Institution: London South Bank University

Unit of Assessment: Sports and Exercise Science, Leisure and Tourism

a. Context

SESRC generates impact across many diverse areas of society including commercial, organisational, health and wellbeing, local government and regulatory bodies' policies and cultural perception of science. Current beneficiaries include businesses, clinicians, sports professionals, athletes, local government and national governing bodies. In line with our long-term research strategy of expanding our influence, the impact of our projects has strengthened and broadened since 2008, both nationally and internationally.

Research developed at the SESRC has led to impact in the following ways:

- Generated Intellectual Property that has and is being commercialised.
- Provided new product lines to our partners, leading to increased sales.
- Established efficacy of products and services in clinical patients and athlete populations.
- Led to updating of policies and programmes within sport.
- Improved professional practice.
- Improved guidelines for school and community sport and aided participation in physical activity.
- Raised extra charitable donations and increased physical activity of the participants.

b. Approach to impact

We recognise that different pathways to impact and approaches to engagement with non-academic audiences are appropriate, depending on the type and stage of the research and the dissemination process. Rather than a single approach, we would identify four distinct, though not mutually exclusive, dimensions of impact which are applicable to our work:

1) ***Economic, commercial, organisational impact***. The work of the SESRC has led to economic impact for our partners in terms of increased turnover and international expansion. The foundation for this has been through research that develops intellectual property (IP) allowing partners to create product families, protectable commercial space and device performance claims. Many of the partners we engage with are early stage businesses; therefore we aim to:
   a) Access joint funding schemes through LSBU's Knowledge Transfer Centre (2 Knowledge Transfer Partnerships (KTPs) gained since 2008), attract external research and development funding with the support of the University's Research Office (e.g. from Guy's & St Thomas' Charitable Trust).
   b) Secure start-up funding for prototyping, concept and efficacy testing to minimise research and development costs to the partner, e.g. 4 awards through the London Development Agency's Emerald Proof of Concept Fund and 3 Voucher awards under its Knowledge Connect (KC) initiative. These were all gained within the REF2014 timeframe with support of the University's Enterprise Unit.
   c) Generate IP. Ten patent applications were filed by our partners in the period with SESRC staff as named inventors. Fitflop and Actegy had no IP prior to collaborating with SESRC. IP generation is not limited to patents, for example, we assisted Big Thoughts Ltd. to expand its range of healthy foods included in the Weightwatchers™ programme.
   d) Support marketing claims and initiatives. We have provided partners with valuable technical support, advice and data in meeting regulatory and marketing requirements.

2) ***Impacts on practitioners and professional services***. The SESRC engages with partners to advance the application from research and to directly measure efficacy of programmes and products. This often happens with the engagement of clinical and sports practitioners, we:
   a) Facilitate the adoption of technologies and programmes developed by the SESRC. For example, altitude training strategies based on our research were implemented by The Football Association for England players prior to the 2010 World Cup and by GB Basketball for London 2012.
   b) Serve as scientific experts to clinical units undertaking trials (e.g. with Vascular Surgeons at Charing Cross Hospital, Diabetic Foot Clinics at King's College Hospital).

c) Support continued professional development related to our research. Ten courses were validated for training and qualifying exercise professionals nationally (2008-2010). For example, the Altitude training REPS course.
d) Disseminate our research to applied organisations. Supported by EU funding, the 'Technology and Sports Coaching' conference organised by SESRC in 2013 attracted 135 participants, representing 9 European countries and a wide range of sports professional backgrounds. SESRC delivered lectures at Governmental Department research and technology transfer events (DTi). SESRC scientists delivered over 100 conference communications, keynote and invited presentations to scientists, clinicians, sport and health professionals.

3) ***Impacts on public policy, law and services.*** Research has led to the SESRC:
a) Advising local government on policies in areas related to SESRC expertise. For example, SESRC staff sat on the steering group for ProActive who advised Lambeth and Southwark Councils on the physical activity and health remit leading to improved guidelines for school and community participation.
b) Providing expert opinion to regulatory and advertising bodies (e.g. Food and Drug Administration, Therapeutic Goods Administration, Medicines and Healthcare Products Regulatory Agency, Advertising Standards Agency).

4) ***Impact through dissemination and public engagement.*** The SESRC understands the importance of engaging with the public, aimed at increasing sport and physical activity participation but also to inspire the next generation of scientists. Our approach has involved using:
a) National media, providing expert opinion and product efficacy testing (e.g. Men's Health, BBC, Channel 4, Shine TV, Radio 4). Staff undertake media training from LSBU's marketing team to engage in an outward-facing manner with, for example, the scientific, professional and popular media.
b) High profile public dissemination of SESRC's research. For example, we have presented at the Royal Institution Christmas Lectures (2011) and demonstrated methods for exercise testing, developed at SESRC, at the Wellcome Trust Big Bang Fair (2011).

SESRC has established the Human Performance Centre (HPC) as the vehicle that identifies research ideas with potential impact and supports the development of impact. This involves contacting partners who could potentially benefit from and develop this impact, and managing the impact aspect of projects. The HPC employed a business development manager specifically for this purpose from 2008-present.

c. Strategy and plans

SESRC impact strategy for developing research-inspired biotechnology and programmes that increase participation in- and efficacy of- exercise and healthy lifestyle has already demonstrated significant success. In the next 5 years we will:

1) Support internationalisation of existing products with our current business partners.
2) Increase our engagement with the sport and health-care industry. Our aim is to develop 2 new product lines.
3) Create 5 new industry partnerships supported through co-funded schemes (e.g. KTP and KC voucher programmes).
4) Expand and strengthen our multidisciplinary capability through staff development and recruitment to increase breadth and depth of enterprise activities.
5) Incentivise staff to engage with research and enterprise through teaching buy-out, KTPs and consultancy – at least 3 new members of staff involved in industrial projects.
6) Organise an annual conference and regular seminars/workshops to engage scientists with relevant business/organisations – 1 national/international event per annum.
7) Develop a process for supporting, recognising, measuring and tracking impact developments. Embed the process within SESRC activities and staff.

Two health products developed at SESRC are already selling worldwide (Fitflop, Revitive) and

another (Aerosure) is currently being launched. SESRC will support the internationalisation of these devices where possible via media and regulatory input. SESRC staff will be supported by the University's Enterprise Unit to create 2 more health-related products and link them with existing or new industrial partners. Further, competitive funding has been secured for developing new technologies with new (McLaren Applied Technologies Ltd.) and current (Brandhandling Ltd.) partners. Discussions are underway with Hur Ltd (Finland), a gym technology company, to co-develop SESRC's vibrating gym equipment (Vibrex). Agreement has been reached with Polar Electro Oy Ltd. to investigate new physical activity technology in elite athletes (£50k), and with HorseWare Ltd (Ireland) to investigate the effects of new rehabilitative technology (Ice-Vib) on recovery and inflammation in humans (£100k). These initiatives will be further developed in the next 5 years.

The University's Research Office and Enterprise Unit will be engaged by the SESRC to provide staff development courses that raise the awareness and capability of its staff relevant to enterprise and aspects of impact in particular. This increased emphasis on enterprise and impact will be reinforced through access to the University's new £13 million Clarence Centre for Enterprise (opened August 2013) designed to promote the University's research and enterprise skills and developments to a wider business audience, and particularly businesses in London.

d. Relationship to case studies

Both SESRC case studies mirror our strategy and approach to turning research into impact as set out in the previous sections. Both have involved the development and subsequent uptake and commercialisation of SESRC technology by our partners, Actegy Ltd and FitFlop Ltd. They provide strong evidence that the strategy adopted by the SESRC, both before and since RAE2008, has been effective. Feedback from both case study partners, Actegy Ltd and FitFlop Ltd, is positive in relation to the SESRC's capacity and capability to support early stage research through to successful enterprise and international commercialisation.

Lessons from the two case studies suggest that the SESRC's role in generating impact extends beyond concept generation and demonstration of proof of concept into supporting company growth, staff recruitment, training and media engagement. Our future strategy for impact will reflect these lessons.

Stemming from our approach to supporting Fitflop and Actegy's business objectives, several leading clinical consultants and surgeons have expressed admiration for our work and requested collaborations on clinical research and intervention development. The SESRC will strive to extend its approach to impact beyond product and programme development and into applications of research into clinical populations. This will make the transition for our partners from concept development through to clinical and elite sport application smoother and more cost effective.

Both case study partners expressed interest in the SESRC providing new ideas for designs and devices that can be exploited. Accordingly, we will strengthen our involvement with the University's Engineering Product Design and Health expertise to pursue this.