award for her work on multi-criteria decision analysis as well as being made a Companion of the Operational Research Society and Bedford (Management Science) was given an honorary doctorate from the Faculté Polytechnique de Mons and elected Fellow of the Royal Society of Edinburgh. Carter (HCE) received the Prowess ‘Women’s Enterprise Researcher of the Year’ Prize and appointed OBE for services to women entrepreneurs in 2008, and currently sits on the Research Awards Advisory Committee of the Leverhulme Trust. Marchington (HRM) is a Companion of the CIPD, one of only 200 from a membership of 135,000, and named as one of the UK’s most influential HR thinkers by HR Magazine in 2012. The Department of HRM (Stewart, Newsome, Cunningham, Gilbert) was the steward of the British Universities Industrial Relations Association 2010-13. Thompson has acted as International Assessor for the Swedish Council for Working Life and Social Research. Taylor was appointed a Global Scot in 2008. Fellowships have been awarded to Hart by the Marketing Society, Royal Society of Edinburgh and the Leadership Trust Foundation and to A. Wilson by the Market Research Society and the Chartered Institute of Marketing. Bedford chairs the Committee of Professors of Operational Research, and is a member of the General Council of the OR Society; Eden is Dean of the British Academy of Management Fellows College. Thomson is convenor for the Centre for Social and Environmental Accounting Research Council. Ackermann was elected Fellow of the British Academy of Management. Monsen is Representative-at-Large for the entrepreneurship division of the Academy of Management. Hart is a member of the International Board of Directors for AACSB.

Among many awards received for papers were: Findlay and Thompson (Industrial Relations Journal) Emerald Management Review Citations of Excellence 2010 - Top 50 papers; C. Cooper (Critical Perspectives on Accounting) received the same award for 2009 and Outstanding Paper Award (Accounting, Auditing and Accountability Journal) at the Literati Network Awards for Excellence 2013; Scholarios and Taylor (Human Relations) Paper of the Year Award 2011; Thomson (Accounting, Auditing and Accountability Journal) was awarded the Mary Parker Follett Prize for the best paper published in 2008; Caemmerer and A. Wilson (International Journal of Operations and Production Management) the Highly Commended Award Emerald Literati Network, 2011; and G. Wright (Health Economics) Methodological Excellence Award from the International Society for Pharmacoeconomics and Outcomes Research 2009.