

LT&A Issues for the Teaching of Biosciences in Wales

Annual report 2005/06

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Reconfiguration and Collaboration

In February 2006, the Higher Education Funding Council for Wales (HEFCW) announced the allocation of significant funding to Welsh universities under the second phase of the Reconfiguration and Collaboration Fund. As part of this initiative, the University of Wales, Aberystwyth and the University of Wales, Bangor formed the '*UWA/UWB Research and Enterprise Partnership*', which aims to create sustainable collaborations between researchers at the two institutions. The Partnership features a joint research management structure and targets investment in academic areas where the institutions have research synergies. A joint Research and Enterprise Support Unit is being established to help academics identify research funding priorities, increase research grant funding and manage large projects.

Research in the biosciences is a prime beneficiary from these developments. One outcome is a '*Welsh Centre for Integrative Research in the Rural Environment*', which is bringing together biologists and agricultural scientists from both institutions to determine how different forms of land use and climate change affect the sustainability and resilience of ecosystems. A second centre of excellence is concentrating on '*Catchment to Coast Research*' and will investigate the physical, chemical, and biological factors that influence riverine, estuarine and coastal environments.

In a separate initiative, HEFCW funding has also been provided to establish a Wales Institute of Cognitive Neuroscience, building on existing research excellence at the University of Wales, Bangor, Cardiff University and the University of Wales Swansea. Although these are primarily research-focussed developments, the injection of funding and the associated new appointments will present opportunities to develop and deliver innovative teaching programmes in the biosciences that draw on the complementary strengths of the contributing institutions.

Funding of students in Wales

The Higher Education Act 2004 transferred powers over the tuition fee regime and student support functions to the Welsh Assembly Government (WAG), putting the Assembly on the same statutory basis as the devolved administrations in Scotland and Northern Ireland. All full-time undergraduate students studying in Wales in 2006/07 are being charged a tuition fee of £1,200, compared to the variable fees of up to £3000 that have been introduced in England this year. From 2007/08 variable fees of up to £3,000 are also being introduced in Wales but students who normally live in Wales and choose to study in Wales will qualify for a fee grant of up to £1,800, regardless of family income. Students who normally live in Wales but study in England will not be eligible for the fee grant. It is predicted that this favourable fee regime will cause an increase in the number of Welsh students choosing to study at Welsh institutions. UCAS data in February 2006 showed that there had been a 3.7% fall in the number of applications for September 2006 entry to English universities, while the number of applicants to Welsh institutions had risen by 0.5%.

3. Wales Science Policy

The devolution settlement for science in Wales is complex. For example, the Office of Science & Technology has a UK-wide remit, but other bodies with scientific functions are devolved, such as the Welsh Development Agency. It has been argued in the past that Wales is too small as a country, as an economy and as an HE research community to sustain a science policy independent of Westminster. However, this view is changing with an increased recognition that Wales needs to maintain a strong science and technology base if it is to compete successfully in the global economy.

A consultation document from the WAG in January 2006 proposed three main strands of a future science policy for Wales based on perceived existing strengths:

- Health developments (including public health, tele-medicine and links to
- demographic change and epidemiology)
- Low-carbon energy systems
- Enabling sustained economic and social renewal (utilising both natural and social sciences expertise)

Although the basic idea of a science policy for Wales was broadly welcomed, there were negative responses to the detail. It was felt that the consultation document highlighted only a small part of Wales' science presence (notably failing to acknowledge the strengths in biosciences specifically identified by the Reconfiguration and Collaboration funding detailed above!). The crucial role to be played by the HE sector was stressed and concerns raised about the current lack of strategic preparation in shaping the education system. Universities make independent decisions based on their own financial and strategic constraints and objectives but the sum of the individual decisions may not add up to the educational landscape that is in the best interests of students or of the Welsh economy.

The responses have been reviewed over the summer and a report has recently been placed before the WAG. Responding to concerns that it will be difficult to create an overarching strategy for science in Wales unless there is a focus for science policy in the Assembly, the report recommends the establishment of the post of Chief Scientist, in charge of an Office of Science and Technology. It also calls for a Science and Technology Advisory Council to steer Welsh science policy, to include business leaders from within and outside Wales and senior scientists from the HE sector.

Welsh-medium teaching

In November 2004, the WAG announced £2.9m funding for two schemes to extend Welsh medium provision in the HE sector in Wales. Under the Postgraduate Scholarship Scheme, students studying for a research degree undertake some Welsh medium teaching and develop teaching resources in Welsh. The nine-month Postdoctoral Teaching Fellowship Scheme gives students who have completed their research degrees an opportunity for Welsh medium teaching experience. The schemes are intended to increase both Welsh medium teaching in the short term and the potential supply of Welsh medium teaching staff for the future. However, the impact of the schemes on Welsh medium provision in the biosciences has so far been limited. The Fellowships come without any running costs for research and are therefore not attractive to bioscientists. Although two of the 10 2004/05 Scholarships went to Schools of Biological Sciences in Bangor and Aberystwyth, no science students were included in the 2006/07 awards.

Turning to undergraduate provision, the Welsh Medium Teaching Development Centre launched a new web site in June 2006. The Centre was established in 2000 with the aim of extending and developing Welsh-medium provision throughout the Welsh HE sector. A new 'brand', Mantais (meaning 'Advantage'), has been created. The aim of the website, and that of Mantais, is to encourage students to study all higher education fields through the medium of Welsh and to promote its importance as the national language. A searchable database allows students to identify opportunities to study through the medium of Welsh. Formal provision in the biosciences is currently limited to a fairly small number of modules, although students are often provided with opportunities to interact informally with Welsh-speaking staff, such as through project and tutorial work.

Sustainable Teaching of Biosciences

The Institute of Biological Sciences at the University of Wales, Aberystwyth has been awarded one of three national grants to develop a UK blue print for teaching biology in a sustainable way. The project is funded by the Teaching Enhancement Fund and supported by the Higher Education Academy. Whilst many Universities teach aspects of sustainability in their curricula, it is not always the case that they actually teach the subject in the most environmentally sustainable way. For example, bioscience laboratories are complex environments with high energy/water demands and unusual waste products, and teaching equipment and consumables are often sourced from all over the world. The project will assess modules in terms of their sustainability, identify waste issues and environmental pitfalls in the teaching of undergraduate biology, engage with suppliers of scientific equipment and consumables to assess their environmental principles and develop guidelines for academics and technicians to identify more sustainable practices in the delivery of teaching.

The student experience in Wales

For the second year running, Wales gained excellent results in the student satisfaction survey with almost half of Welsh HEIs scoring above average. Almost half of the institutions improved their score against last year's results. The University of Wales Aberystwyth achieved the best result for Wales in the 2006 Student Satisfaction Survey with 90% satisfaction and a placing of 5th overall in the UK.

Employability

HEFCW has recently commissioned a major review of 'Employment and Employability in Wales'. There is no evidence of a decreasing demand for graduates in Wales and graduates in Wales can realistically expect good employment outcomes. Wales is, overall, a net exporter of graduates to other regions of the UK, but no more so than a number of other UK regions. Given the large numbers of English-domiciled students who choose to study in Welsh HEIs, there would seem to be an opportunity to encourage these graduates to stay following graduation. The GO Wales programme, which provides students and graduates with paid work experience opportunities, has been one very successful way for HEIs and their graduates to build relationships with local employers. However, despite the best efforts of careers services, a large proportion of Welsh employers still have little or no contact with HEIs and do not see any benefit in employing graduates.

A new initiative at Swansea University's School of Medicine aims to build on the potential commercial opportunities available in biosciences and encourage budding entrepreneurs to develop new businesses in Wales. Students registered on a two-year MPhil

studentship will not only learn molecular biology skills but also be fully immersed in the world of business development and entrepreneurship through their attendance at concurrent business training schemes run by a management consultant.

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