



Inquiry into research and innovation in Wales Aberystwyth University submission

‘The Welsh Government says that there needs to be a “major increase” in research intended to help solve specific challenges facing Wales (challenge-led research). It also says this type of research needs to be balanced with the more traditional type of long-term research undertaken by universities which pushes the boundaries of knowledge.’

1. To what extent do you agree with this view and how can Welsh Government ensure that an increase in one type of research activity doesn't mean the other type loses out?

We agree with the view of Welsh Government. A major increase in funding is required, both because of the new challenges arising and to keep pace with the rest of the UK, and this must be balanced between fundamental and challenge-led research.

Basic, blue-skies, curiosity driven research (‘basic’ research) is a key activity in a research-led university like Aberystwyth and it is the spring for downstream research on solutions to challenges. Funding to support research programmes of this kind is available from UK agencies such as UKRI and major charities, benchmarked against international standards of excellence. Welsh Government does not need to fund this type of research programme directly as these UK-wide competitive funds are available, but it does need to invest in infrastructure, people and support for basic research if we are to be competitive. This can be done through mechanisms such as QR on a par with England.

In parallel, challenge-led research is a key activity to drive economic growth and solutions to issues affecting society. It does so by delivering translation, application, scaling and impact from findings deriving from basic research. The majority of funding to support this type of activity in Wales has come from EU structural funds but this is ending. Competitive UK innovation funding is becoming available. Welsh Government therefore needs to invest in not only strategic infrastructure to keep challenge-led research relevant for Wales at the cutting edge but also recurrent funding to ensure meaningful partnerships and opportunities for end-to-end collaboration with our delivery organisations (particularly business).

For Aberystwyth University, challenge-led research aligns closely with our key objectives for Research and Innovation with Impact, which is to undertake research with impact of world-leading quality and to tackle contemporary

challenges facing Wales and the world in the 21st century. Aberystwyth University would endorse a parity of 'basic' research activity with that which is challenge-led, as both are important for long-term as well as short-term, wins in our economic and societal growth.

Challenge-led research is nearer to market and it is important to feed the pipeline up the Technology Readiness Levels (TRL). With this type of research activity the opportunity is there for other parties (e.g. industry partners) to contribute. A higher TRL will need collaboration with industry to push it forward and so initiatives such as the Welsh Government 'Smart' suite of programmes that involve industrial collaboration and contributions are an excellent mechanism for this. Statistics to benchmark existing industry engagement and evaluate its impact are required before determining whether funding should be increased/reduced. Industry financial (or in-kind) contributions at an appropriate % should be required for access to WG funding for challenge led funding.

2. To what extent should businesses and other organisations be able to receive Government research funding that might have otherwise gone to universities and colleges? How could this be done without under-funding some organisations – might there be unintended consequences?

Welsh Government should be cautious about weighting too much research funding through business rather than Universities. Universities have established mechanisms to ensure excellence in research and are measured to ensure this. They also have critical mass in their relative areas of expertise and facilities to match, representing a substantial investment and resource. In addition Universities have the administrative functions to manage grants pre- and post- award. Both are important to make sure that Welsh Government gets good value for money from investment in research and innovation. Businesses, especially SMEs, often do not have the in-house expertise to conduct well-designed research with rigor and can find grant administration onerous, administratively difficult and time consuming. Collaborative projects between business and Universities can help overcome these challenges and promote knowledge exchange. Funding to promote collaboration between businesses and other organisations with universities will be beneficial.

3. What needs to be done to ensure businesses and their interests are not over-shadowed by universities when it comes to research and innovation funding and activity?

By making challenge-led funding applications less bureaucratic to apply to, and less onerous to manage post-award, more businesses may be encouraged to participate. In University-Business collaboration, universities tend to lead because they are set up for the administrative burden associated with managing grants, particularly for collaborations with SMEs. If there is a

risk of under-funding business involvement then these schemes need to be made more accessible and less difficult to manage.

A stream of funding available to businesses to allow them to employ suitably qualified/experienced **administrative staff** to manage funding awards would be a helpful addition to the Welsh Government toolkit to encourage business engagement in research. A cap on University involvement such as the Innovate UK approach would not be unusual and would also work to ensure businesses lead on innovation funding bids.

4. What is currently in place from universities and Welsh Government to help and support student and graduate entrepreneurs turn their ideas into successful ventures?

Aberystwyth University runs an initiative entitled: AberPreneurs <https://www.aber.ac.uk/en/careers/starting-business/enterprise/> Our support for students, graduates and staff with ideas for Business and Social Enterprises includes:

- a. A series of regular extra-curricula Enterprise Events: www.aber.ac.uk/careers/enterprise
- b. An annual £10,000 InvEnterPrize alumni-funded ideas competition
- c. FREE one-to-one start-up mentoring from our partners at Big Ideas Wales, hosted here at the University
- d. An annual BUSINESS START-UP WEEK each June
- e. Access for our students to attend Big Ideas Wales bootcamps in North Wales and in South Wales
- f. Involvement in the Virgin Lifestart Programme
- g. Access to Incubation Space at the University

5. Is this support systematic and consistent across Wales and is there more Welsh Government and others could do?

Since the removal of core Innovation and Enterprise funding for Universities administered by HefCW there is no regional government support for Universities to promote spin out activity nor associated technology transfer activity or deliver assistance to businesses in sourcing translational funding. Welsh Universities must find resource from within their student fee or elsewhere to maintain staffing in commercialisation activities. This situation creates regional disparity and in particular disadvantages Wales in comparison to England in the entire regard of enterprise and innovation. The recommendations made by the Diamond Review and subsequently the Reid Review to reinstate funding for innovation and engagement activity should be a top priority, but noting that Welsh Universities will still be playing catch up with their English and Scottish counterparts. The lack of funding to date does not align well with the ambitions of the 'Be the Spark' initiative supported by Welsh Government.

6. What are businesses and universities able to offer each other when they work in collaboration on research and innovation projects?

Companies identify opportunities and a route to market; Universities offer the expertise to use or create the knowledge required to get from one to the other. The gap in middle is 'facilities'. It is important for Universities and public funders to provide the facilities for higher risk development work as it gives a route for research impact and an environment for companies to carry out more speculative activities by de-risking their product and service development. For example, the Aberystwyth Innovation and Enterprise Campus, part funded by the European Regional Development Fund, BBSRC/UKRI and Aberystwyth University, aims to fulfill this specific role in thematic areas of food and drink and bioprocessing and biorefining. A number of other thematic areas are under-served for specialist facilities in Wales and these include, for example, an agricultural technology data and testing centre and a location for research in Spectrum usage. Both are under development by Aberystwyth University as examples of what we as a university can offer businesses.

7. Should Welsh Government and others be doing anything differently to bring smaller businesses together with universities to collaborate on research and innovation projects? What is working well and what isn't?

The BEACON project (www.beaconwales.org) is a good example of a publically funded project that works well to bring businesses closer to universities. It offers 100% subsidized R&D support. The KESS project (www.kess2.ac.uk) also works well to make university expertise accessible to businesses because the cash contribution required is small and therefore is manageable to small business. Lowering the barrier to entry works well, for example allowing in-kind contribution or small cash contribution, e.g. Smart Partnerships.

The challenge is then transitioning successful businesses into paying more for R&D. One option that may work well here is offering low or no interest loans to businesses to fund further R&D work on the proviso that they keep universities involved to add value and expertise.

8. What should Welsh Government and others be doing to help businesses use the knowledge gained from research activity and turn it into marketable products or improved services?

a. Businesses need to be better supported to combine their market intelligence with the knowledge gained from the research activities of Welsh Universities. Conversely, the outcomes and opportunities from our University research need to be more visible and accessible to businesses. Investment from Welsh Government could add significant value here.

b. Businesses need support in product management and related commercialization activities – investment by Welsh Government in product

management activities in SMEs in particular would be a mechanism for accelerating products to market and improving the success rate in sales of launched products.

Aberystwyth Innovation and Enterprise Campus are currently conceptualizing support schemes in both these areas.