The Future of Higher Education

A response from the Society of Biology to the Business, Innovation and Skills Committee

10th March 2011

The Society of Biology is a single unified voice for Biology: advising Government and influencing policy; advancing education and professional development; supporting our members, and engaging and encouraging public interest in the life sciences. The Society represents a diverse membership of over 80,000 - including practising scientists, students and interested non-professionals - as individuals, or through the learned societies and other organisations listed below.

Summary

- Given the loss of teaching funding, the current cuts and the need to create more bursaries/scholarships, the HE sector is under significant constraint and it is unlikely that many universities will be able to maintain the current level of Biological Sciences course provision unless the maximum tuition fees are charged.

- Further guidance and information for schools and the public is needed on the proposed tuition fee system to limit misconceptions.

- Under-funding of Bioscience programmes make the delivery of vital high quality practical teaching more difficult. We must maintain numbers of appropriate Biology courses in UK universities despite the relatively high cost of such degrees to provide us with the research and production base of the future.

- Increasing student numbers in the absence of expansion of staff and facilities will put a significant strain on standards, particularly on practical skills, including lab and field work.

- The Society of Biology welcomes the Government's commitment to try to ensure equality of access for all students.

- To maintain the high quality of graduates entering Biology teacher training, Initial Teacher Education (ITE) courses need to be supported and retained as a graduate qualification within universities.

Charles Darwin House, 12 Roger Street, London, WC1N 2JU Tel: +44 (0)20 7685 2550
info@societyofbiology.org www.societyofbiology.org

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Fees:

Lord Browne recommended that more funding should be available to support the competitiveness of the HE sector, with this funding derived from increased student fees. It is clear that the Government's proposals on tuition fees remain deeply unpopular with a significant proportion of the population, including many of our members. Student fees are a daunting prospect already for many young people and concern has been expressed at the prospect of increased student debt in the future. However, there are misconceptions regarding the operation of the scheme, and guidance and information given to schools and the public on this has been poor. The design of the proposed scheme for loan repayment as dependent on graduate income was intended to ensure that increased fees would not be seen as a deterrent by students or their families, including those on lower incomes. This has not been achieved and must be addressed.

The sector is facing cuts in the teaching grant that precede the introduction of the revised fee system and the Government is signalling strongly to higher education institutions in England (HEIs) not to charge the allowed maximum fee of £9,000. Given the loss of teaching funding, the current cuts and the need to create more bursaries/scholarships, it is unlikely that many universities will be able to maintain the current level of provision of Biological Sciences courses, let alone realise Lord Browne's recommendation of increased funding to support investment, unless the maximum £9,000 is charged. Institutional funding models have detailed the current costs and, in the biosciences, where costs are relatively high, the maximum amounts must be charged in order to sustain delivery.

Student numbers:

Lord Browne recommended that HEIs should have the flexibility to regulate their own numbers, thereby permitting greater student choice and the ability for HEIs to respond to student demand. This requires the removal of the institutional maximum aggregate student number (MASN) and would allow true competition within the sector. It would increase pressure on HEIs to support teaching activities to a greater extent than is often the case at present, thereby driving up quality to the benefit of students.

However, it is not necessarily the case that increasing student numbers in a good institution will guarantee more good graduates in the absence of significant expansion of staff and facilities. Higher numbers of students in practical (laboratory and field) classes can put a significant strain on standards. In this case increased student numbers could be a penalty. Accreditation of degree courses by learned societies is one route to help address these concerns.

Equal access:

The Society of Biology welcomes the Government's commitment to try to ensure equality of access for all students in response to Lord Browne's review. We wish to ensure that the sciences, such as Biology, which are so critical to national health and economic well-being, continue to be widely available across the regions, attracting the most able students irrespective of privilege or wealth. The new £150m National Scholarship Programme will be welcomed by students and their families on lower incomes but the scheme must be implemented so as to ensure that the intended full access for bright students with limited family financial support works in practice.

Proposals for the Office for Fair Access (OFFA) to fine HEIs that do not meet imposed targets do not reflect a constructive approach to improving breadth of access when many contributing factors are beyond the control of HEIs. Many universities are already very pro-active in terms of outreach and work hard to encourage access for students from poorer backgrounds or from those where progression to HE is not seen as a normal route. Aspiration to attend higher education needs to be instilled early in the students' educational career, and to be supported by the ethos of their teachers.

Research and teaching funding in higher education:

The outputs from public funding of higher education include new knowledge and highly educated, skilled people; both are essential for a successful UK economy. To emerge from the current economic crisis, it will be important to increase and exploit our knowledge and skills in areas of national strength, such as the biological sciences, and by supporting pharmaceutical innovation and sustainable agriculture. Science in its totality contributes enormously to our economic and social prosperity, and the life sciences are a particularly successful story for the United Kingdom. In many areas we are second in the world only to the United States, and in other areas we are often the world-leaders[1]. UK University science research represents remarkable value-for-money in terms of drive to the economy per pound invested.

Certain strategically important and vulnerable subjects (including subjects within the biological sciences) require protection both in terms of student access and the retention of trained staff. It is vital that we maintain numbers of appropriate Biology courses in UK universities despite the relatively high cost of such degrees, to provide us with the research base of the future. The Biosciences, while acknowledged as strategically important, have not been considered 'vulnerable' but there is a mismatch between supply and demand in professional skills in many biological disciplines. A recent report from the Biotechnology and Biological Sciences Research Council[2] on areas of bioscience research expertise that are strategically important for the UK, but that are vulnerable or likely to become so has identified whole animal Physiology, industrial Biotechnologies, Plant and Agricultural sciences and Systematics and Taxonomy.

The Browne review proposes that public investment should be targeted to the teaching of priority subjects, such as science and technology, to provide an incentive for HEIs to continue to run courses which deliver significant social returns and provide skills and knowledge currently in shortage or predicted to be in the future. The Society of Biology supports this proposal, however urges that additional money allocated to universities to 'top up' the fees paid by students for these priority subject courses must be ring fenced to ensure that it is used to offer a high quality experience to students on these courses.

The details of cash allocations for university teaching also remain a key concern for the Society of Biology. Biology is at the heart of many areas of strategic importance to the UK, for example, health, the environment, food security, biodiversity and climate change. Bioscience subjects are costly to teach, and there are few cheap options for teaching it well, in part due to the vital elements of laboratory and fieldwork. The production of practically skilled scientists is critical to the economy; this should be reflected in funding

[1] Universities UK report: The Future of Research 2010
www.universitiesuk.ac.**uk**/Publications/.../The**FutureOfResearch**.pdf

[2] BBSRC Report: Strategically Important and Vulnerable Capabilities in UK Bioscience 2009
www.bbsrc.ac.**uk**/web/FILES/Reviews/0905_**bioscience**_research_skills.pdf

in order to ensure that there is sufficient incentive and provision to guarantee good teaching. If universities are to charge fees of £6-9,000 a year, students and their parents will, with justification, expect a considerable return in terms of good quality learning and teaching.

Under-funding of bioscience programmes, which remain strong in terms of recruitment, will place an increasing burden on institutions and make the delivery of high quality practical teaching more difficult. This teaching does not just require access to facilities, sites and consumables but also to sufficient dedicated staff time. We are already aware that courses with laboratory- and field-based elements are experiencing a funding squeeze. We remain concerned that to reduce costs, expensive courses may be cut in some parts of the country, or become restricted in terms of the quality of access to essential practical hands-on experimental experience and skills development.

The planned closure of the Higher Education Academy subject centres is a further concern to the Society of Biology. In particular the Biosciences Subject Centre provides an impressive range of activities and resources to support lecturers, and has led the development of learning and teaching across this subject. We hope that the centralised HEA will continue to offer the discipline-specific support that is so highly valued by members of the Bioscience community.

Degree structure:

We strongly oppose any move towards fast-track two-year degrees as a new norm for strongly skills-based disciplines like the Biosciences. It is important to note that our international commitments under the Bologna agreement push us in a different direction, proposing a *minimum* of three years for undergraduate degrees. It is our belief that science degrees will increasingly require four years of study, and Chemistry and Physics have already moved significantly towards four year integrated Masters degrees as the entry route to research based careers.

Recognising the additional cost of moving to a four year structure for some degrees, the Society believes there must be more flexibility in the university sector to accommodate new degree models. Allowing study breaks, a mixture of full time and part time study and the so called 2+2 model (where students study for their first two years on the theory of their subject at a local (or other) HEI, and then move to a HEI specialising in research for the final two years) merit more detailed review.

Lord Browne's report addresses the gaps between the skills required by employers and those which university graduates are able to demonstrate. If students are to pay significantly enhanced fees, their interest in marketable skills will inevitably grow. It will be important to help students to identify courses which have the strongest likelihood of providing them with the skills and education they require for a particular career path. For this reason, the Society of Biology has been working to develop an accreditation programme for undergraduate biology degrees with significant research training and for which a pilot scheme will operate in the academic year 2011-2012. The Society of Biology is keen to make sure students are able to make informed choices and to be more certain of the outcomes they can expect from their university education.

Teacher training:

Within the review of Higher Education come prospective changes to teacher training. To maintain the high quality of graduates entering biology teacher training, Initial Teacher Education (ITE) courses need to be retained as a graduate qualification within universities. Whilst an increase in school-based learning akin to teaching hospitals has value, in that model, university based learning is also maintained. This provides the space and guidance to become reflective practitioners. Whilst we welcome the specific allocation for the separate sciences, as opposed to an overall allocation for science, the Society of Biology has significant concerns that the assimilation of biology and general science into one allocation will have damaging impacts on the following: recruitment of high quality biology teacher trainees; the levels of expertise in biology education research, and the drive to strengthen subject specialism among biology teachers. The UK is a world leader in many aspects of bioscience education research, and bioscience industries are growth areas essential to the UK economy. Recruitment of young people into further education, higher education and employment in the biosciences is critical and will only continue if they are taught by proficient and expert biology teachers, who have a firm grasp of their subject and subject pedagogy and a deep appreciation of difficulties associated with studying the subject. By grouping biology with general science we are concerned that this will create the impression that biology is the weaker science and discourage students from studying biology further. We would therefore like to see a decoupling of these subjects and recommend that biology is given a stand-alone quota for 2011-2012.

We gratefully acknowledge the contributions of Dr Jon Scott, University of Leicester and Ms Ann Fullick, Society of Biology Education, Training and Policy Committee. The Society of Biology is pleased for this response to be publically available. For any queries, please contact Society of Biology, Charles Darwin House,12 Roger Street, London, WC1N 2JU. Email: policy@societyofbiology.org

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Charles Darwin House, 12 Roger Street, London, WC1N 2JU Tel: +44 (0)20 7685 2550
info@societyofbiology.org www.societyofbiology.org