



HOUSE OF LORDS

HOUSE OF LORDS SCIENCE AND TECHNOLOGY SUB-COMMITTEE I

Call for Evidence: Higher Education in STEM Subjects

Deadline for submissions: 16 December 2011

The House of Lords Science and Technology Sub-Committee I, under the chairmanship of Lord Willis of Knaresborough, are conducting an inquiry into higher education in STEM subjects (science, technology, engineering and mathematics).

Scope

A healthy science base and a supply of suitably trained STEM graduates are vital for our economy to enable the UK to do well as a nation. STEM graduates are required both to allow the country to address scientific problems such as climate change and responding to global pandemics, and also to provide high level numeracy and quantitative skills for industries such as the financial services and the civil service. A very wide range of business groups and government view the supply of STEM graduates as a key part of economic growth and UK competitiveness.

Nevertheless, university recruitment to some STEM subject areas continues to prove a major challenge, so much so that most STEM subjects are identified as “strategically important and vulnerable subjects”. Industry continues to report shortages of STEM graduates in some areas and yet at the same time a substantial proportion of STEM graduates end up working in jobs that do not require a STEM degree. The focus of this inquiry is to explore the reasons for this mismatch and how to ensure that the UK is producing a sufficient supply of STEM graduates to meet all its needs.

Questions:

The Committee invite submissions on the following points and also on the combined effect that these issues have or will have on the provision of higher education in STEM subjects:

General questions

- What is the definition of a STEM subject, and a STEM job?
- Do we understand demand for STEM graduates and how this could be used to influence supply?

16-18 supply

- Are schools and colleges supplying the right numbers of STEM students and do they have the right skills to study STEM first degrees?
- What have been the effects of earlier government initiatives on the uptake of STEM subjects at advanced level?
- What effect, if any, will the English Baccalaureate have on the study of STEM subjects in higher education?

Graduate supply

- Is the current number of STEM students and graduates (from the UK, EU and overseas) sufficient to meet the needs of industry, the research base, and other sectors not directly connected with STEM?
- Is the quality of STEM graduates emerging from higher education sufficiently high, and if not, why not?
- Do STEM graduates have the right skills for their next career move, be it research, industry or more broadly within the economy?
- What effect will higher education reforms have on the quality of teaching, the quality of degrees and the supply of STEM courses in higher education institutions?
- What effect does “research assessment” have upon the ability to develop new and cross-disciplinary STEM degrees?
- What is the relationship between teaching and research? Is it necessary for all universities to teach undergraduates and post graduates and conduct research? What other delivery model should be considered?
- Does the UK have a sufficient geographical spread of higher education institutions offering STEM courses?
- What is being done and what ought to be done to increase the diversity of STEM graduates in terms of gender, ethnic origin and socio-economic background?

Post-graduate supply

- Is the current training of PhD students sensitive to the range of careers they subsequently undertake?
- Are we currently supporting the right number of PhD studentships to maintain the research base and are they of sufficient quality?
- What impact have Doctoral Training Centres had on the quality and number of PhD students? Are there alternative delivery models?
- Should state funding be used to promote Masters degrees and is the balance right between the number of Masters degree students and PhD students?
- What impact will higher education reforms have on the willingness of graduates to pursue a research career?

Industry

- What incentives should industry offer to STEM graduates in order to attract them?
- What steps are industry and universities taking together to ensure that demand for STEM graduates matches supply in terms of numbers, skills and quality of graduates?

International comparisons

- What lessons can be learnt from the provision of higher education in STEM subjects in other countries? Which countries provide the most helpful examples of best practice?

The Committee would also be interested to hear about any other issues not already covered by this call for evidence that are relevant to the scope of the inquiry.

The Committee will hold public meetings from December and the Committee's report will be published in the summer.

Submissions should be sent preferably by email in **Word format** to hlscience@parliament.uk; or they can be posted to: Elisa Rubio, Clerk to the Science and Technology Sub-Committee I, House of Lords, London SW1A 0PW.

Please ensure that you include relevant contact details. Evidence should be attributed and dated, with a note of your name and position, and should state whether it is submitted on an individual or corporate basis.

Short submissions are preferred; longer submissions (more than 6 pages) should include a summary. Paragraphs should be numbered.

Evidence should be prepared specifically for this inquiry. Witnesses are encouraged to focus on those issues of which they have particular knowledge or experience—submissions are not required to cover all questions.

Evidence becomes the property of the Committee, and may be printed, published electronically or circulated by the Committee at any stage. If your evidence is not printed, it will in due course be made available to the public in the Parliamentary Archives.

You may in addition publicise or publish your evidence yourself, but in doing so you should indicate that it was prepared for the Committee. If a submission is substantially the same as work that has already been published or disseminated for some other purpose, or is deemed not to be relevant to the inquiry, it will not be treated as formal evidence.

Personal contact details supplied to the Committee will be removed from evidence before publication and from the copy deposited in the Archives. However, personal contact details will be retained by the Committee Office and used for specific purposes relating to the Committee's work, for instance to seek additional information or to send copies of the Committee's Report.

The Committee will invite some of those who submit written evidence to give oral evidence at Westminster. Transcripts of such evidence will be published.

You can follow the progress of the inquiry via the Science and Technology Committee web pages, accessed from <http://www.parliament.uk/hlscience>.