UK Deans of Science

Response to the Science and Technology Select Committee Inquiry – The Impact of Spending Cuts on Science and Science Research

1. We are extremely pleased that the Science and Technology Select Committee has announced this inquiry at a time that is critical for the UK in both political and economic terms.

2. The UK Deans of Science (UKDS) has members in around 70 HE institutions that have significant science portfolios. Our primary aim is to ensure the health of the science base of the UK through the promotion and support of science and scientists and of science research and science teaching in the UK's HEIs.

3. We wish first to place on record our appreciation for the significant increases in real terms in the science budget that have occurred over the past ten years.

4. We understand that various government and non-government groups are in the process of modelling cuts of up to 20%. Cuts at the top end of this range applied to the university STEM community would bring negative consequences that would take up to ten years to put right. The effect of a reduction of a few percentage points would depend on the decisions as to where the cuts should fall but, in spite of the strong and negative response that would ensue from some quarters, could be dealt with in the short term. However, our greatest concerns are the message that any reduction in the science budget will give to young people considering committing their careers to science and the effect it would have on companies that rely on a strong science base in the UK to justify continuing to invest here. Even more important is the opportunity that currently exists to change the nature of the UK's economy.

5. The issue of "message" is something that cannot be dismissed lightly. The science community and the government have worked successfully in recent years to make the study of science more attractive. UK research output is world leading and the UK has increasingly become an attractive place in which to study and to do research. We need to ensure that appropriate and continuing investment takes place to ensure that we do not now give a message that science has lost its national importance. Such investment is also important to protect our reputation with international undergraduate and postgraduate students – an area of potential growth provided actions are not taken that diminish the reputation of UK higher education.

6. We realise that any argument that the science budget should be immune to the need to contribute to the reduction in the country's budget deficit may be interpreted as straightforward protectionism. This is categorically not the case. The government and almost all political parties now accept that developments in science and engineering will be the only basis through which the UK can remain economically viable and it is through investing in them that the major national and global challenges (climate change, energy and food sustainability, health and wellbeing, etc) will be solved.

7. The recent global economic crisis has led many countries to make difficult investment decisions. France is investing heavily in its universities, the American Recovery and Reinvestment Act is injecting an additional $8.9Billion in research ensuring that several large spending areas, including the National Science Foundation, are on course to double their budgets over the next 7 years, and many other countries are deliberately increasing their expenditure in research at this time. Indeed it is difficult to find any other nation that is cutting back on its investment in SET research. We simply cannot believe that in such an international environment a saving of a few hundred million pounds per annum (in the context of the UK's annual national and local government public spend of *ca* £1.4 trillion) is the right course of action. *There is currently an almost unprecedented opportunity for a strategic rebalancing of the UK to a more sustainable, knowledge-based economy that makes full use of advances in science and technology, including the development of a more competitive workforce at all levels and especially the next generation of research leaders*. We urge the Science and Technology Committee to make this point as forcibly as it can and to work with other committees in both the Houses to ensure that this message is heard, understood and acted upon. A failure to invest appropriately now will leave the UK behind as the world recovers from recession and within three years it will be too late to catch up.

8. THE PROCESS FOR DECIDING WHERE TO MAKE CUTS IN SET SPENDING

Where cuts may fall is likely to have repercussions in the future. The cuts will have been caused by decisions of politicians, not the SET community. The science community may have many views on how and where cuts in spending might be made but we believe that decisions in this case should be made by those who have decided on any reduction in funding. They must explain their reasoning and be ready to accept responsibility for the short and long term consequences of their actions.

9. ESTIMATING THE ECONOMIC IMPACT OF RESEARCH FOR QR FUNDING AND RESEARCH COUNCIL GRANTS

We believe that the success of UK science as it leads the recovery from recession will be clear evidence of impact and that science research has had clear and quantifiable effects on the profitability of UK plc. Measuring impact can be more difficult, but if both the research councils and HEFCE stand by their claims that the excellence of research comes first and that impact is a secondary factor in making decisions about grants for research councils and, for the Research Excellence Framework, is a process of describing the effects of scientific work over a reasonable period, not a measure of knowledge transfer, then we believe that metrics for measurement can

be defined. Areas like particle physics, where impact takes a long time, must be recognised and indeed the diversity of time scales and kinds of impact are important. Excellence in research comes first but impact is real and can be measured.

10. DIFFERENTIAL EFFECT OF CUTS ON DEMAND-LED AND RESEARCH INSTITUTIONS

We may have misunderstood this part of the Committee's inquiry but the apparent suggestion of a distinction being made between different classes of university is unclear to us. Most universities are led by demand both in teaching and research. If a differentiation is being made between a "research-only" institute and universities that always have research and teaching functions, then we again feel that this is an artificial taxonomy as the function of a research institute should include training ("teaching") as well as research.

11. THE IMPLICATIONS AND EFFECTS OF THE ANNOUNCED STFC BUDGET CUTS

There are two major concerns for our members. The first is the inability of research areas to plan programmes of research because of the instability introduced by the STFC's cuts, both on this and previous occasions. The second is the ability to pay our way in major international collaborative ventures, and the ability to maintain clear lines of sight so that UK scientists are not seen as bad or second class partners. We understand that the recent cuts are related to currency fluctuations and would suggest that ways should be found to moderate the effect of currency fluctuation. In addition the removal of the Research Councils' end of year flexibility in previous cost cutting exercises has contributed to the immediate problem and will mean that start/stop systems will be more prevalent than they need to be. Where investment in major international activity (such as ESA) is part political and part scientific, it is unfortunate if the associated costs impact on the whole of the STFC-funded research community.

12. THE SCIENCE BUDGET RING-FENCE

Members of the Committee will be well aware that it is always difficult and sometimes impossible to turn scientific research on and off as funding increases/appears or reduces/disappears. In some cutting edge, fast moving research areas a six month hiatus can make it effectively impossible to ever catch up. There is therefore a real need for the science budget to be ring-fenced and, as far as is practicable, it should not be subjected to sudden, large fluctuations. Ideally this approach should be applied to the HEFCE research budget, but we believe that this would require an instruction from government to HEFCE given its current process for allocation of such funding.

13. THE 'SCIENCE AND INNOVATION INVESTMENT STRATEGY 2004-2014'

This ambitious document was very much welcomed by the SET community and there is evidence in many areas that the government and universities are delivering on several of its goals. We note that the Committee specifically mentions as one of the 'next steps' in this document, making progress on the supply of high quality science, technology, engineering and mathematics (STEM) graduates to achieve its overall ambitions for UK science and innovation. There has been a

significant positive movement here through the combined efforts of university science faculties, scientific professional bodies, the science-based industries and government. However, the ambition as stated in the science and technology investment strategy included, *inter* alia, a "step change" in the quality of science teachers in schools, the results in science GCSEs and in the proportion of better qualified students pursuing careers in research and development. Since we are now two-thirds of the way through the period of the strategy some serious quantitative assessment of progress in this and in the percentage of GDP spent on research and development is urgently needed.

14. EFFECT OF HEFCE CUTS ON THE UNIT OF FUNDING FOR STEM STUDENTS

We have indicated above that we believe that the route out of the current economic crisis is an investment in the world class knowledge and skills base available in the STEM community. Any reduction in support at this time will undoubtedly damage the UK's competitiveness relative to those countries who are taking a different approach to investment in science and technology. Any cut in the unit of funding for STEM students at undergraduate and postgraduate level can only give negative messages to young people about the importance of science and of a career in scientific research in the UK.

15. UKDS would be pleased to supply further comment if requested.

Ian Haines
Executive Secretary
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