

Summary

1. The Academy of Medical Sciences welcomes the opportunity to respond to the House of Commons Innovation, Universities, Science and Skills Committee inquiry '*Putting science and engineering at the heart of government policy*'. The Academy's core mission is to promote advances in medical science and to ensure these are translated as quickly as possible into benefits for society. Our 912 Fellows represent the UK's best medical researchers, drawn from hospitals, universities, industry and the public sector. The Fellows are therefore key elements in connecting science, government, policy and society. Given the Academy's constituency, our response focuses on medical research. We would be pleased to expand on any of the points made in this submission.
2. From the discussion below, we emphasise the need to:
 - Integrate science into government policy-making through embedding researchers in policy teams, seconding scientists into government and providing senior civil servants with scientific training.
 - Harness the resources offered by the national academies.
 - Use scientific approaches to assess the success of policy interventions.
 - Provide guidance to outside agencies on the various structures within government that consider scientific evidence and advice.
 - Improve transparency around the teams responsible for specific policy areas.
 - Engage scientists at the earliest stages of policy development.
 - Defend the Haldane principle.
 - Support younger scientists and clinicians – particularly GPs - in public engagement activities.
 - Develop a dedicated online strategy for science and society.
3. This submission includes sections on:
 - Government policy involving science.
 - Government policy about science.
 - Public engagement.

Government policy involving science

4. The Academy has long been active in promoting the need for public policy-making to make use of the best available scientific evidence. It is almost impossible to think of a significant policy issue that does not require the use of scientific evidence. We therefore believe that the views of the science and engineering community should be central to the formulation of all government policy. Furthermore, we urge consultation with the scientific community at the earliest stages of policy development.
5. The first recommendation of our 2007 report '*Identifying the environmental causes of disease: how should we decide what to believe and when to take action?*¹' calls on the government to integrate science into policy-making by:
 - Embedding researchers into policy teams.
 - Providing senior civil servants with scientific training.
 - Seconding scientists into government.

¹ A full copy of the report can be downloaded from <http://www.acmedsci.ac.uk/p99puid115.html>

- Building a cadre of 'evidence-brokers' within government who are trained in both science and policy.
6. The report also emphasises the importance of a taking scientific approach to scrutinising the effectiveness of policy interventions: *'Government... should ensure that there is a greater emphasis on pilot studies and rigorous evaluations of the effects of [policy] interventions'*.
 7. The government has done a great deal to emphasise the role of science in policy-making in recent years, particularly through the establishment of departmental chief scientific advisers (CSAs), the Foresight programme and GO-Science. We particularly welcome the decision to upgrade the role of science minister to include attendance at Cabinet meetings and chairmanship of the new Cabinet Sub-Committee on Science & Innovation. However, there is still considerable variation between government departments in their use of science, something we emphasised in our responses to the departmental reviews conducted by the former Office for Science & Innovation. It is vital that Parliament, particularly through the House of Commons Committee on Innovation, Universities, Science and Skills and the House of Lords Science and Technology Committee, scrutinises the use of science by government departments, and reviews the performance of the various governmental scientific advisory bodies and structures.
 8. There are numerous structures in government charged with considering scientific advice and evidence: we counted seven government-wide science groups, in addition to the various Science Advisory Councils and the 75 Science Advisory Committees. This can be daunting for outside agencies to navigate, and a centralised resource that lists all relevant groups and committees (and their constituent members and contact details) would be beneficial. The Council for Science & Technology (CST), which reports directly to the Prime Minister, is an important structure for ensuring that scientists can engage with government at the highest levels. CST has published several influential reports in recent years, but there is potential for it to do more, particularly in engaging the wider scientific community in identifying priority issues to raise with Ministers.
 9. Accessing specific policy-makers within government can be difficult and haphazard. There is a feeling amongst Academy Fellows that government departments are still too insular and compartmentalised, and could do much more to engage with the wider scientific community to access new research findings and consult with experts. For example, government policy-makers would benefit from a more visible presence at relevant scientific and science policy symposia, and should avoid simply delivering a presentation without hearing about wider developments and engaging in debate. There is also scope for increased transparency around the departmental teams who are responsible for particular policy areas; e-mail addresses and telephone numbers are difficult to find and it is often impossible to identify the right individual to contact, even for initial inquiries.
 10. Government policymakers and Parliamentarians have stressed the value of the medical science community speaking with 'one voice' on important issues, and over the years the Academy has formed effective collaborations with our peer organisations (Association of Medical Research Charities, Medical Research Council, Wellcome Trust, Royal Society, Cancer Research UK etc.) on debates including the Human Tissue Bill, the Mental Capacity Bill, the Human Fertilisation and Embryology Bill, the EU Clinical Trials Directive and other legislation. We have also recently initiated a cross-Academy policy group, including representation from the Royal Society, British Academy and

Royal Academy of Engineering. In this way, we hope that policymakers can assess the *weight*, as well as the breadth, of scientific opinion around particular policy options; a crucial component of any successful consultation.

11. The recent Human Fertilisation & Embryology (HFE) Bill/Act provided a good case study for the use of science in government policy-making. Whilst government could have engaged scientists more fully at the very earliest stages of policy development (particularly in the development of the initial Command Paper), subsequent dialogue with the scientific, medical and patient communities was very constructive. Credit should be given to the expertise and diligence of officials in the Bill Team within the Department of Health, as well as to the scientists who provided evidence and advice. The HFE Act also showcased how the Academy of Medical Sciences can provide expert, authoritative input into policy debates: after publication of our initial report '*Inter-species embryos*'² we worked with colleagues in the Medical Research Council (MRC) and Wellcome Trust to produce ten separate written briefings and three Parliamentary seminars, as well as numerous e-mails, telephone conversations and meetings with individual MPs, Peers, government officials and media representatives.
12. From our particular perspective, we believe government could make much more use of the Academy of Medical Sciences, as well as other national academies and Learned Societies, which provide expert, and most importantly *independent*, advice and input. This point was emphasised in the 2007 CST report '*How academia and government can work together*': '*CST also believes that Government should make greater use of bodies such as the Learned Societies, Research Councils and the independent bodies such as the CST, all of which have strong academic links and provide another valuable source of external academic capacity.*'³
13. The Fellows of the Academy are an expert national resource - representing the breadth of basic and clinical medical research - on which policymakers in government and allied agencies can draw. The Academy responds to specific requests for input from government and others, and makes submissions to governmental, Parliamentary and other public consultations. We also have a strong proactive mission to raise important and timely policy issues, to horizon-scan future topics, to promote debate, to challenge existing policies and to identify future opportunities for UK health and medical science. Through our reports, such as '*Pandemic influenza*'⁴ and '*Systems biology*'⁵, the Academy provides authoritative, evidence-based analysis and recommendations for action. We also invest considerable time and effort into follow-up work, ensuring that our reports, for instance on the use of patient data in research⁶ or on non-human primates⁷, really do catalyse action in government and beyond.
14. We emphasise that the Academy's policy and other activities are resource intensive and require ongoing support from government (amongst other funders). The Academy of Medical Sciences currently receives a small grant-in-aid from the Department of Health, which will provide £415,000 in 2009/10; £425,000 in 2010/11; £435,00 in 2011/12; and £450,000 in

² To access the report go to: <http://www.acmedsci.ac.uk/p99puid105.html>

³ CST (2007). *How academia and government can work together*.
http://www.dius.gov.uk/policy/documents/academia_gov_work_together_131008.pdf

⁴ To access the report go to: <http://www.acmedsci.ac.uk/p99puid89.html>

⁵ To access the report go to: <http://www.acmedsci.ac.uk/p99puid97.html>

⁶ To access the report go to: <http://www.acmedsci.ac.uk/p99puid62.html>

⁷ To access the report go to: <http://www.acmedsci.ac.uk/p99puid83.html>

2012/13. Despite requests, the Academy receives no financial support from the Department for Innovation, Universities and Skills (DIUS). This situation contrasts starkly with the other national academies, which all receive Parliamentary grants-in-aid from DIUS (see table below). In the 10 years since the Academy of Medical Sciences' inception, we have accomplished a great deal with only modest resources. However, securing financial support from DIUS would provide the opportunity for us to reach our full potential.

	Royal Society	British Academy	Royal Academy of Engineering	Academy of Medical Sciences
DIUS Parliamentary grant-in-aid 2007-08	£44.9 million	£21.3 million	£9.8 million	£0

Government policy about science

15. The Academy firmly believes that science in general, and medical research in particular, brings significant social and economic benefits. Indeed, a recent report commissioned by the Academy, MRC and Wellcome Trust estimates that the socio-economic benefits from public and charitable investment in medical research are very substantial.⁸ A thriving science base contributes to UK prosperity, promotes the health and well-being of our citizens and prepares us for future national and international challenges. Establishing a UK economy that is built on knowledge and innovation is the only way to address growing global economic and industrial competition, particularly from China, India and South Korea. While it is appropriate for one government department to lead on science (and disappointing that the UK government currently lacks a department with 'science' explicitly in its title), we emphasise that full utilisation of science and research should pervade all departments.
16. From the medical science perspective, the UK's current research environment is strong, especially following the establishment of the National Institute for Health Research (NIHR) and the Office for the Strategic Coordination of Health Research (OSCHR). The recent emphasis on quality and innovation in Lord Darzi's NHS Next Stage Review also puts science at the forefront of the health service: the proposed Health Education and Innovation Clusters (HEICs) and Academic Health Science Centres will provide opportunities to establish regional policies around health science which both harness regional expertise and address local needs.
17. While such support for medical science is to be commended, we emphasise that OSCHR, NIHR and MRC (and indeed all research councils and science funders) must defend the Haldane principle to protect the independence of the research agenda from short-term political pressures. The balance of funding for different research areas will vary over time and should be influenced by societal need and determined by scientific opportunity - creative ideas, talented researchers, and advances in technology. We stress the need for continued basic research to fuel the pipeline for translational exploitation.

⁸ For more information see: <http://www.wellcome.ac.uk/News/Media-office/Press-releases/2007/WTX038680.htm>

Public engagement and dialogue

18. Methods of public dialogue have advanced considerably over the years and the DIUS Sciencewise-ERC programme and others have done much to establish and disseminate good practice. Policy development in important areas such as GM technology or embryo research could not now be contemplated without integrated public dialogue.
19. We emphasise that there is no 'them and us' when it comes to scientists and the public: scientists are themselves part of society. This was demonstrated during the Academy's recent study into '*Brain science, addiction and drugs*', in which participants in the public meetings and workshops raised the same concerns, voiced the same hopes, and identified the same challenges and opportunities as the experts.⁹ Nevertheless, the report emphasised that: '*in a liberal democracy, an intelligent and appropriate approach to the regulation of recreational drug use presupposes a prior deliberative and inclusive community debate... Government should therefore continue to engage in a sustained conversation with the public to develop a position that commands real support*'. This point can be generalised to many other areas of public policy.
20. There is now an expectation upon top scientists that they will take their work into public forums. The Fellows of the Academy typify this new breed of scientist: of the 215 Fellows who responded to our 2007 communications survey, 98% had engaged with the media about their work and 83% had given a public lecture.¹⁰ Reward and recognition of scientists who take on science communication as part of their work are important, and national academies, including our own, have a role to play in acknowledging excellence in this sphere. Research funders and higher education institutions routinely include expectations around public engagement in grant application forms and job specifications. However, there is still scope for recognition of public engagement work in future versions of the Research Assessment Exercise.
21. It does appear that participation in public engagement work is more common amongst senior scientists, perhaps because they have reached a level where they have more control over their time. It is important to ensure that researchers at all stages of the career pathway are encouraged to participate in public engagement activities, particular younger researchers who might be better able to connect with children and teenagers. There is a case for a specific, dedicated grants scheme to enable early-career researchers to undertake public engagement work. It would also be helpful to gather information about the experiences of younger scientists who combine flourishing research careers with significant profiles as science communicators, and to gain the views of science festival coordinators and media representatives about what makes a good communicator and how scientists with a talent for public dialogue can be identified and nurtured.
22. We stress that many medical scientists are also practicing clinicians who engage with many different publics on a daily basis. This interaction is often not included in discussions about public engagement, yet is one of the most common and most important aspects of the public's involvement with science. GPs in particular could play a significant role in engaging individuals, families and communities in medical science, and will almost certainly have to respond

⁹ To access *Brain science, addiction and drugs* report, go to:

<http://www.acmedsci.ac.uk/p99puid126.html>

¹⁰ To access the Fellows Communications Survey, go to:

<http://www.acmedsci.ac.uk/p101puid124.html>

to an increasing number of scientific inquiries from their internet-using patients. There was broad consensus that this issue merits further consideration at a recent Academy symposium on '*GPs and research*'.¹¹

23. Finally, given that the public are increasingly accessing scientific information from the internet, we believe that, to date, public engagement strategies have not taken sufficient account of the growth in online media. We therefore make a strong call for the development of a dedicated UK 'online strategy for science'. This strategy should include evaluation of current and previous online initiatives: what has worked and what has not? Whilst technical advances encourage the use of ever more dynamic and interactive approaches, which tools are actually effective in generating public engagement around science?

The Academy of Medical Sciences

The Academy of Medical Sciences promotes advances in medical science and campaigns to ensure these are converted into healthcare benefits for society. Our Fellows are the UK's leading medical scientists from hospitals and general practice, academia, industry and the public service.

The Academy seeks to play a pivotal role in determining the future of medical science in the UK, and the benefits that society will enjoy in years to come. We champion the UK's strengths in medical science, promote careers and capacity building, encourage the implementation of new ideas and solutions – often through novel partnerships – and help to remove barriers to progress.

The Academy's Officers are:

Professor Sir John Bell FRS PMedSci (President); Sir Michael Rutter CBE FRS FBA FMedSci (Vice-President); Professor Ronald Laskey FRS FMedSci (Vice-President); Professor Robert Souhami CBE FMedSci (Foreign Secretary), Professor Ian Lauder FMedSci (Treasurer) and Professor Patrick Maxwell FMedSci (Registrar).

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¹¹ For further details see - <http://www.acmedsci.ac.uk/p43evid102.html>