

Institution: University of Edinburgh
Unit of Assessment: Unit 24 (Sport and Exercise Sciences, Leisure and Tourism)
<p>1. Unit context and structure, research and impact strategy</p> <p>1.1 Context</p> <p>The Institute of Sport, Physical Education and Health Sciences (ISPEHS) is a vibrant group of 40 staff integrating expertise from sport and exercise science, social science, education, public health and medicine. Located in the Moray House School of Education and Sport, ISPEHS is committed to producing outstanding research, knowledge exchange and impact (RKEI) on sport, physical education, physical activity, and outdoor environmental education. In line with the University of Edinburgh's (UoE) strategy, our mission is to produce and share research that advances the United Nations' (UN) Sustainable Development Goals (SDGs). Accordingly, our research contributes to solving the global pandemic of inactivity, improving quality of physical education and sustainability education, and demonstrating ways of reducing inequalities in and through sport. An increasing focus of our work is tapping the potential of data and digital devices to improve health outcomes, working in collaboration with the Data Education in Schools programme within the data-driven innovation (DDI) theme of the Edinburgh and South East Scotland City Region Deal (£237m from UK and Scottish Governments to UoE as part of an overall DDI package of £661m, 2018).</p> <p>1.2 Research, knowledge exchange and impact strategy</p> <p>Over the REF period we have achieved the following:</p> <ul style="list-style-type: none"> • creation of 12 new posts bringing in outstanding young researchers and one Professor (Collins) to boost expertise in key areas; • 100% of our academic staff were research-active by 2015 (compared to 65% in the last REF period) and 94% of all staff have applied for grants over this period with a 40% success rate; • a substantial increase in research income from £2.7m in previous REF period to £4.7m over the current period; • transformation of our PGR programme, which led to a substantial increase in doctoral student completions (from 18 in the previous REF period to 40 over the current period); • expansion of partnerships with industry, government, international organisations and the third sector to generate over £1m in consultancy funding (compared to £88k in the previous REF period); • forging new collaborations to extend the reach of our research and impact with diverse global and local organisations, including: global health organisations (e.g. WHO), sport governing bodies (e.g. World Golf Federation), charities (e.g. Cerebral Palsy International Sports and Recreation Association, CPISRA), and internationally-renowned academic institutions (see Section 4). <p>These achievements are a result of our overarching strategic goal during this REF cycle of creating an ambitious and supportive community empowered to produce high-quality and impactful research which contributes to the SDGs noted above. Key elements of this strategy are:</p> <ul style="list-style-type: none"> • recruitment and staff support focused on achieving ambitious goals in publications, external funding, and impact (see Sections 2 and 3); • strengthening PGR and early career researcher (ECR) support to bring on the next generation of research leaders in sport, physical education, physical activity and outdoor environmental education;

- the development of **5 interdisciplinary groups** to foster collaboration and provide support for grants, outputs and KEI (see 1.3 below);
- forging **strategic partnerships** across the University, nationally and internationally, to deliver world-leading, interdisciplinary and challenge-led research and impact (see Section 4); and
- a **KEI strategy** targeting key partners and audiences, delivered through consultancies, public engagement and MOOCs (see 1.4 below).

1.3 Structure

ISPEHS activities are organised around **five interconnected groups**, bringing together staff, PGRs and associate members within and beyond UoE. These groups meet regularly; have played a pivotal role in supporting and integrating our early career and PGR communities; and have acted as the linchpins for broader, strategic engagement with RKEI partners. Each staff and PGR member of our Institute must be affiliated to at least one group. The numbers indicated for each group below reflect primary affiliations but some staff are affiliated to more than one group.

1.3.1 Physical Activity for Health Research Centre (PAHRC)

Directed by Professor Nanette Mutrie, PAHRC brings together 8 staff in a multi-disciplinary team of psychologists; physiologists; epidemiologists; and exercise, public health and medical scientists. They share a mission to encourage people of all ages to “sit less and move more” and enjoy the physical, mental and social health benefits of an active lifestyle. PAHRC’s research focuses on developing, testing and implementing theories and interventions that support all segments of the population to increase physical activity and reduce sedentary behaviour. In this way the group contributes to the solutions needed to halt the global pandemic of inactivity. Since 2014, PAHRC members have secured more than £1m in research and consultancy income.

PAHRC’s research **challenges paradigms**. For example, research on the concept of “prevented for the population fraction” estimated that existing global physical activity levels prevent almost 4 million premature deaths per year. Before this the field had focused solely on the harm of not being active (*The Lancet Global Health*, 2020). PAHRC has also challenged the idea that messaging about the risk of inactivity will influence behaviour change, instead providing evidence that gain framed messages could be more successful (*International Journal of Behavioral Nutrition and Physical Activity*, 2020).

PAHRC’s **intervention work** ranges from individual approaches to natural experiments. Its evidenced-based approach to promoting walking with football fans helped them adopt a healthier lifestyle and increase physical activity (*The Lancet*, 2014). Now 125 professional clubs in football and other sports run this programme (see Impact Case Study “*Football Fans in Training*”). Changes to the environment could help or hinder local physical activity levels but such interventions are difficult to study. Researchers showed, using detailed data over 8 years in a natural experimental design, that a new motorway reduced physical activity for local residents in comparison to residents in an area not influenced by the motorway (*International Journal of Behavioral Nutrition and Physical Activity*, 2017).

PAHRC research has also informed **policies to improve public health** and promote sustainability. PAHRC researchers were the first to evidence that the benefits of walking and cycling outweigh the adverse health effects of air pollution (*Preventive Medicine*, 2016). This research underpins the models used in WHO’s online Health Economic Assessment Tool (HEAT), which policymakers around the world use to conduct economic impact assessments of walking and cycling (see Impact Case Study “*Enhancing global, UK and Scottish physical activity policy and guidance*”).

1.3.2 Human Performance Science (HPS)

Directed by Dr Tony Turner, HPS brings together 12 staff with expertise in psychology, physiology, biomechanics and education research. The group's mission is to improve human performance through evidence-informed research and education in a variety of contexts such as sport, law and healthcare. Since 2014, this applied research group's activities have extended from local projects in the arts, sport and health to projects with international charities and sport governing bodies.

Martindale and Collins' research has evaluated **professional judgement and decision making** in high-pressure, rapidly-evolving environments in performance sport (*The Sport Psychologist*, 2019), in crime scene examinations (*Scottish Institute for Policing Research*, 2015) and most recently in organ retrieval teams (*Transplantation*, 2020). This work has advanced sports coaching policy and practice to develop more than 3,000 practitioners' judgement and decision-making, and it also improved the Scottish Police Authority Forensic Service's understanding of professional judgement to change the way it trains its 120 Crime Scene Examiners to make decisions at approximately 25,000 crime scenes each year (see Impact Case Study "*Enhancing professional judgement and decision making in hyperdynamic environments*").

Phillips and Verheul's motor control and exercise physiology research, in collaboration with international charity Cerebral Palsy International Sports and Recreation Association (CPISRA, €20k) has contributed to the **development of frame running** (formerly race running), an innovative sport where people with severe motor and coordination impairments race specially designed pedal-less tricycles. Their research (*Gait & Posture*, 2018) demonstrated which potential measures of impairment would be valid for classification purposes. The World Paralympic Association has used these findings in developing frame running sections of their Classification Rules and Regulations, ahead of the planned introduction of frame running at the Paralympic Games in Paris in 2024.

1.3.3 Physical Education Research Forum (PERF)

Directed by Dr Shirley Gray, and with 9 staff, PERF has played an important role in influencing curriculum developments in PE locally and internationally. For example, PERF researched what Scotland's new Curriculum for Excellence meant for the future of PE (*Scottish Educational Review*, 2016). This research showed that PE teachers found the curriculum guidance difficult to interpret, and concluded that the new policy would have little impact on their current practice. Education Scotland reported that this research was a major driver in the development of additional policy guidelines (the Significant Aspects of Learning and the Benchmarks for PE). This research underpinned Gray's work in **developing the PE curriculum** in Malta and similar work by Jess's in Vietnam as part of an international World Bank Group project (\$20k).

A further theme for PERF is the role of **physical activity in cognitive development**. Booth employed a longitudinal cohort design of almost 5,000 children to show that physical activity at age 11 positively influenced academic achievement in later years (*British Journal of Sports Medicine*, 2014). She has also researched an approach to teaching primary school PE which emphasised co-ordination (Better Movers and Thinkers) and showed that improving co-ordination enhanced executive function and improved reading skills (*British Journal of Educational Research*, 2019). As part of its "Terrific Scientific" science curriculum for children, the BBC commissioned Booth to explore the impact of just 15 minutes of exercise on children's cognitive abilities. Through experiments with more than 20,000 UK primary school pupils, the researchers found that 15 minutes of exercise can have a significant positive effect. Booth also co-designed a BBC "live lesson" on the subject, which was watched by more than 8,000 primary school children when it aired in September 2017.

1.3.4 Social, Political and Cultural Sport Research Forum

Directed by Professor Grant Jarvie, the Forum brings together 6 staff with a mission to research and advocate the **role of sport for social, political and cultural change**. The Forum's researchers explore sports policy as well as sports diplomacy and cultural relations. These researchers examine the role of sport in enabling SDGs on eliminating poverty; reducing inequalities; advancing gender equality; and promoting peace, justice and strong institutions. Since 2014, its members have produced more than 120 research outputs and secured in excess of £378k research and consultancy income.

Forum researchers delivered the 2015 World Sports Values Summit for Peace and Development in Cape Town. Funded by The Handa Foundation, the £40k event invited more than 150 young leaders, athletes, experts, influencers and distinguished guests, such as the Mandela family and Lord Moynihan, to explore the role sport can play in advancing cooperation, development and peace. The global agenda-setting summit catalysed a relationship with Handa, which enabled more than 8 funded youth fellowships in low and middle-income African countries.

Forum research – including work on North and South Korea (Lee) and Scotland and Wales (Jarvie) – supported a series of research workshops on **sports diplomacy and cultural relations** attended by more than 300 policy influencers from various countries. Supported by UNESCO, Banda's (2019) report on sport for development in Zambia was endorsed at the meeting of African Sport Ministers in Madagascar. J. Kelly's research contributed to the Offensive Behaviour at Football and Threatening Communications (Repeal) (Scotland) Bill as part of evidence to the Scottish Parliament Justice Committee in November 2017. Research by McDowell on the nexus between sports history, management, and organisation studies was nominated for Best Article of the Year (2015) by the *International Journal of the History of Sport*. J. Kelly and Lee drew on the group's interdisciplinary expertise from sports history to sports management and international development to co-edit the influential *Routledge Handbook of Sport and Politics* (also featuring contributions from Jarvie and Reid).

1.3.5 Outdoor Environmental Education Unit (OEEU)

Directed by Professor Peter Higgins, the Unit brings together 5 staff with a mission to research the theory, philosophy and practice of Outdoor Environmental and Sustainability Education. Research from this group advances **Learning for Sustainability (LfS)** which is a key Scottish educational policy priority that includes Outdoor Learning as a core theme. Since 2014, the team has developed and led research and consultancy worth over £1.5m. Specifically, research by Higgins, Nicol, Beames, Christie and colleagues has provided evidence of the educational value of LfS. As a consequence, the team advises Scottish Government, UNESCO, Scottish Qualifications Authority, Quality Assurance Agency, Education Scotland, General Teaching Council for Scotland (GTCS) and British Council by sharing their research knowledge. The OEEU research aligns with all SDGs and underpins the national policy architecture that positions LfS as an entitlement of all 690,000 state school pupils across Scotland and a responsibility of all 56,000 teaching professionals and leaders registered with the GTCS. This makes Scotland a global pioneer with education policies that are world-leading in incorporating LfS into the national curriculum (see Impact Case Study "*Embedding Learning for Sustainability in Scottish education policy and teaching practice*").

Higgins and Christie, in partnership with the Scottish charity Venture Trust, secured £395k of a €3.4m grant from the Norwegian Grants Fund for Youth Employment to develop the Scottish contribution to the European "From Outdoors to the Labour Market" (FOLM) project. FOLM's main innovation comes from the approach used for social and personal growth through Outdoor Learning which is based on OEEU research. The project will support 1,000 young people from Spain, Poland and Ireland to build confidence to pursue education, employment or training opportunities.

1.4 Strengthening impact

Impact is thoroughly embedded in all strands of ISPEHS research, as illustrated in the description of research groups above. Our strategy has focused on **building skills and professional support** for researchers across all career stages, and at all stages of research. Our impact strategy is illustrated by these key examples:

- ISPEHS has actively invested in and prioritised **strategic partnerships to enhance the impact of our research**. Key partners include: Scottish Government, Paths for All, NHS Scotland Organ Retrieval Team, and European Golf Tour (see Section 4.1 for further details). These partnerships allow all ISPEHS projects to benefit from an advisory board, convened from relevant **stakeholders**, with the purpose of maximising the impact of our research.
- Our partnerships with beneficiary organisations have been strengthened by a series of **consultancy** roles. For example, **PAHRC** has a strong partnership with *Paths for All*, Scotland's national charity for walking, for which both Mutrie and P. Kelly are Board Directors. This relationship has generated: 2 PhD scholarships; joint research projects (for example in relation to the workplace Step Count Challenge). Richards and Turner from **HPS** also provided consultancy (approximately £38k) to clients of Elite Sport Performance, designing and delivering sport science as part of international motorsport driver development programmes with national and international organisations.
- We have set up the **Scottish walking for Health Research Exchange (SHaRE)** in collaboration with the Scottish National Walking Strategy Delivery Forum. **SHaRE** provides a mechanism for researchers to disseminate findings; a place for practitioners and policy makers to access walking research; and **communication and exchange of ideas** between researchers, practitioners and policymakers.
- We have also promoted public understanding through a series of **Massive Online Open Courses (MOOCs)**, developed by ISPEHS and our collaborators, which have attracted over 100,000 learners to engage with the issues researched by ISPEHS over the past 6 years. Learners (almost 65,000 to date) have rated our "Sit less, get active" MOOC at 4.5 out of 5 for excellence. Since 2014, more than 40,000 learners have taken part in "Football: More than a Game", which disseminated football research and was the world's first football-related MOOC. The "Learning for Sustainability" MOOC was the world's first in LfS with 12,750 participants enrolled from 176 countries; it was ranked 4.8 out of 5 for excellence by these learners.
- We established **The Academy of Sport** (led by Professor Grant Jarvie) which is a think tank that gathers together world-leading researchers and practitioners to promote the power of sport to improve lives and enhance communities. Since 2014, more than 2,000 members of the public have participated in the academy's 30 joint seminars with the University of Toronto on topics such as sport, dementia and health, sport diplomacy and cultural relations. Academy of Sport research is cited in Australia's 2030 Sports Diplomacy Strategy launched by Australia's Department of Foreign Affairs and Trade in 2019.

1.5 Open Research and Research Ethics and Integrity

ISPEHS is committed to promoting an open research environment, as part of our broader commitment to sharing the benefits of our research to promote goals of health, well-being and inclusion. We have an Open Research strategy, which sets out our goals, opportunities and support measures to ensure we maximise access to our outputs, and share our data and methods as openly as possible. This strategy focuses on advancing rigour, transparency and the accessibility of our methods, data, findings and outputs. We are also committed to identifying responsible research metrics which could be used to further incentivise open research. This Open Research strategy is aligned with Plan S, a global initiative for Open Access publishing.

Our **open access (OA) policy** requires that all outputs published since 2016 (including book chapters and commissioned reports) be deposited in our institutional repository. Supported by our dedicated full-time RKEI Data Coordinator, we have seen a significant increase in OA compliance with a sustained a rate of >97% since 2016. We also work closely with OA teams at University-level to drive improvements and ensure consistent procedures for recording, evaluating, storing and communicating research. Data sharing is supported by the University's comprehensive Research Data Management Programme, which includes: training, file storage for active research data (DataStore) which is used by both students and staff as projects proceed; an archive storage service (DataVault); a Data Safe Haven facility which is used for projects involving NHS patients; and a Version Control Service to allow users to store codes. We also use DMPOnline, a tool which helps our researchers develop data management plans and all funded projects have such a plan. We increasingly use OA data in our research. For example, census data held by Administrative Data Research UK are being used to track active commuting behaviour and STATS19 data on injuries and mortality are being used in an ongoing project which focusses on the impact of 20MPH traffic zones.

Over the REF period, we made substantial investment in governance of **research ethics and integrity**, rolling out rigorous ethics guidance and procedures to cover all staff and student research projects (funded and unfunded). The Moray House Research Ethics Committee oversees all ethics applications and reviews research and data collection methods in line with ethical procedures including General Data Protection Regulation (GDPR). It works closely with UoE's Institute for Academic Development to provide comprehensive training on research ethics and data integrity. All ISPEHS research adheres to the UK Research Integrity Office's code of practice for research and The Universities UK Concordat to support research integrity. Between 2016 and 2018 ISPEHS updated its approval process for exercise testing with human participants (children and adults) in line with professional standards set by the British Association of Sport & Exercise Sciences and the British Psychological Society.

ISPEHS members Niven and Saunders have taken on wider responsibilities in relation to research and integrity. Niven, as College Associate Dean for Research Ethics, is overseeing implementation of a new College online ethics tool, the roll-out of DORA (San Francisco Declaration on Research Assessment – see Section 2.3) and new training modules for researchers across the College. Saunders is serving as College Academic Misconduct Officer.

1.6 Future strategy

Over the next 6 years, ISPEHS will continue to empower our researchers to realise ambitious goals and we will strengthen our interdisciplinary and international partnerships to tackle key societal challenges in line with the SDGs. ISPEHS plans to:

- Launch and develop a new **Sport & Exercise Medicine** research group to further extend the University's world-class medical research into the world of sport and exercise medicine, in collaboration with the University's Sports Injury Clinic and associated partnerships with global organisations such as the World Golf Federation and WHO. An immediate target will be to co-ordinate and develop our work on concussion in sport.
- Deepen our engagement with the **Data Driven Innovation Skills Gateway** within the Edinburgh and South East Scotland City Region Deal Skills Programme (see Section 4), building upon our existing work and partnerships to deliver data and digital literacy through sport, PE and physical activity. An immediate target is to evaluate evidenced based teacher resources which aim to use data to enhance physical literacy.
- Extend our research on **sports diplomacy and sports management** working with partnerships in countries in the global north and the global south. An immediate target will be to research how to align sport for development initiatives with local area strategic development plans in Zambia and Rwanda.

2. People

2.1 Staffing strategy and development

Our staffing strategy focuses on fostering a stimulating and supportive environment to enable staff to realise ambitious RKEI goals. We achieve this through a combination of strategic recruitment in our key research areas, and tailored support for staff across all career stages through mentoring, guidance and flexible access to generous resources (see Section 2.1.2).

2.1.1 Recruitment and staff composition

Over the REF period we have created **12 new posts**, appointing outstanding researchers to strengthen excellence in key areas of physical education, physical activity, sport science and outdoor environmental education (Baker, Banda, Booth, Carse, Carson, Fitzsimons, P. Kelly, Phillips, McMillan, Maclsaac and Smith) and re-appointing Collins (original appointment 1998 – 2005) to a Professorship as a strategic investment to provide expertise and mentorship to the Human Performance Science Group. Over the same period, 4 staff have left due to retirement or to pursue new opportunities.

Examples of research excellence that new staff bring include:

- P. Kelly bringing epidemiology and evaluation expertise to physical activity for health.
- Banda bringing connections between countries located in the Global South and those in the Global North through sport for development programme design. These include: Italy, Israel, Lithuania, South Africa, Spain, Russia, Turkey, and Zambia.
- Phillips bringing cutting-edge use of animation and infographics to outputs.

Three of these new posts (Fitzsimons, Baker and Maclsaac) have been achieved through the conversion of **fellowships to open-ended contracts**. Fitzsimons and Baker's highly-competitive, tenure-track 2012 Chancellor's Fellowships became open-ended contracts in 2017, and since 2014 they have generated a total of £804k in collaborative research funds from external agencies, including MRC and the Chief Scientist's Office. Similarly, Maclsaac's prestigious Bicentennial Fellow post allowed her to obtain a doctoral degree (2017) whilst gaining experience in other aspects of her academic career and she moved to an open-ended contract in 2018. Over the REF period, we have implemented a number of initiatives to support research active staff who were not in open-ended roles. As a result, only 1 member of staff in this submission does not have an open-ended contract.

We have benefited from a high retention rate of mid-career colleagues, whom we have supported in achieving (since 2014): **12 promotions to Senior Lecturer** (7 men and 5 women: Beames, Booth, Christie, Gray, Horrell, Martindale, Nicol, Nash, Phillips, Psycharakis, Richards, Saunders), **1 to Reader** (P. Kelly) and **2 personal Professorships** (Sproule and Nicol). Those in promoted positions now play key leadership roles, including: directing research groups and RKEI centres; leading KEI activities; acting as PGR Director; directing ISPHES (Nash); and serving as Depute Head of School (Fawkner). This combination of appointments and promotions has created an excellent balance across career stages, with a strong emphasis on nurturing the next cohort of RKEI leaders.

2.1.2 Support for staff

New staff are supported by a number of initiatives, including:

- allocation of a "buddy" to provide initial support and promote integration, supported through a comprehensive **induction programme** including a new School induction portal;
- appointment of a **research mentor** and regular meetings with the relevant senior manager and research director;

- expectation that all new staff join one or more **research groups**, with strong encouragement to discuss research plans with group leaders as soon as in post;
- **reduction of teaching duties by 10%** for the first two years following appointment, and
- suite of professional development opportunities provided by UoE's Institute for Academic Development (IAD), including a competitive annual course on **research leadership**. 5 researchers have won places on this course (P. Kelly, Martindale, Gray, Turner and Baker) since 2014. Turner and Gray subsequently took on ISPEHS research group leadership roles and Martindale and Kelly led on impact work for their research groups.

All staff have an **Annual Review meeting** to discuss professional development and note achievements against identified milestones, including those in individual RKEI plans. Staff also benefit from generous research leave entitlement of 1 semester every 3 years, provided they agree research goals (including outputs) and submit a subsequent report. Since 2014, 13 staff were awarded research leave and this resulted in 3 PhD completions, 4 book or publication completions, and 6 grant proposals.

Each staff member has access to £1k over a 2-year period for **research training and development**; in total, £48,500 has been allocated to ISPEHS staff over the REF period. While conference attendance/travel is the most frequent use of these funds, some projects have evolved from this support. For example, Baker received proposal development funds in 2013, leading to a successful MRC-funded project in 2015. These opportunities are in addition to the annual personal development allowance of up to £500 and the annual budget of £2k allocated to ISPEHS for organising seminars, colloquia, impact curations and networking.

To encourage the development of research skills and to help groups flourish and collaborate, all ISPEHS staff take part in a half- or full-day **research retreat** away from our normal working environment each year. These events include sharing good practice and exploring potential collaborations between our research groups, as well as targeted research development workshops with support from University research offices. The theme for each event is needs-driven by research groups.

2.2 Research students

In this REF cycle we have **graduated 40 doctoral students compared to 18 in the previous REF cycle**. We achieved this by increasing the number of eligible supervisors, and enabling staff (4 in this REF cycle) without a doctoral degree to complete this qualification through strategic research leave. In addition, our growing research reputation created an increased number of high quality applicants. Our strategy also teamed up experienced primary supervisors with less-experienced second supervisors. Through these initiatives, we have increased our PGR numbers and nurtured a vibrant, multidisciplinary PGR community from a diverse range of nationalities: the PGRs active in 2019/20 included around 30 researchers from 12 different nationalities, with an almost even split of female and male researchers. Eighteen of these PGRs (60%) are funded by competitive scholarships, including ESRC, Principal's Career Development Scholarships and charities including Paths for All and the Calvert Trust. The total number of doctoral degrees awarded each year are as shown in the table below (fractions indicating joint supervision across Schools).

2013/14		2014/15		2015/16		2016/17		2017/18		2018/19		2019/20	
PhD	EdD	PhD	EdD	PhD	EdD	PhD	EdD	PhD	EdD	PhD	EdD	PhD	EdD
4.35	0	6	0	7.75	1	6.1	0.5	3.15	1	6.15	0.5	3.17	0.8
4.35		6		8.75		6.6		4.15		6.65		3.97	

PGRs receive training in research methodology, benefitting from learning about the diverse range of methodologies employed across ISPEHS. For example, the training ranges from historical enquiry to randomised controlled trials in clinical settings. PGRs also benefit from the training provided by the **Scottish Graduate School of Social Science** (SGSSS, with Jarvie as our local pathway lead), funded by ESRC and the Scottish Funding Council. SGSSS training encompasses advanced methods as well as ethics, public engagement and publishing. SGSSS also provides opportunities for internships, a summer school, interdisciplinary hub festivals, a high-profile impact competition and business booster activities.

Research students are encouraged to begin **industry engagement** supported by Edinburgh Innovations who offer access to expert advisers, start-up workshops and competitions aimed at enhancing graduates' employability. For example, one recent PhD graduate (Adams) engaged with the sports industry as part of her Principal's Career Development Scholarship to design a new education app to promote concussion awareness and is now working on a Wellcome Trust iTPA-funded project ("Scaling up a concussion education and best practice package to promote health and well-being").

ISPEHS supports PGRs throughout their PhD journey with regular checkpoints introduced to ensure that they are progressing satisfactorily and receiving adequate support, but also to develop skills required for oral examinations and introduce feedback from colleagues outwith the supervision team. New PGRs are encouraged to write an updated PhD plan after 4 months and then, within the first year, submit a paper and present to a **progression panel** containing at least 2 staff (excluding supervisors). A further opportunity exists, where recommended, for such additional feedback at the end of year 2.

PGRs are closely **integrated into the research community**, with each researcher aligned to 1 or more ISPEHS research groups, which provide various forms of support, including strong encouragement to present work in progress, rehearse conference presentations or share emerging findings. On alternate years, our PGRs organise and deliver a half-day conference for staff and PGR students. The mini-conference is designed to showcase ongoing research with contributions ranging from conference-style posters to oral presentations, dependent on their stage of study. In addition, each year PGRs select a topic for research development and staff or guest speakers deliver presentations and workshops on this theme. This creates a dynamic research environment in which students feel they are valued and receive feedback from a wide range of viewpoints. Our students contribute to a monthly student-led newsletter, circulated to all staff, doctoral and master's students. This promotes local and international events and training opportunities, includes personal reflections on key transitions and the viva, and provides updates on funding opportunities and academic vacancies.

All doctoral students are encouraged to engage with the University's **Careers Service** that offers students a range of advice services during their studies and for up to 2 years after graduation. We also support PGR students with **applications for fellowships and research positions** as they near completion. Successes from this approach include: a post-doctoral fellowship at the University of Cambridge; an appointment as a high performance scientist at the SportScotland Institute of Sport; 3 appointments straight to lecturing positions on graduation at Scottish, English and Australian universities; and 3 UoE research positions. Our students are encouraged and supported to **publish as they proceed** and most graduate with at least 1 publication completed from their PhD. Since 2014, we have had 41 publications first authored by our PhD students in some of the most prestigious peer reviewed journals in our field (e.g., *British Journal of Sports Medicine*, *International Journal of Behavioural Nutrition and Physical Activity*) and a top-10 entry in the Scottish Graduate School of Social Sciences Research Impact and Knowledge Exchange competition.

2.3 Equality and diversity

ISPEHS is committed to creating a **fully inclusive research environment**, and ensuring that every member of staff has the opportunity to develop and progress their research regardless of

age, race, gender, class, sexual orientation, religion, belief or disability. In this submission we have 9 staff (10%) from overseas, 62% of the submission is male and we have an equal number of lecturers and senior lecturers (16), one reader and 7 professors. On the census date we had 3 ECRs according to the REF definition (Carson, MacIssac, McMillan).

We have held the **Athena Swan bronze award** since 2014 and, as part of the Moray House School of Education and Sport, we are now working towards the silver award. Supported by our Equality and Diversity (E&D) committee, we actively pursue a culture of equality and respect. E&D is a standing item on staff meetings, with gender-aware recruitment to management roles and attention to maintaining gender parity amongst Annual Reviewers.

Our own research on E&D includes disability in sport, gender issues in PE, physical activity promotion in ethnic minority communities and football for homeless people. Our E&D environment is enriched by inviting a vibrant mix of researchers and practitioners to share their work and experience. For example, we recently hosted a presentation from the organiser of the Homeless World Cup; Professor Bruce Kidd (University of Toronto) delivered the Moray House 2018 annual lecture on equity in sport; and in 2016 Hala Ousta (FIFA's access and diversity manager) gave a talk on equality and diversity in football.

Inclusivity and flexible working are strongly encouraged and these topics are included as part of the staff induction process. All requests for flexible working (4 over the REF period) including part-time working, concentrated days and "working from home" opportunities (prior to the Covid-19 pandemic) were approved by line managers. Supporting staff with caring responsibilities, awareness of work-life balance and health and well-being, and advancing family-friendly policies have been key agenda items on Institute away days. We have moved to provide transparent workload models and approaches to workload allocation, aimed at creating equity and supporting all colleagues to balance the demands of research, teaching and administration.

Annual Reviews are disaggregated from workload reviews to allow a clear focus on career progression in the former. Our current action plan places a specific focus on supporting staff returners to re-engage with their research career (for example, after parental leave) including providing returner buddies and a workload allocation of 0.1 FTE given for re-familiarisation support in workload planning. We have also introduced an annual Returners Career Development Fund (£5k) for training/conference attendance (including childcare). Other actions include: a dedicated E&D intranet page; and a culture of scheduling meetings between 10.00 and 16.00 while avoiding Fridays and local school holidays for Institute and committee meetings. Staff are actively encouraged to use their full annual leave entitlement, and they have access to opportunities for regular in-house mindfulness and yoga sessions.

In terms of **accessibility**, the building in which our core business is delivered is fully accessible via ramps and lifts, with accessible study, office and teaching space. Provision for research students with disabilities has recently been upgraded with specific student-led changes made within our local Library and accessible study rooms.

The impact of all of our E&D measures is evidenced in our **Climate and Culture Survey**. From the initial ISPEHS survey in 2012/13 to the 2016/17 survey, there was a 38% improvement in perceived cultural climate, with between 75 and 100% of staff and 90-100% PGR students in the 2016/17 survey perceiving a positive climate in relation to a range of questions relating to equality and diversity. The survey will be repeated in 2021.

The University is a signatory of the **San Francisco Declaration on Research Assessment** (DORA) and we recognise the need to assess research on its own merits rather than rely on external indicators such as journal impact factors. In line with the UoE REF2021 Code of Practice, we have adopted an inclusive approach to defining "independent researcher" and have welcomed the decision to return 100% of eligible academic staff. Following unconscious bias and equality and diversity training, we adopted a rigorous and transparent approach to selecting outputs. We established an independent group to review the distribution of outputs across staff by gender and career stage, although we were unable to access data on other protected

characteristics given the voluntary nature of disclosing this information. The review concluded that the selection had occurred without bias and with a reasonable balance across gender and career stage with an appropriate spread of number of publications represented in the personal best and open lists.

3. Income, infrastructure and facilities

3.1 Income

Our external funding strategy has focused on supporting all staff, and especially ECRs, in submitting competitive funding bids. Our target was for each staff member to be part of at least 1 grant application each year. Over the period 2013/14 to 2019/20, we successfully increased the percentage of staff applying for research grants from 65% to 94% (from 76 to 128 applications). Our success rate was 40%, resulting in 51 awards totalling £2.7m. In addition, the unit has earned over £1m in consultancies since 2014 in comparison to £88k in the previous REF cycle. This strategy has resulted in a substantial **increase in research income** from £2.7m in previous REF period to £4.7m over the current period (see REF 4b).

Since 2014 we have focussed on supporting grant applications from staff who had not yet been principal investigators, with senior staff facilitating their involvement in established networks. Successes include:

- the “WATER project: Which AquaTic ExeRcises work best? Identifying muscle recruitment for aquatic exercises used in interventions for core strengthening and rehabilitation from musculoskeletal disorders”, led by Psycharakis and funded by the Chief Scientist’s Office (£305k);
- the advancement of the changing lives through sport and physical activity project, led by Reid through joint funding (£250k) from Scottish Government, SportScotland and the Robertson Trust; and
- the development of a culturally-adapted walking programme for South Asian adults, led by Baker and funded by the MRC Public Health Intervention Development Scheme (£185,500).

New staff have also been successful as Co-Investigators (Co-Is) in collaborative projects, for example: P. Kelly and Baker are Co-Is in the 20MPH project for which Jepson (at UoE) is PI (£880k from NIHR) and Fitzsimons is a Co-I in a £3m project funded by NIHR to develop and evaluate strategies to reduce sedentary behaviour after a stroke.

A key element of our strategy is to **partner in large bids** to build our networks. For example, Mutrie collaborates as Co-I in multidisciplinary teams, such as the 4-country collaboration funded by the European Union FP7 programme (€6m) to develop and evaluate a healthy lifestyle programme for European Football Fans. That network has resulted in a new collaboration with the Free University of Amsterdam to investigate the role of walking in men’s lives.

Our **diverse portfolio of funding sources** includes support from UKRI (ESRC, EPSRC, MRC, British Academy); research charities (Carnegie Trust for the Universities of Scotland); the EU (European Commission); Government (NHS Health Scotland, National Institute for Health Research, Scottish Government, Chief Scientist’s Office); and other charities (British Cycling, FIA Institute for Motor Sport Safety and Sustainability, Paths for All, Cerebral Palsy International Sport and Recreation Association, CPISRA).

Since 2014, ISPEHS has increased the number of applications for competitive internal University funding sources from 10 to 28, winning over £37k **seedcorn funding**, in comparison to just over £10k in the previous REF cycle. These seedcorn awards have resulted in: 2 larger grants on the same theme being awarded by external agencies (£159,961); new collaborations with UoE’s College of Medicine and Veterinary Medicine; and a partnership with the University of Limerick to support research staff collaboration and exchange. We also had success with internal funds to

support KEI activities. Since 2014, we have won 7 internal KEI grants totalling £18,724 (awards to Niven, Baker, Higgins, Turner, Booth, Niven/Phillips and Gray). Examples include establishing a network for ethnicity and physical activity research, engaging with the BBC for a citizen science project and using animation to enhance KEI. We also had success with ESRC Impact Acceleration Accounts (IAA) with 5 awards totalling £54,787 (awards to Martindale (x2), Mutrie, Niven and Booth). Examples include establishing the SHaRE repository for walking research in Scotland and workshops with both organ retrieval teams and crime investigators on decision-making processes. Gray and Adams also won IAA placement awards worth £15,314 for working in local schools to collect relevant data.

3.2 Infrastructure

ISPEHS benefits from **specialised research support** through the RKEI office which has expanded from 2 to 5.5 FTE over the REF period. The staff provide comprehensive guidance and development support for funding applications, including weekly updates on research funding schemes, targeted communication of opportunities specific to the profile and funding plans of colleagues, as well as 1-to-1 tailored support. This support is complemented by the University-level Edinburgh Research Office, which provides specialised support services, including funder priorities and horizon-scanning, as well as support for larger and more complex applications. In addition, we provide a rigorous system of internal peer review for applications, with each proposal reviewed by two senior colleagues with relevant expertise.

We organise a range of **activities to support grants and publications**, including away days, writing retreats, mini-conferences, workshops and seminars. Examples of workshop topics include ethics, data management, creating and tracking impact, writing successful grant proposals and engagement with external partners. This infrastructure has also enabled us to increase the accessibility of our expertise and research outputs through a wide range of events, jargon-free briefings, social media and press releases.

3.3 Facilities

ISPEHS benefits from its own **dedicated research facilities** within the St Leonard's Land building on the University's Holyrood Campus, a short walking distance from the Scottish Parliament, the National Library of Scotland and National Records of Scotland. Over the REF period, the University has made substantial investment (£24m) in the Centre for Sport and Exercise with its world-class sport and recreation facilities (see Figure 1).

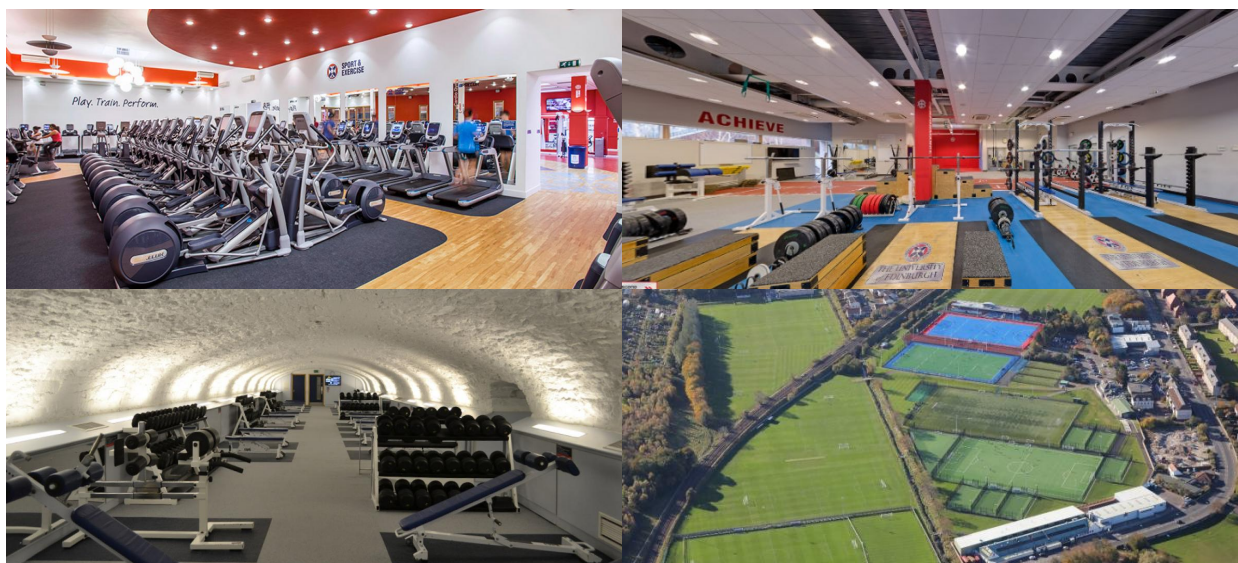


Figure 1: Some of the upgraded world-class sporting facilities available to our staff and PGR students for applied research in sports and exercise, including: cardio suite (top left), high-performance strength and conditioning gym (top right), free-weights reclaimed vault (bottom left) and Peffermill playing fields incorporating the National Hockey Centre (bottom right)

Continued investment has been made in facilities and estates at Moray House since 2014 with the formation of dedicated PhD suites and improvements to open access computer labs. There is also a new catered social space, “Levels”, where staff and students can connect and collaborate. In addition, a new PhD hub opened in 2019 in the heart of the campus, offering a new state-of-the-art social/networking spaces.

There are two main dedicated sport and exercise laboratories in ISPEHS, with flexibility to adapt existing spaces to include interdisciplinary projects as required. Since 2014 a major upgrade (£130k) to the biomechanics/motor control laboratory has been implemented with the installation of a new land-based motion capture system (see the top right panel, Figure 2) that can accommodate and integrate electromyography (EMG) and eye tracking data. In addition, further significant upgrades to the aquatic biomechanics motion capture system have been installed and brought online in the last 12 months in our own 25 metre swimming pool – the only facility of its kind in the UK (see the bottom panel, Figure 2). Both of these facilities were central to our novel research demonstrating the safety and suitability of aquatic exercises for individuals with chronic low-back pain (WATER project, CSO £305k). Advanced planning is underway to refurbish the physiology teaching and research laboratory; this will include installing new hardware as well as cloud-based data capture and analysis software.



Figure 2: Investment in cutting-edge technology and software, such as the 3-D motion capture system (top right panel) and wireless EMG being demonstrated in our unique “wet lab” facility (bottom and left panels)

Significant audio-visual upgrades have been made to the dance studio, both labs and the main games hall. These substantial upgrades enable online, **touchscreen video analysis and playback** to be projected onto a designated screen for visual analysis. Aside from developments to the existing fabric of the Institute and the submission of large-scale bids, a 3-year (£200k) investment from the School has been earmarked solely for the purpose of upgrading existing equipment and purchasing new technology. Examples of new equipment purchased include an integrated Global Positioning System (GPS) and heart rate monitoring system bought in partnership with the Scottish Rugby Union. These substantial investments illustrate the commitment that the University is making to provide excellent research facilities and equipment

for staff and research students to utilise, as well as sustainable development through sharing equipment and lab spaces with external partners such as the SportScotland Institute of Sport.

Much of the Sport library collection is held in a **dedicated learning resource centre**. It has an e-preference policy, giving direct access to over 700,000 e-books and 100,000 e-journals, as well as an extensive range of specialist databases, print sources and important special collections. The School's Dalhousie library and main University library are nearby, as is the National Library of Scotland which is one of 6 legal deposit libraries in the UK. In collaboration with the University library staff, we are undertaking a Wellcome Trust funded project on physical training, education and movement with the records held by the archives of Dunfermline College of Physical Education (which merged with Moray House in 1985). The archives have also supported research at PhD level in Early Years Education and Dance Science.

The University's **computing provision** is amongst the most advanced in Europe, providing first-class facilities for collaboration, high performance computing and design services, which our students and staff use for analytical processes and to produce infographics to illustrate findings. Cloud printing is now easily accessible for all staff and students across the whole campus and Moray House has excellent audio-visual and videoconferencing facilities to support collaborative and international research activities.

We collaborate on teaching, student research projects and support for sport performance with the **University's Centre for Sport and Exercise and the Sport & Exercise Medicine Clinic**. All UoE staff and students benefit from these world-class facilities and resources such as the Eric Liddell High Performance Sports Scholarships, the Katherine Grainger Scholarship and an Olympic rowing facility. The proximity of these facilities and the high number of performance athletes at the University afford us excellent opportunities for our applied sports scientists to work alongside performance coaches to enhance their knowledge. For example, 28 students competed in the 2018 Commonwealth Games and one of our students, Grace Reid, won gold in the 1 metre springboard diving. These athletes are supported by performance coaches, many of whom are graduates of our undergraduate and postgraduate courses (for example Strength and Conditioning and Performance Psychology) thus making collaborative working easily achievable.

4. Collaboration and contribution to the research base, economy and society

4.1 Collaboration

4.1.1 International collaborations

Collaboration is central to our research endeavours, both to enhance academic quality and to maximise our impact. As described in Section 3.1, our largest grants have been won in collaboration with other institutions, often based internationally. Formal collaboration with other Institutions is also important and the institution-level **Memorandum of Understanding** signed with the University of Toronto has enabled international staff exchanges (Donnelly, Beames, Jacobs, Kidd, Jarvie), joint supervision of PhD research students and the production of 40 research podcasts in the joint Edinburgh and Toronto public symposia series. We also have MoUs with the Universities of Limerick and the Technical University of Munich, and research teams from each Institution have made visits to outline collaborative plans. Jarvie and Mutrie are both invited members of the Open Ended Working Group Meeting of the Commonwealth Secretariat on Model Indicators on Sport and the Sustainable Development Goals. These appointments show our collaboration with national and global agencies.

4.1.2 Collaborations which build research capacity

We have several collaborations which offer training to researchers or students to enhance future global capacity in sport and health-related research. One example is the highly successful course on the methodology of **pragmatic evaluation for physical activity research**, led by P. Kelly (with co-leads Varney in New Zealand and Milton at University of East Anglia). This course

has run 8 times in 8 different countries with 130 ECRs from 33 countries taking part to date. This team has been commissioned by governments in Qatar, New Zealand and Ireland to help them form processes for evaluation of physical activity programmes.

One example of an **international network** is the European Primary Physical Education Network (EPPEN) co-founded by Jess and Carse in 2016. This network includes over 50 teacher educators involved in primary PE from across Europe, engaging in RKEI and advocacy work. Currently this network is engaged in 2 main projects:

- (1) a knowledge exchange project Disentangling Inclusion within Primary Physical Education (DIPPE) is funded by an ERASMUS+ KA2 grant of €256k and is developing an online resource for teachers to support inclusive practice;
- (2) a stakeholder analysis identifying perceptions of the purposes of primary PE.

4.1.3 Local and national collaborations

A team within **PAHRC** is working directly with the Data Education in Schools programme on work funded by the Data Driven Innovation Skills Gateway, within the Edinburgh and South East Scotland City Region Deal Skills Programme (see REF5a for further details). Within this programme of work, we are combining expertise in physical activity and data education to explore the future of a society driven by digital health literacy, and engage with stakeholders to make available curricular materials to simultaneously help address health and data literacy inequalities. The work is advancing the mission of the Edinburgh Futures Institute (EFI, funded by the City Deal) to engage in meaningful collaboration across disciplinary boundaries to tackle complex ethical challenges relating to data in society.

A further local partnership with the National Library of Scotland provided £20k to appoint a **sports writer in residence** to further disseminate research-informed stories in English and Gaelic. The outputs have included research to inform the creation of the first dedicated Gaelic Sports Website as well as publications and public talks about sport in English and Gaelic.

One example of a national network is the Scottish Physical Activity Research Connections (**SPARC**) directed by PAHRC. SPARC is a vibrant network of 200 policymakers, practitioners and researchers and has an annual conference funded by the Active Scotland division of government. SPARC is now in its fifth year, with conference attendance of over 150 delegates including a very successful online conference in 2020. The Republic of Ireland have emulated this process and Mutrie and members of Active Scotland visited Ireland in 2018 to offer advice.

4.1.4 Government and third sector collaborations

One of our RKEI goals is to facilitate access to our research for the third sector, the NHS, professional networks and government. Examples include:

- A **Systematic Review** Methodology Course run by Saunders in collaboration with the Wellcome Trust Clinical Research Facility. This course trains staff PGRs in universities, the NHS and industry in gold-standard systematic reviewing processes and interpretation.
- Higgins, Christie and colleagues received over £700k funding from the British Council to create professional development courses for teachers in **learning for sustainability**, thus aligning current educational research, national educational policy and General Teaching Council for Scotland professional registration agendas.

In response to national priorities, we have researched topics that relate to updating policy and guidelines. For example, The PERF research on practitioner enquiry contributing to the **Professional Learning as Critical Enquiry** (PLaCE) for Whole-School Improvement project feeds into teachers' professional updates to continue their General Teaching Council Registration, thus showing responsiveness to national priorities for teaching. PLaCE is a Scottish Government-funded KEI project which supports practitioners to examine and

understand practice through critical enquiry and develop pedagogical expertise to progress learning. The project involves working in partnership with 3 secondary schools and 5 primary schools across 5 local authorities. For the 2019-20 academic year schools committed staff development time and used the PLaCE approach to address a key aspect of their improvement plan.

Our wide-ranging contributions to society can also be seen by 4 members of PAHRC being appointed by the Chief Medical Officers to **update guidelines on physical activity for health** in 2018 and 3 of them (Mutrie, Strain, P. Kelly) have been appointed to work on expert panels to provide guidance on communication and surveillance for the home countries. Mutrie has been a member of the Scottish Government’s national strategic oversight group for sport and physical activity from 2014-2018 and was then appointed as the Chair of Active Scotland’s development group for physical activity and sport from 2018- 2021.

4.1.5 Collaborations with research users

To ensure our research is useful to practitioners and policymakers, we engage with a wide range of stakeholders, communities and publics. Our research proposals benefit from involvement of the public, patients or stakeholders, thus ensuring realistic proposals and clear pathways to dissemination of results. We collaborate with a diverse set of organisations that use our research to inform practice and/or policy. They can be divided into **sport-related research users, health-related research users** and **education-related research users**, with their integration illustrated by a few key examples shown in Figure 3.

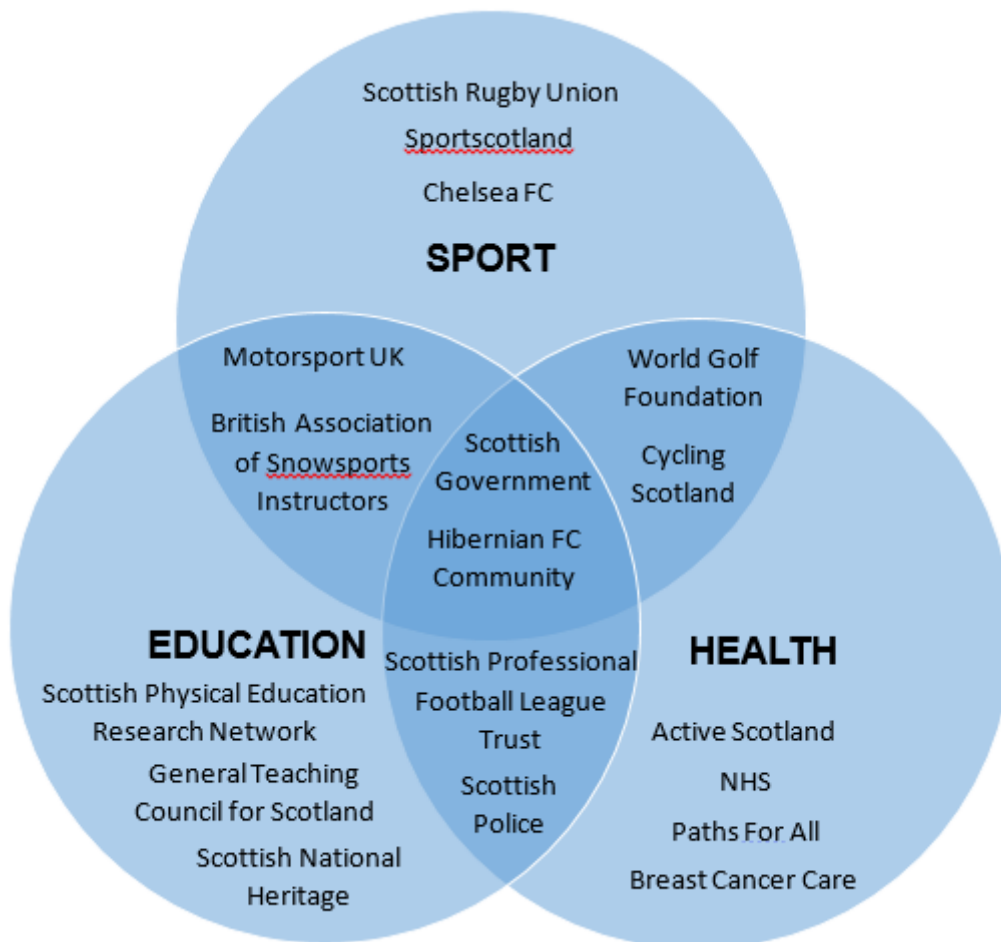


Figure 3: Venn diagram illustrating some of the wide range of stakeholders that use our research to inform practice or policy, with the overlaps emphasising the close integration in RKEI between sport, education and health users

An example is our partnership project with golf caddies on the European Golf Tour, which established areas of need for their health and performance, such as mental health, that directly informed the provision of better support at the European Tour events. A policy-related example is a consultancy we completed with the Dumfries and Galloway Health Board to advise on an evaluation of their physical activity strategy. The final strategic framework is now in place and has provided a template that other local authorities are using for evaluation.

4.2 Contribution to our disciplines

We are playing a significant role in supporting the sustainability of our disciplines by regularly undertaking **external examining** for over 20 institutions, **peer reviewing** for over 50 of the leading journals in our areas and **reviewing grant applications** for the following agencies: Dunhill Medical Trust, ESRC, Hong Kong Health Research Agency, Irish Research Council, MRC, and National Institute for Health Research. During the REF period, Mutrie has also been a member of the ESRC peer review college.

Our staff have Editorial Board roles on the following: *Curriculum Studies in Health and PE* (Gray), *International Encyclopaedia of Teacher Education* (Higgins), *Journal of Sports Sciences* (Fawkner) and *Mental Health and Physical Activity* (Mutrie).

Guest Editor roles for special editions have included: *Sport, Education and Society*, "Creating thriving and sustainable futures in physical education, health and sport" (2019, Thorburn and Gray); *Asia Pacific Journal of Sport and Social Science* special issues in 2015 4(3) "Examining Korean nationalisms, Identities, and politics through sport" and in 2017 20(3) "Sport in society" (Lee).

In terms of other contributions to our disciplines, we are particularly proud of the roles of our early/mid-career researchers:

- P. Kelly: Board Member and Society Treasurer of the International Society for Physical Activity for Health.
- Carse: President of the Scottish Educational Research Association (SERA); Editorial Board of *European Physical Education Review*; Associate Editor of *Teachers and Teaching: Theory and Practice*.
- McDowell: ex-officio Past Chair of the British Society of Sports History (Secretary 2014-17; Chair 2017-19); "Major sporting events: beyond the big two" (guest editor; *Sport in Society* 20,3 (2017)); "Records, language, and discourses: new histories of Scottish sport" (guest editor; *Sport in History* 36, 3, (2017)).

4.3 Conference hosting and organising

We have hosted 3 major International Conferences since 2014. In 2015, we hosted the **International Society of Behavioral Nutrition and Physical Activity** annual conference in the Edinburgh Conference Centre with over 1,200 delegates attending. We also co-hosted the 2015 **World Sports Values Summit in Cape Town**. In 2018 we hosted **Association Internationale des Écoles Supérieures d'Éducation Physique** with over 500 delegates.

Our staff have been involved in the scientific committees of the following international conferences showing international recognition for our research: International Council for Coaching Excellence (2015, 2017, 2019); International Society for Physical Activity for Health London (2018); European Congress of Sport Sciences (2021); International Conference on Biomechanics & Medicine in Swimming (2018); Association Internationale des Écoles Supérieures d'Éducation Physique (2018 and 2019).

4.4 Fellowships, visiting professorships and prizes

We have been **recognised externally as leaders in our fields** by several prestigious fellowships including HEPA-Europe, BASES, the University of British Columbia and the Royal Geographical Society. We have staff holding honorary or visiting professorships at the Universities of Toronto and Ulster, the Technical University of Munich and the MRC Social and Public Health Sciences Unit at Glasgow University. Further esteem indicators include:

- Mutrie was awarded an MBE in 2015 for services to physical activity for health and in 2019 the British Association of Sport and Exercise Medicine David Hemery Award for outstanding contribution to lifestyle medicine.
- P. Kelly was invited to present the ECR keynote at the 2015 International Society for Behavioural Nutrition and Physical Activity (IJNBPA) conference and the subsequent publication from that keynote won an IJNBPA award for the most cited methodological paper in 2016. He also won the IJNBPA best systematic review paper in 2014.
- The Scottish Funding Council, Scottish Government, and a UNESCO Chair nominated Higgins and his research team in 2018 for one of the world's most prestigious education prizes – the Yidan Prize.
- McIsaac won the Estelle Brisard award for the best ECR paper at the 2019 Scottish Educational Research Association Conference.
- Turner was awarded best overall poster at the 2019 annual conference of the British Association of Sport & Exercise Sciences for a collaborative project with Scottish Rugby Union.

To foster our **internationalisation** agenda, we have a programme of hosting international visiting scholars and, since 2014, have hosted 25 scholars from diverse locations including Australia, Austria, Germany, China, USA, Spain and Turkey. These scholars have worked on collaborative projects, provided seminars and written joint publications during their visits.

We have **hosted 7 Honorary Professors** since 2014, each serving a 3-year term. Each Honorary Professor has played a unique role in supporting and building our research capacity, for instance:

- Murphy (University of Ulster) supported ECR staff;
- Oliver (NHS Surgeon) supported our role in teaching physical activity for health in the Medical School and helped us develop a social media strategy;
- Woods (University of Limerick) is providing collaboration and guidance on EU grant writing;
- Davies (Bristol and Napier Universities) is providing expertise in transport for health;
- McMorris (Chichester) advised on sport and exercise science projects;
- Wright (USA) is leading collaborative projects with PE research staff;
- Bull (World Health Organisation) advises on and co-authors research related to health policy.