UK DEANS OF SCIENCE

RESPONSE TO THE HIGHER EDUCATION WHITE PAPER: 'STUDENTS AT THE HEART OF THE SYSTEM'

1. UK Deans of Science (UKDS, www.deansofscience.ac.uk) is a national body that seeks to represent the individuals (usually formally designated as Deans) who are responsible for science in HEIs across the UK and who generally hold the budgets for science including any research budgets. Its primary aim is to ensure the health of the science base of through the promotion of science and scientists and of science research and science teaching in the UK's HEIs.

   Given this remit, UKDS, will not comment on most of the more generic issues in the White Paper including: the mechanism for student financial support (loans for fees and living costs, the operation of the Student Loan Company, grants for living costs for students from low-income households, the National Scholarship Programme), Access Agreements, the Office for Fair Access, the Office of the Independent Adjudicator, the proposal for a Student Charter or the proposed changes to quality assurance and regulatory frameworks.

2. We are pleased to see the emergence of this White Paper for higher education in England and some of its proposals. We particularly welcome:

- the overarching stated intentions to put HE on a sustainable footing, to ensure that HEIs deliver a better student experience (teaching, learning, feedback and preparation for employment) and to ensure increased social mobility
- recognition that higher education has a fundamental value in itself
- acceptance of the Robbins principle that courses of higher education should be available for all those who are qualified by ability and attainment to pursue them and wish to do so
- recognition of the world-leading quality of much of the research carried out in UK universities and that English universities, in common with those in the rest of the UK, are world class and have become increasingly attractive to students from across the world
- the stated intent to tackle the bureaucracy and micromanagement of universities, though there are numerous areas in the White Paper where the proposals appear to be setting out additional demands on HEIs
- encouragement of increased university-industry collaboration. We look forward to proposals through which this will be supported.

The Context of the White Paper

3. We strongly support the combined portfolio that the title of Minister of State *for Universities and Science* represents and fact that the post is located in the Department for Business, Innovation and Skills. However, it is most unfortunate that the White Paper seems to have funding as its main theme as evidenced by its emphasis in the Forward and the fact that the first chapter is also about funding rather than the fundamentals of universities as places of learning and the creation of knowledge. This is in very direct contrast to the Schools White Paper, *The Importance of Teaching*, which considers funding issues in its *last* chapter. Thus instead of having a White Paper that develops a view of how higher education might develop over the next decade or two, which might command very broad support, we feel the heavy hand of the Treasury and other parts of the Department of Business, Innovation and Skills, with only a light steer being possible from the appropriate Minister.

4. There must also be some concern over the White Paper's emphasis on undergraduate education, which means that it misses consideration of the potential consequences of some of its proposals to the UK's science base. We consider some of these issues below.

5. Some proposals in the White Paper - the very major change in funding arrangements, 85,000 contestable undergraduate places, easing the requirements on new HE providers, widening the right to use the term 'university', a new regulatory system, student charters, requirements for collection of new types of data, etc - have the combined potential, particularly during a period of national financial uncertainty, to destabilise much of England's higher education provision. It may also have a negative effect on universities in the devolved administrations, thus threatening the broader UK science base. We therefore trust that the Government will maintain an extremely thorough and detailed overview of the effect of any changes which emerge and will be ready to make rapid adjustments to policy and practice should this become necessary.

Funding

6. As indicated above we do not wish to comment on the mechanisms of any of the forms of financial support for students, but welcome the indication that the Government is still committed to additional support for more expensive subjects including laboratory-based sciences. However, we believe that the amount that will be allocated by HEFCE for each science undergraduate will be insufficient to compensate for the difference in cost between science teaching and most classroom-based disciplines.

7. Many classroom-based disciplines are able to be run at a much lower cost than the maximum allowable fee of £9,000. The Government might be assuming that this will be reflected in the fees charged for the cheaper classroom-based courses. However, with universities finding it increasingly difficult to make a modest operating surplus (a particular issue for science due to its need for significant regular capital investment) there is a distinct risk that over time they will concentrate their provision away from science as they seek to gain financial headway from the potential 'profit' generated from cheaper non-science programmes.

8. An alternative projection might be that the cheaper programmes will gradually be offered at lower fee levels compared with science. This, too, could put science provision at risk when students begin to understand the cost of the build up of their graduation debt.

9. We understand that the Government believes that because students have no up-front costs the increased fees to be charged from 2012 (plus living costs) will not be a deterrent to new undergraduate entrants. It may not be worth speculating on this but the new loan arrangements do produce a worrying anomaly for those wishing to pursue a career in science and scientific research. Such individuals will normally begin by studying for a four-year extended degree (MBiol, MChem, MMath, MPhys, etc) or complete a three year Bachelors degree followed by a one year taught Masters. They then need to gain a doctorate and, often, undertake a period of relatively low paid postdoctoral research.

10. Under the financial arrangements for 2012-13, a four year extended science degree has the potential to create a loan debt of between £58,000 and £66,700 for a student from a family of relatively modest income living away from home. We wonder whether anyone in BIS has considered:

    i) whether a student who has such a debt would be willing to spend the further time at a low income completing a necessary PhD and some years of postdoctoral research before earning a reasonable income

ii) the effect the high debt of a three year undergraduate programme will have on uptake of taught Masters (and subsequently PhDs) in science

iii) whether students will wish to complete four year Master degrees when three year Bachelor's degrees are available. The four year programme is critical to the long term competitiveness of UK science.

It will be clear that these issues have the potential to threaten the production of professional scientists (through lack of uptake of the four year programmes, taught Masters, PhDs and postdoctoral positions) and the national provision of taught Masters programmes which will be even more dependent on successful recruitment of international students. We wonder whether the Government appreciates the significance of the PhD as a pipeline to employment and the importance to industry of the additional specialisation that an MSc often gives. To give just one example, Masters degrees in statistics taken by some mathematics graduates are crucial to the Pharma industries and to many other important sectors of the economy.

The Student Experience

11. While there is no case for complacency, the fact that over 80% of students in the National Student Survey are 'satisfied or very satisfied' with the teaching they receive suggests that there is not quite the problem in English universities that might be assumed from the fact that the White Paper has the student experience as one of its main themes, which seems to suggest that HEIs are failing to deliver an appropriate experience.

12. The wide range of actual student workload between and within subjects noted by the Higher Education Policy Institute is interesting and worthy of further investigation. We are also aware of certain research that indicates that some quantifiable indicators can be broadly indicative of enhanced student outcomes (for example, class size, the total time a student devotes to her/his studying). However, we advise against the idea that by collecting and publishing vast quantities of data by course, subject and institution, potential students are likely to be better informed about quality of provision. It is more likely to lead to even more misleading league tables that fail to take any account of the teaching *and learning* processes and also, as always, lack any indictors of value added.

A Diverse Sector

13. We note the Government's intention to encourage the FE Colleges and other providers (including for-profit organisations) to bid for HE student numbers and to review the use of the title 'university'. The teaching of science at degree level requires a very high investment in physical facilities and human resources (well qualified technicians as well as academic staff) which cannot be provided small institutions or those that do not deliver the full range of programmes from undergraduate to doctorates. We are also concerned that the term 'university' is already being used to describe too many institutions including those with no research degree awarding powers. We urge the Government to consider just how far it believes it can stretch the use of the term 'university' before it has a devastating effect on the global view of UK higher education.

Allocation of Student Numbers

14. There may be unintended consequences from the decision to allow an effective free for all for the 65,000 students with the equivalent of AAB or above at Advanced level. Several of the sciences have significantly lower percentages of AAB students than some classroom-based subjects. If the policy should result in almost all such students becoming concentrated in a small number of universities a 'squeezed middle' group might find themselves with insufficient students to maintain their science provision. We are unsure whether anyone has yet considered the further detail of the total numbers of these AAB/AAB equivalents. We note that HEFCE's proposal is that 'equivalents' (as well as including obvious Scottish Highers and BTEC grades) should include A*A*C, A*A*D, A*AC, A*BB and A*A*+A* at AS. None of these A or A/AS requirements, of course, recognise the well established differences in difficulty of the various subjects at A level.

Social Mobility

15. Although not specifically an issue for science we feel we should make some comment on the Government's welcome commitment to social mobility, as evidenced by the public statements of many of its members, including the Prime Minister and the Secretary of State for Education.

16. The extent to which social status and type of school affects educational outcomes in the 5 to 19 age group is well established. It needs to be recognised that educational equality will only be achieved in higher education when the issue of inequalities in teaching in schools has been fully addressed. This is of particular concern in the sciences because of the linear nature of the subjects.

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