

Institution: University of Abertay Dundee	
Unit of Assessment: 26	
a. Context	<p>Sport research at Abertay is conducted by three research groupings all having an interdisciplinary focus. Researchers have engaged with professional and local sports clubs, national governing bodies, small to medium enterprises, policy makers and the general public. These engagement activities have ensured the research has gone beyond traditional academic boundaries and is directly affecting end users, including professional sports clubs, non-professional sports clubs, National Governing Bodies, the NHS, and government ministers within Scotland and more widely in Europe.</p> <p>The Sports Performance Group (Aspe, Babraj, Calmeiro, Cobley, Lorimer, Meggs and Phillips) is currently a mixture of physiologists and psychologists, but will be further enriched by the addition of two research active biomechanists (January 2014). Outreach work that has been undertaken by members of this group includes presentations to coaches regarding the findings from high intensity training studies. Members of the sports performance group have also been involved in knowledge exchange activities, with collaboration between SME industry partners and researchers at all stages of the research process resulting in new product development. This type of work has also been successful in terms of increasing sports research income and has had a direct impact on the industry partners.</p> <p>The Outdoor Activities and Coaching Group (Calmeiro, Holland-Smith, Lorimer, Koehn, Cameron and Olivier) have been involved with relevant national governing bodies and have contributed to both coach development at a national level and CPD based activity at a more local level. Research findings have also been used to generate modules of learning for Continuous Professional Development (CPD) for sport coaches, as well as school teachers. Members of the group have also contributed to the continuing evolution of volunteer coach training programmes. The Health and Wellbeing Group (Babraj, Lorimer, Calmeiro and Cobley) has had direct dialogue with the Scottish Government to present the research findings from the high intensity training and health projects. This type of engagement is seeking to change government attitudes to exercise and also interacts with the sports legacy agenda of Glasgow 2014. One member of the group is also able to influence European health policy development as a result of his contributions to a World Health Organisation project examining Health Behaviours in School-age Children (HBSC study).</p> <p>The Sports Performance and Health and Wellbeing Groups are involved in a range of local public engagement activities, and have been contributors to Dundee Science Festival since 2007 (Calmeiro, Babraj and Lorimer). Members have also taken part in Café Science Dundee (3 times since 2012, 140 attendees), and Dundee Literary Festival events, as well as presenting to the Royal Bank of Scotland (approximately 100 attendees) (Babraj, Lorimer). The University has recently embarked on a new collaborative project (Dundee Academy of Sport) to provide sports education from HNC to PhD, increase outreach activities and develop world leading research. All of the unit's research groups will be able to contribute to the new Dundee Academy of Sport's coach development programme, with further potential to collaborate with the Academy team on research projects that derive from its mission to engage less advantaged children in education through sport. As the Academy develops, it is planned that National Governing Bodies will be associated with the project and through this play a role in both the commissioning and consumption of research, providing a direct path to impact.</p>
b. Approach to impact	<p>Abertay's approach to research is driven by interconnections across its research base. Discipline expertise from a range of subject areas is integrated and used to support discovery, innovation and translation. As such sport utilises a number of approaches to ensure end users are embedded at all stages of the research process:</p> <ol style="list-style-type: none"> 1. Knowledge exchange: the University is signed up to Interface, a central hub connecting businesses within Scotland to universities, and all opportunities are circulated to staff. Within sport, all research active staff members develop knowledge exchange activities and respond to these Interface opportunities. As such the unit has developed 4 research projects with 4 different Scottish SME's since 2012. These knowledge exchange activities are viewed as an important aspect of the University's research strategy. 2. Communications: the University operates a centralised communications function to manage our reputation for excellence in applied research. This includes a programme of media

releases to generate coverage in local, national and international media. Our commitment to this strategy is demonstrated by our publication of 6 press releases in 2012/13 relating to research in this UoA, as opposed to 1 in the last year of the RAE 2008 period.

3. **Open access journals:** the University has a fund to support the publication of research in open access journals. All staff members in sport are encouraged to utilise open access publishing. This ensures that major findings are fully accessible to a wider audience.
4. **Public engagement:** members of each of the research groups participate in public engagement events, such as popular science events like Café Science and the Dundee Science festival as well as attending and presenting at relevant professional meetings.
5. **Workload planning:** allocation of academic duties allows all research active staff to disseminate their research to at least one type of end user as described in section a.

These approaches have ensured that research active staff members in each of the three groupings are engaged in impact activities with a variety of end users.

The **Sports Performance Group's** impact included presentations to coaches regarding the findings from high intensity training studies. These led to the provision of scientific consultancy to professional sports clubs, e.g. Sønderjyske Ishockey A/S (**Babraj**) an elite league ice hockey club in Denmark, that resulted in the head coach adopting high intensity training into rehabilitation and training sessions, positively impacting on player fitness and performance levels. As well as professional sport, the group has engaged with local sports clubs (**Babraj, Lorimer, Aspe**), e.g. Monifieth Triathlon Club, Forfar Road Runners. This involved presenting research findings (approximately 25 attendees) and running two high intensity training workshops for members of the clubs (attended by approximately 30 participants). A number of the members of Forfar Road Runners now incorporate this type of training into their regular routine. Collaboration of members of the sports performance group with SMEs has led to new product development. **Babraj and Lorimer** have been appointed as Scientific Advisors to Edinburgh Biotech Ltd and their research on skeletal muscle damage has led directly to a new product, diversifying the product line, which the company believes will revolutionise the market. The company now has a new fish oil based recovery drink which will be launched at Isokinetic 2014 and would not have occurred without the knowledge exchange relationship that has been developed. **Babraj** has also fostered a relationship with the Natural Fruit and Beverage Company and after an initial pilot study, the company are investing in Master of Science by Research studentships to continue the development of a new product for the company. It is envisaged that the company will begin the process of commercialisation by October 2014.

The **Outdoor Activities and Coaching Group** have been able to directly influence coach education. For example, **Lorimer** has been working with the Mountaineering Council of Scotland (the only recognised representative organisation for hill walkers, climbers and ski-tourers who live in Scotland or who enjoy Scotland's mountains) to ensure that key findings from research underpin their coach education programmes from low-level to elite-level coaches. This has led to his appointment as head of scientific support to the organisation and resulted in new coaching awards which embed the principles from his coach-athlete relationship research. **Holland-Smith** has developed a knowledge exchange relationship with Dundee City Council's outdoor activity unit (Ancrum Outdoor). This has led to the development of CPD courses which ensure that research findings from the outdoor activity group can be embedded in practitioner training. **Koehn and Cameron** have been examining coaching skill development in student instructors volunteering for Active Schools Dundee with their findings being used to shape the Active Schools volunteer training programme.

The **Health and Wellbeing Group** informs health policy development. **Calmeiro** has been the Portuguese representative for Physical Activity on the cross-European Health Behaviour in School-age Children (HBSC) study since 1999. This project group consists of Government and Higher Education representatives and the findings from this longitudinal study have been presented to the European Commission to inform policy development. More recently he has written on the promotion of physical activity and risk behaviours for health promotion practitioners. **Babraj** has had 1 meeting and 2 laboratory visits with the Scottish Minister for Commonwealth Games and Sport in relation to the high intensity training and health. Additionally, **Babraj** has had 2 meetings with Dr Andrew Murray who is leading the Scottish Government review of exercise and health. **Babraj** has also held meetings with NHS Tayside to develop a working relationship that will ensure congruence between future health related research and the requirements of the NHS.

c. Strategy and plans In sport we aim to continue to build our engagement and impact activities to ensure that all staff members are developing research networks that translate into knowledge exchange. Sport has specifically developed the following impact goals to support continued research growth over the next REF period:

1. Increase knowledge exchange income
2. Increase engagement with end users throughout the research process

In order to achieve these goals we aim to build on the impact strategy which has developed over the current REF period. The following will be utilised to enable sport to achieve these goals:

1. The Dundee Academy of Sport (£2.7 million, Scottish Funding Council) is a new development between numerous partners across Dundee which will directly link into the impact agenda of sport. Through the academy there will be the development of a dialogue between researchers and end users allowing for cross-fertilisation of ideas. It is envisioned that the work carried out on high intensity training by the sports performance group will work with the academy to develop novel professional development opportunities to increase coach knowledge of high intensity training and provide them with strategies to implement this type of training in practice. Further the Academy will allow an exchange of ideas between researchers and end users which will facilitate the development of applied research strands within the research groupings.
2. The employers' forum within sport is an existing resource, associated with our teaching and learning strategy, which has been utilised to provide pedagogical evidence to QAA of employability in sport (Cameron). We will seek to develop the utilisation of this forum, in conjunction with the Dundee Academy of Sport, to increase dialogue both about current sport research and to develop future research projects to address end user needs. This approach has already started and we have a postgraduate student beginning their research programme in collaboration with an undergraduate placement provider (Active Schools).
3. Research hubs in sport already exist to promote networking and collaboration. As sport begins to get a critical mass of researchers, there is an opportunity to further develop the research hubs to promote common areas of interest. Steps have already been taken to create a research hub related to ageing. This hub will provide knowledge transfer between major end users including charities, NHS, the Scottish Government and researchers. Further research hubs will be developed over the next REF period to serve national governing bodies and coach development researchers.
4. The Unit will continue to work with the University's communication department to ensure that relevant media outlets, including social media, are informed of all research being undertaken by the Unit and the outcomes of such research.

Workload planning will continue to be utilised to ensure that dissemination of research outputs to end users is part of research staff academic duties. This will ensure that staff will be given a time allocation to ensure that this type of activity continues to grow.

d. Relationship to case studies

Case study A (High Intensity training) is an exemplar of the work done by the *Sports Performance* and *Health and Wellbeing* groupings (section a). It demonstrates an inclusive approach to research impact covering *open access publication* and *public engagement* (section b); this has included a number of public presentations, lay publications, and consultation with both private/public interest groups. As an exemplar, this body of work has helped form the future research impact (section c). Specifically it has underpinned the second objective, of *increasing engagement with end users*, by demonstrating the effectiveness of developing partnerships within the public/private sectors. In particular it has highlighted the benefits of working closely with the University's communication department to ensure appropriate public/private engagement throughout the research process.

Case study B (Coach education) is another exemplar, this time of the *Outdoor Activities and Coaching* group (section a). It demonstrates the interactions between the University's approaches to impact (section b), in this instance *workload planning* has allowed staff time to work with a National Governing Body and other public/private organisations, leading to greater *public engagement* and levels of *knowledge exchange* at all stages of research. This has informed the future research strategy (section c); reinforcing the need to *increase engagement with end users*, through the careful investment of staff time via *workload planning*, which strengthens the applied focus of the *research hubs* through engagement with *employer, private and public groups*.