

## DINNER/DISCUSSION SUMMARY

### Science Policy and Management

Held at The Royal Society on Wednesday 11<sup>th</sup> May, 2005

We are grateful to the following for support for this meeting:

**BAE SYSTEMS**

**The Council for the Central Laboratory of the Research Councils**

**Natural Environment Research Council**

#### Chair:

**The Rt Hon the Lord Jenkin of Roding**

Chairman, The Foundation for Science and Technology

#### Speakers:

**Sir Keith O’Nions FRS**

Director General of Research Councils, Office of Science and Technology, DPEI

**Sir David Wallace CBE DL FRS FREng**

Vice-Chancellor, Loughborough University and  
Treasurer and Vice-President, The Royal Society

**Dr Mark Walport FMedSci**

Director, The Wellcome Trust

SIR KEITH O’NIONS<sup>1</sup> said that two reasons for investment underlay the ten year science framework<sup>2</sup> – sustaining and enhancing the world class science base and improving the exploitation of the science base. Investment in the former fell under the following heads – providing the foundations (full economic costing up to £200m p.a, infrastructure fund £500m; and large facilities, £254m); health of disciplines (extra £40m for engineering, maths and social sciences, and £30m for BBSRC and NERC research grants); research careers and science and society (£80m for Roberts Review and £11m on OST budget); and clinical and energy research (£25m to MRC and £25m to EPSRC for research on future energy options). The Research Councils’ allocation had risen from £2,385m in 2005/6 to £2,793m in 2007/8. Investment in improving exploitation came from the Higher Education Innovation Fund, the Public Sector Research Establishments and the DTI Technology strategy. The aspiration was to increase the UK R&D/GDP ratio from 1.9% to 2.5% in ten years. But R&D intensity varied between sectors – the UK had a large sector of very low intensive R&D industries compared with other countries, but it was in these areas that the value added by R&D was highest. We must, for the future, sustain the high value added sectors and provide the feedstock to develop new high value added sectors.

SIR DAVID WALLACE pointed out that research funding for universities was highly selective, and changes to the RAE were increasing selectivity. TRAC (transparent approach to costing) could severely affect university accounts. It was important that Full Economic Costing (FEC) was costed out at project level, and monitored for sustainability at institutional level and received extra government funding. He was concerned that EU

funding should recognize the implications, and that the Research Councils should find means of controlling the extra pressure that FEC would bring. He noted that threatened strategic subjects included non-science subjects such as foreign languages and land planning: recent HEFCE formula changes had not helped laboratory based subjects, but HEFCE were now reviewing the strategy. Managing independent researchers was difficult, as the real drivers were self and peer pressure. Personal performance appraisal had not been able to be implemented, but developing personal research plans might be the way ahead. For the future, it was crucial to concentrate on the impact of plans or proposals; preserve the autonomy of institutions and their responsibility to all stakeholders; recognize the impact of student fees – which will reduce the importance of QA and HEFCE; and ensure that universities have the ability to take decisions, based on good financial information, but able to look beyond it.

DR MARK WALPORT said that fundamental questions were who determined how money was given out, what were the underlying motives, and how to measure the success of the distribution. He instanced top down approaches, which sought to fund solutions to specific problems, but were out of time (Charles II on longitude and Nixon on cancer) compared with scientists just interested in interesting questions. He suggested the hybrid approach, instanced by asking scientists what were the problems in developing cures for world wide health issues on which research could be focussed (answers – vaccines that don’t need refrigeration; drugs that did not provoke resistance; assessment of those with multiple conditions). When it came to looking at specific research proposals, Research Councils should then seek evidence that the applicant is a good scientist (they might even, uncharacteristically, read some of the papers she or he has published); knows why the question he seeks to an

<sup>1</sup> Presentations are on the Foundation web site [www.foundation.org.uk](http://www.foundation.org.uk)

<sup>2</sup> [www.hm-treasury.gov.uk/spending\\_review/spend\\_sr04/associated\\_documents/spending\\_sr04\\_science.cfm](http://www.hm-treasury.gov.uk/spending_review/spend_sr04/associated_documents/spending_sr04_science.cfm)

swer is important, and knows how to approach it; and what resources are available. Youngsters will need mentors. Research Councils need to understand that there are limits to planning; that discoveries cannot be predicted; and seek to identify unmet needs. To measure success there must be realistic measures or indicators (which were not perverse as some were in the NHS), an international outlook, an awareness that attribution is not the crucial factor (discoveries are often the work of a team or teams) and that professional and managerial targets can conflict (again the NHS provides examples). Input and output targets are inevitable, but must be scrutinised. A study of US defence projects appeared to show that mission oriented projects delivered success in a short time without minimal university participation, but lateral transfers (such as obstetric ultrasound from shipbuilding) were important. Problems were identifying the right drivers; fears that the management approach might stifle ideas; how outcomes of research can be captured; and – finally and most important – how do we continue to persuade politicians and the public that fundamental science matters.

A number of participants, in the ensuing discussion, took up Dr Walport's concern about the effect of the managerial culture. It was vital to recognize that the UK had an enviable record of scientific success; and that this success had come about through the ability of individual scientists to pursue their interests. To try to confine them within set parameters, and demand performances which were not in accord with their own priorities, risked losing the drive that had led to past triumphs. More funding was essential, but it must not be accompanied by an over managerial culture. It was accepted that there were dangers in neglecting lessons of the past, but any debate must take place in the context that the big argument – that science mattered and should be properly funded – had been won. What was now important (as Dr. Walport had said) was to continue ensuring that politicians understood the importance of science and were willing to spend taxpayers' money on it. Ministers were accountable to parliament and the public and they needed to have some measures, or outputs, which they could use to justify the expenditure. There had to be some management; the danger was setting management targets which took no account of professional realities or of the uncertainty about the outcome from any research project. A management target which was formulated simply to make a political point was likely to be perverse, and should be resisted; but a target which was related to careful stewardship of funding and ensured that original purposes were not lost could be valuable to the researcher, as well as important for public consumption.

Other speakers raised the question about the relationship of the Research Councils and HEFCE, and the way the Research Councils operated. It often seemed that the formula allocations from HEFCE ran counter to the priorities that the Research Councils were developing in funding projects. But the dual support system had been set up so as to give individual institutions the

ability to use their block grant in the way they wished: to suggest that HEFCE should align its funding to research council grants would be to undermine the principle of institutional autonomy. HEFCE formulas could be criticized because of their failure to recognize the true costs of laboratory subjects, and because of some of the impacts of the RAE (although it was pointed out that the universities had brought RAEs on themselves), but anything that empowered HEFCE to determine funding subject by subject would be unfortunate. The bureaucracy surrounding the Research Council processes was criticized: it was onerous and costly – indeed the cost of applying for a grant could exceed the value of the grant, while the delays were damaging to morale and efficiency. But it was pointed out that the councils spent only 3.7% of their funds in administration, much less than other countries. Peer review was attacked as being responsible for much delay, and a hindrance to radical thinking. But it was a method that was tried and trusted; scientists and researchers would be very unwilling to see it dropped in favour of what might be a quicker, but would certainly be a more arbitrary, method of assessment. But it should be used carefully, and with the aim of promoting projects, not rejecting them.

Finally, there was concern that, in spite of the rhetoric and the additional funding, had the government really recognized the importance of science? Why, for example, was Lord Sainsbury not in the cabinet? Was the government still expecting the private sector to fund unrealistic sums on R&D and innovation? Should not the public spend on science be much greater to recognize this? Did we know whether we were spending the public money to get more Nobel prizes or to get more graduates into industry? The answer to the last question was both – the two were not incompatible. But underlying all these points was, perhaps, a reluctance to acknowledge that it had been a hard and uphill battle to achieve the recognition of the importance of science and the consequent increase in funding. Cabinet postings and departmental nomenclature were of little importance beside this achievement. We now had to capitalize on this success and maintain the impetus it has given. There was always the danger that it would be seen as a one-off; continuous pressure would be needed to ensure there was no backsliding. It was unrealistic to expect a substantially different approach from government, above all one which would involve much greater funding. What was needed was for the public to understand that scientific research, directly or indirectly, brought benefits, both economically and socially.

Sir Geoffrey Chipperfield KCB

Background information:

[www.ost.gov.uk](http://www.ost.gov.uk)  
[www.hefce.ac.uk](http://www.hefce.ac.uk)  
[www.shafc.ac.uk](http://www.shafc.ac.uk)  
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