

Impact template (REF3a)

Institution: Swansea University
Unit of Assessment: 4 - Psychology, Psychiatry and Neuroscience
a. Context

Impact is an integral part of our research culture that yields **societal and industrial benefits both globally and nationally**, with non-academic beneficiaries drawn from three broad user groups:

- Health professionals and policy makers, through the provision of the rigorous evidence needed to provide scientifically based policy and practice.
- Commercial / industrial organisations, by informing occupational selection, shift patterns and aiding product development.
- The general public, through significant public engagement.

Research has had **societal impact**, evidenced by the frequent use of Swansea research in **the development of policies and guidelines**. Research on breast feeding has been used in many parts of the world to justify policy, for example the USA Surgeon General's Report and the UNICEF Baby Friendly Website. Other applications of the unit's research include: offering the basis of the policy on Brain Injury that was developed for the Australian Government in 2010; the development of services for those with autism in the London Borough of Barnet; advising the Royal Pharmaceutical Society on workload pressures; giving evidence to the National Institute of Health and Clinical Excellence on dietary interventions and attention deficit disorder; helping the Cancer Genetic Service for Wales to reduce the anxiety produced by genetic risk assessment. The US Department of Agriculture Food and Nutrition Service quotes Swansea research when advising children to eat breakfast; the UK School Food Trust quotes only Swansea research to justify the view that foods with a lower glycaemic index should be consumed. **Legislation** concerning the sale of alcohol to minors was based on Swansea research (see case study).

Economic impacts are evidenced in the use of Swansea research in occupational selection, for example by the Civil Service Selection Board. Research findings led a Canadian eye-tracking company to fund research aimed at product development; several multi-national companies have used findings to develop functional foods (see case study); in 2011 the International Labour Organization commissioned a report from Swansea that made recommendations about shift patterns and well-being that are now **used world-wide** when drafting legislation.

The unit raises **public awareness** through the provision of well-founded advice via websites and blogs that have attracted hundreds of thousands of hits. Specifically, following media coverage of research, there is a policy of rapidly providing follow up information. After a major live Channel 4 programme, 'The Ecstasy Trial', that contained details of Swansea research, hits to the website increased 35-fold. Several areas of research have attracted the attention of the **international media**, amongst many examples: Blagrove's work on sleep in the Australian; Weidemann's work on human neurons linked to navigation in the New York Times; Reed's report on internet addiction was in the US reported in the Daily News and Time; Benton's work on diet was featured in the New York Times and the Johannesburg Sunday Times. A **significant engagement programme** has resulted in lectures for schools and events such as Brain Awareness Week, whilst work on hormonal influences on brain development was showcased at The Times Cheltenham Science Festival.

b. Approach to impact

User-led research has characterised the University since it was established in 1920 to meet industrial needs; even today this ethos drives the unit's research activity. As described in the Environment statement, the unit employs a **three-stage strategy in delivering research**: 1) basic research establishes the theoretical underpinning of a topic; 2) methods of intervention in real-world situations are developed and evaluated; 3) the methods are disseminated to practitioners and other interested parties. The approach is to embed impact, from the earliest stage, into research project it is expected that impact is considered and where possible built into proposals. Interactions with end users are expected as early as possible in the progress of research.

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The unit **supports the attempts of staff to achieve impact** through various initiatives. New academic appointments consider candidates' potential to interact with research users. The University's award-winning *Performance Enabling Scheme* and *Career Pathways* model for staff promotion specifically supports and rewards innovation and engagement / impact activity. A **staff loading model** recognises participation in knowledge transfer activities and industrial projects that leads to a reduction in teaching load. The College will grant **sabbatical periods** to enable staff to focus on enhancing impact. The University also holds an EPSRC Impact Acceleration Account (2013-2016: £638k), which funds an institution-wide impact award scheme to recognise and celebrate research impact.

c. Strategy and plans

The unit will continue the policy of exploring many avenues to maximize the impact of both current and future research. The first approach is to **(a) build on proven success** by intensifying collaboration with the many existing partners; **(b) strengthen nascent collaborations;** **(c) establish new collaborations** by identifying potential audiences and beneficiaries, and make them aware of research initiatives, departmental expertise and facilities. The process will be facilitated by a policy of interacting with non-academic groups, for example attending non-academic conferences to increase the visibility of research findings and to advertise the availability of both facilities and expertise.

1) The **early engagement of non-academic users** in the research process is a key principle that enables the identification of important research issues, provides privileged access to information and facilities, and allows the discussion of research findings prior to publication. It ensures at an early stage that users are engaged in the translation of findings into impactful outcomes. Both cases studies relied on such early interactions. Another example is neuro-behavioural rehabilitation. Novel treatments for those with brain injuries were developed over many years, based on theoretical and clinical insights that resulted from basic research using those with clinical problems. Over the REF period, the work was further supported by converting a suite of rooms to a Head Injury Clinic, which provided both facilities and research participants. Wood is an honorary Consultant Neuropsychologist at Morriston hospital and patients attend the Head Injury Clinic when symptoms, reported initially when attending Accident and Emergency, do not improve.

2) The commercialisation of research through **licensing, spin-out companies, and consultancy** is supported. The Department of Research and Innovation manages programmes that bring together businesses and academics, supports the protection of intellectual property, and facilitates consultancy services through a subsidiary company, Swansea Innovations Ltd. The College in which the company is located employs a Commercialisation Manager to facilitate relationships with business. An example of the unit's success is *Peak Mind*, a spin-out company that offers neurofeedback training, with offices in Swansea, London (Harley Street), and Denmark. The company **uses findings obtained from ESRC-funded studies** of neuro-feedback. Another example was **the filing of a patent** that deals with the impact of phosphotidylserine on exercise.

3) **Actively bringing research to the attention of end users plays a key role.** Examples include running training courses on head injury and neuro-behavioural rehabilitation for the Association of Personal Injury Lawyers, the Canadian Brain Injury Association and the British Society for Rehabilitation Medicine; informing the Association of Breastfeeding Mothers about Swansea's research; giving presentations to the food industry and policymakers such as the Comité Européen des Fabricants de Sucre (which advises the EU on sugar policy), and Institute of Grocery Distributions (which informs supermarkets and food manufacturers about best practice). Written material has been produced for the Canadian Sugar Institute on carbohydrates and the cognition of children, and on the plausibility of sugar addiction for a journal for German confectionary manufacturers. The unit initiated a meeting in 2012 of all major providers of neuro-behavioural rehabilitation services to alert them to the St Andrews–Swansea Neuro-behavioural Outcome Scale. A similar session was organized at the National Brain Injury Centre Conference. Success is demonstrated by the widespread use of the Swansea outcome scale in the UK, Australia, Canada and the USA. In the UK, in 2012, a meeting of representatives from all major providers of neurobehavioural rehabilitation services agreed that all providers would use the outcome scale for 12 months and then decide if its use would become mandatory in the UK.

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Practical, impactful consequences are recognised as an integral part of the research process and staff are encouraged to evaluate and disseminate the impact of their work at every stage. The unit will continue to support impact by **enhancing current good practice** by mechanisms designed to facilitate this strategy. These include:

- Reviewing each staff member's plans for the dissemination and exploitation of research as part of the Professional Review and Development process. (This is a Departmental initiative that complements the University approach.)
- Extending the proactive approach of addressing practitioners in addition to more traditional academic bodies. The unit has introduced a fund to resource attendance / participation at events for non-academic users.
- Ensuring that equal priority is given to both theoretical and applied research when space, equipment and technical resources are allocated.
- The promotion of research to practitioners through conference organisation and extending outreach activities (e.g. via social media and podcasts). An example was the Swansea based 2013 international conference on 'Novel psychoactive substances' that was beamed live via the internet and received questions to the presenters by this means, for example from Tasmania.
- The unit will continue to support staff in their engagement activities by adjusting other academic duties through a load management model but also by funding sabbatical leave.

d. Relationship to case studies

Both case studies are **exemplars of the success of our research strategy which has impact and interacting with end users as integral features**. The dietary example initially involved fundamental research with the aim of understanding physiological mechanisms rather than at that stage studying food per se (Stage 1, see Environment Template). Having established basic phenomena, the next stage was to see if the nature of diet modulated these mechanisms (Stage 2). Central to the strategy is involving end-users: in fact it is the critical aspect of the approach without which it could not function (Stage 3).

Over the REF period Benton described his work on food in 18 countries in talks of three types. Firstly invitations from academic conferences, attended by industry: twice from the American Society for Nutrition; being the opening plenary speaker at the Australian Nutrition Society; the Turkish Nutrition Society. Secondly meetings aimed specifically at industry: for example Vitafood, a nutraceutical conference in Switzerland and meetings dealing with carbohydrates in both Brazil and Malaysia. Finally internal meetings of firms that often dealt with product development: Coco-Cola Greece; Beneo, Germany; Friesland-Campina, The Netherlands; Glaxo-SmithKline, India; Kraft, USA; Mars, USA. The involvement in the organization of conferences for the International Life Sciences in Brussels and Kuala Lumpur gave additional opportunities to ensure exposure to industry. **The resulting worldwide use of the findings, to a considerable extent, reflected the decision to proactively interact with industry**. As they became aware companies wished to explore the possibility of developing functional foods and 11 grants were obtained from multinationals to consider food with low glycaemic indices: that is they invested in research and development based on the Swansea findings. The case study of the under-age test purchasing of alcohol is another good example of interacting with end users and reflects a preparedness to respond to national initiatives. The Swansea Centre for Substance Abuse Research had a well-established research reputation that led the Home Office to approach them to design and carry out studies to generate basic information. When results became available the findings were communicated to relevant users, including the Home Office, Thames Valley Police, and a conference for representatives of the drinks industry. The relevance of this work to those developing policy is demonstrated by the role played when establishing legislation both in the UK and abroad.

Necessarily both studies only **proceeded because of supportive departmental policies**, such as accepting the use of time for such activities and providing departmental space, equipment and technical resources: in fact equipment was built, and computer programmes were developed, specifically. The work was recognized in work load models and acknowledged in the Professional Review and Development process. In the early stages travel funding was also made available to allow dissemination.