



# The Save British Science Society

SUPPORTING SCIENCE & THE APPLICATIONS OF SCIENCE

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## Brilliance, diversity and dynamism in university research

SBS response to the House of Commons Science & Technology Committee's  
Inquiry into the Research Assessment Exercise

1. SBS is pleased to respond to the consultation on the Research Assessment Exercise. SBS is a voluntary organisation campaigning for the health of science and technology throughout UK society, and is supported by 1,500 individual members, and some 70 institutional members, including universities, learned societies, venture capitalists, financiers, industrial companies and publishers.
2. SBS starts from the assumption that a Research Assessment Exercise (RAE), in some form, is the price the university research community has accepted for the continuation of the dual support system of funding scientific research and engineering research in academic institutions.
3. Because the bureaucracy associated with the RAE is *relatively* low (compared, for example, with that associated with the assessment of university teaching), and because the assessment panels are generally composed of people who are active researchers and who command the respect of most of the community, there is much about the RAE that has been seen as positive.
4. In particular, the research community can honestly claim that university researchers are as accountable for the public money they receive as any other group in society.
5. Nevertheless, the RAE system has many flaws, some of which are inherent in its ethos and processes, others of which are side-effects of its operation over the past decade and a half. The following comments inevitably concentrate on the negative aspects of the RAE.

### Creating space for brilliance

6. Although some may argue about the extent to which it has worked, few people doubt that the RAE has been instrumental in raising the average quality of research in UK universities. A tail of unexciting research has been removed from the national portfolio, as Heads of Department and Vice-Chancellors have diverted resources into more successful areas.
7. However, the RAE may well have exacerbated the effects of overall underfunding by further reducing the scope for truly outstanding research, of the kind that only occurs very rarely, and serendipitously. To express it starkly: would Galileo, Newton, Darwin, Einstein or Watson and Crick have been allowed to follow their

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brilliant hunches if the RAE had been looming, or would they (in a modern world where few people have financial independence) have been forced into safer areas more likely to produce technical articles on a short-time scale?

8. SBS believes that the beginnings of this problem predate the existence of the RAE, and are based in chronic underfunding of the science base, but that the risk-averse culture promoted by the RAE has made the situation worse.

9. Britain does not win as many Nobel Prizes as it used to in science, with the average falling from one prize (or share of a prize) per year between about 1940 and 1980, to one prize (or share of a prize) every three or four years in the 1980s and 1990s.<sup>i</sup> It is noticeable that the most recent UK winners of a science Nobel Prize, Paul Nurse and Tim Hunt, have had their long-term research funded through the charity sector, not through the university sector.

10. Research funding via the Higher Education Funding Councils should allow room for risky science. The current system has vastly reduced the scope for such risk-taking.

### A dynamic research league

11. The science base has always relied on a dynamic flow of people between institutions. The “premiere league” of research universities needs to draw on talent nurtured in laboratories lower down in the pecking order.

12. Last year, in announcing the research merit awards that were part of the last Spending Review, the government sought to compare the university research league with the Football League and Premiere League, by referring to outstanding scientists as the “David Beckhams of science”. Leaving aside the fact that Beckham is paid more for each 90-minute football match than any university researcher earns in a year, the analogy had some merit.

13. The Football Premiere League relies on players like Les Ferdinand (Queen’s Park Rangers, then Newcastle, then Tottenham Hotspurs), who began his career with the non-league team Hayes. Without such lower-division clubs, the League and Premiership would have no wider pool of talent from which to draw.

14. The same is clearly true of the research premiere league. We cannot expect a small number of institutions to thrive if we do not have a healthy sector of universities that are not currently in the top ranks of research achievement, but which have the potential to improve, or which train high quality researchers who can then transfer to higher-rated institutions.

15. This system can only work if the dual support funding system continues to invest in institutions that have the potential for excellence even if they have no current claim to be among the best. This means that the current funding crisis, in which resources do not match the expectations of the RAE results, cannot be solved by simply raising the level of attainment needed to qualify for Funding Council investment. The departments graded at 3 in the RAE are an essential part of a dynamic system, just as the lower divisions are an essential part of the football league.

16. The system of funding by the UK public funding authorities is already more selective than that of the authorities in the USA.<sup>ii</sup> Indeed, the belief that the USA has a more selective funding system was one of “several myths,” debunked as part of the HEFCE’s review of research policy; selectivity has actually decreased in the USA in recent years.<sup>iii</sup>

17. In its review of the research funding the Higher Education Funding Council for England concluded that in striking a balance between supporting existing excellence and promoting dynamism, its current level of selectivity was about right.<sup>iv</sup> SBS agrees. Selectivity of research funding is a good thing, but you can have too much of a good thing.

18. The decline in the numbers of English institutions entering the RAE in various subjects is shown in the table below (the table does not include Scottish, Welsh or Northern Irish institutions, although the patterns are unlikely to be vastly different).

Numbers of institutions in England entering the last three RAEs in various science and engineering subjects				
Subject	1992 RAE	1996 RAE	2001 RAE	% decrease between 1992 and 2001
Biological Sciences	79	61	50	37%
Chemistry	51	49	34	33%
Physics	49	44	38	22%
Computer Science	72	68	61	15%
Civil Engineering	31	29	19	39%
Electrical & Electronic Engineering	53	50	33	38%
Mechanical & Manufacturing Engineering	44	47	33	25%
Metallurgy & Materials Science	30	31	25	17%

19. The table shows that selectivity has bitten hard. In the last nine years, almost 40% of Electronic and Electrical Engineering Departments in England have closed, or decided no longer to enter the RAE, and so have no hope of earning HEFCE funding for their universities.

20. Despite the growth in importance of the biological sciences, only about one half of English universities now claim to perform research in the field.

21. There is no scope for further selectivity. It would be a long-term disaster if the Funding Councils were to remove all funding for departments rated at Grade 3 in the Assessment.

22. The definition of quality must include considerations both of existing and of potential excellence.

### Promoting other activities in universities

23. Much concern about the RAE centres on the fact that it concentrates effort into a limited range of activities. Although the White Paper *Excellence and Opportunity* recognised that the roughly 100 universities of the present day are much more diverse in their aims and methods than the few universities of the past, success in the RAE remains the only way for universities to earn any substantial kind of unencumbered funds for investment.

24. Other activities, such as engaging with a wider public audience, do not “earn points” in the RAE, and are not just sidelined, but actively discouraged. It cannot be in the wider public interest that Cambridge University Press found examples of young researchers who had “received instructions not to write books, and established professionals who are not willing to risk the department dropping a grade [in the RAE] if they take time out to write”.<sup>v</sup>

25. Teaching is another area that many people believe has suffered as a result of the RAE. Because universities do not earn extra resources for being excellent at teaching, there is more incentive for Heads of Department and Vice-Chancellors to appoint academics who are excellent researchers than those who are excellent lecturers, even at the expense of their teaching portfolios.

26. The Dearing Inquiry found that, although 63% of university academics believed that good teaching should be recognised and rewarded in appointments and

promotions, only 3% believed that this was, in fact, the case.<sup>vi</sup> There is little doubt that the RAE has contributed to this experience.

27. This is not an inherent criticism of the RAE itself. If excellence in other activities that are judged to be in the public interest, such as knowledge transfer, teaching, and engaging with the public, also attracted some financial reward (without complex bidding processes), then university bosses would encourage these activities with the same enthusiasm that they now encourage excellent research.

### Distinguishing between accountability and control

28. One of the main criticisms of the RAE is that, a decade and a half into its existence, it is beginning to lose sight of one of its main purposes. Public investment must be used in an accountable manner, and university researchers are no different from other recipients of taxpayers' money in this regard. The RAE therefore provides the valuable service of bringing a huge degree of accountability to the research budgets of the Higher Funding Education Funding Councils.

29. However, accountability is not the same thing as control, and the RAE is coming to be seen as an instrument of control. The White Paper *Realising Our Potential* made it clear that the investment by the Funding Councils was to be used "at the institutions' discretion,"<sup>vii</sup> and the more recent White Paper *Excellence and Opportunity* espouses the same principle. But a recent review of research funding by the HEFCE proposed to attach seven new strings and conditions to the block grants received by universities in England.

30. As SBS has expressed elsewhere, although the intention of such conditions may be to increase accountability, they would in fact increase central *control* over how the investment was used.<sup>viii</sup>

31. Other sources of public funds, such as Research Council grants, quite properly come with a high degree of control. The ethos of the dual support system is supposed to be that Funding Council investment is under local management, not central control. In any case, no further accountability is needed. The RAE already provides an extremely high degree of accountability for the Funding Councils' research investment.

32. Whatever the benefits of the RAE, the UK science and engineering community must be allowed to conduct creative research in a dynamic system, as part of a wider remit of activities, and without any further central control.

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### Notes and References

<sup>i</sup> These figures are for people who were working in the UK at the time they did the work for which they were awarded the prize, irrespective of their nationality; it is what happens in the UK science base that concerns SBS, not the antecedents of the people who do it.

<sup>ii</sup> *Selectivity in Research: Comments on USA-England Comparisons*, SBS, 1998.

<sup>iii</sup> *The Role of Selectivity and the Characteristics of Research Excellence*, Higher Education Policy Unit, Leeds, 2000.

<sup>iv</sup> *Review of Research*, HEFCE, 2000. [00/37].

<sup>v</sup> *Science and Society: Evidence*, House of Lords Select Committee on Science and Technology, Session 1999-2000. Stationery Office, London. [HL Paper 38-I].

<sup>vi</sup> *Higher Education in a Learning Society*, Report of the National Committee of Inquiry into Higher Education. The Stationery Office, London. [1998].

<sup>vii</sup> *Realising Our Potential*, Cabinet Office, 1993 [Cm 2250].

<sup>viii</sup> *Distinguishing between accountability and control*, SBS, 2000 [SBS 00/25].