

DIUS: A vision for Science and Society**Response by the Wellcome Trust**

October 2008

Introduction

- 1 The Wellcome Trust is pleased to respond to the Department for Innovation, Universities and Skills (DIUS) consultation on science and society. The Wellcome Trust is the largest charity in the UK. It funds innovative biomedical research, in the UK and internationally, spending around £600 million each year to support the brightest scientists with the best ideas. The Wellcome Trust supports public debate about biomedical research and its impact on health and wellbeing.
- 2 As part of this work, the Trust has a publicly stated strategic aim 'to engage with society to foster an informed climate within which biomedical science can flourish' and is one of the major funders of public engagement activities within the UK. In this response we provide some comments on the principles and scope of the DIUS Science in Society (SIS) vision, and make recommendations for taking forward a strategy to achieving this. Wellcome Trust examples that illustrate our points are in Annex A.

Key Messages

- 3 We welcome the raised profile of Science in Society activities that has resulted from this consultation. We support the need for a coordinated SIS strategy led by DIUS that will enable:
 - greater participation in Science and Society activities by different audiences, including both researchers and the 'public'
 - pooling of expertise and sharing of best practice, including successful activities to improve dialogue and methodology for evaluation and assessment
 - joined-up working, including improved coordination across government departments and better integration and awareness of strategies and existing initiatives
- 4 When delivering the strategy, we would encourage DIUS to adopt a mechanism that is analogous to the successful STEM programme. We would be happy to work with the Government to develop workstreams in key areas such as:
 - Professionalisation
 - Dialogue and debate
 - Science as a creative, enriching and cultural activity
 - Measurement and evaluation

A Vision for Science and Society - General points

- 5 We welcome this consultation and the development of a vision to describe the desired relationship between science and society. We consider that the vision should be more

meaningfully expressed so as to accommodate the fact that the 'science' and 'society' are broad terms. In particular, we are struck by the ambition to build a '**mature relationship** between the public, policy makers, the media and scientists' as described in John Denham's speech in January and in the consultation document itself. We think that this would offer a starting point for the vision.

- 6 We would also suggest that – as developed in chapter four of the consultation – the importance of science as an underpinning part of our culture and its inherent creative nature could be incorporated into the vision statement. Much of science policy has focused on science as an economic good, which is of course important. But, many scientists and young people are attracted to study science because it is about asking questions, developing ideas and attempting to understand the world.
- 7 As part of developing a 'mature' relationship between science and society, the vision will need to recognise the importance of the two-way responsibilities – for example not only do we want to look to the public to support science, we should also aim to create a scientific workforce that embraces its engagement role with the public. There is a body of evidence on barriers to effective engagement, and participation in public engagement by scientists, of which DIUS will be aware¹. Realising the SIS vision will involve continual assessment of the barriers, and setting pragmatic approaches to address and overcome them with relevant stakeholders.
- 8 Finally, it is positive to note the considerable activity that is taking place in public engagement as described in chapter two of the consultation. Anecdotal evidence however, continues to suggest that there is limited awareness of existing activities across organisations. DIUS could play a useful role in sharing information and good practice by providing a publicly accessible hub of information on science and society activities, schemes and attractions.

Specific comments on aspects of the vision – 'A Society excited by and valuing science'

- 9 We support this statement in general, but suggest that it requires further development to be meaningful. For example, it is unrealistic to expect all of society to be 'excited' by all aspects of science or its application. There are clearly some areas of science that are controversial or that raise ethical questions. Moving forward, it will be increasingly important to ensure that society is able to participate in open and informed debate on such topics – a good, recent example of such debate and openness is the broad debate on the HFE Bill.
- 10 As mentioned in the consultation, there is not one single 'public', but many and varied audiences that will have different agenda and interests. It will be important to develop strategies associated with specific broad audiences – sometimes in collaboration with other organisations and agencies. For example, DIUS will need to work increasingly closely with DCSF on its STEM programme – and bring new potential areas of work into that agenda – such as developing the links between formal and informal education, and increasing the involvement of scientists and employers in science education.
- 11 In terms of 'exciting' young people about science, the Science Centres play an important role and could become part of the infrastructure for delivering the SIS vision. We believe that it is important for the Government to recognise this role and provide funding where there is excellence to allow the best Science Centres to become fully sustainable and work more

¹ Factors Affecting Science Communication, 2006: <http://royalsociety.org/downloaddoc.asp?id=3052>

collaboratively.

DIUS Vision: 'A Society that feels confident in the use of science'

- 12 We suggest that this statement requires more clarity. It is unlikely that we will achieve a position where the whole of society is confident in the use of science. However, it will be important for society to have confidence in the governance and regulation of science. Our own research about public attitudes to biomedical research governance indicates the UK public is supportive of research, but does not have a good understanding of governance issues².
- 13 The history of science communication and the emergence of 'public engagement' as opposed to 'public understanding' is rooted within the context of debates about a range of scientific developments such as GM crops, nanotechnology, and the use of embryonic stem cells. Where such controversy arises, this should be viewed as an opportunity to apply good practice in public debate and dialogue in order to progress research in a positive way. In this context, it will be important to learn from past experiences (for example the HFE Bill and nanotechnology debates as examples of good practice). The Trust supports the development of the Sciencewise Expert Resource Centre for this purpose.

DIUS Vision: 'A society that supports a representative well-qualified scientific workforce'

- 14 The Trust supports this ambition and recognises that 'society' will better able to participate in scientific debates if it also has a good foundation in scientific principles and ideas. Clearly, a key to this must be through young people and education. We are pleased that the document notes Project Enthuse – a partnership between the Government, the Wellcome Trust and industry partners to deliver continuing professional development (CPD) for science teachers to improve science teaching. We are committed to the delivery of this project, yet recognise that the development of a culture of CPD for teachers is a long term agenda. Therefore, we urge DIUS to work with DCSF to consider how such initiatives can be embedded and sustained over the long term.
- 15 We are aware of the range of initiatives that have recently been developed to improve science careers advice for young people - such as the Science Council's 'Futuremorph' website – and we welcome them. It will be important to monitor the progress of these initiatives carefully and sustain those that are having an impact.

Taking forward a national strategy

- 16 The diversity of aims within the SIS vision necessitates a strategy that will employ a variety of approaches and expertise. There are clear parallels with the work of the STEM programme in identifying specific areas for further attention, and this coordination model appears to be working well – particularly with respect to cross-department coordination. The Trust therefore supports the SIS leadership role of DIUS which is outlined in the consultation document, and supports the recommendation that DIUS sets up the multi-agency SIS oversight group mentioned in chapter seven. In discussion with other public engagement organisations, we suggest that there could be four workstreams, described below.

² <http://www.wellcome.ac.uk/About-us/Publications/Books/Public-engagement/WTX038446.htm>

Professionalisation workstream

- 17 High quality public engagement requires a professional approach - however and by whom ever it is delivered. A workstream focused on 'professionalisation' could help the field where progress is apparent and ensure that good practice is shared and obstacles are identified. For example:
- Investing in professional science communicators working to support a group of scientists – the Wellcome Trust Sanger Institute employed a professional science communication manager in 2004, which has transformed the ability of scientists working at the Institute to engage with the public about their work in the way most appropriate to their skills.
 - Training courses – there are now a number of postgraduate courses in SIS subjects (Science Communication, Science Media Production, Science Policy and Medical Ethics to name a few) and funding agencies have developed communication and training for practicing scientists;
 - Recognition, reward and career opportunity for scientists - predominant factors affecting researcher participation in public engagement are time spent away from research, and perceived loss of peer regard. Working with the Beacons of Public Engagement (Annex A) to explore how public engagement could be rewarded at institutional level alongside the REF, would raise the profile of SIS activities amongst the research community and go some way towards justifying time spent away from research;
 - Harnessing volunteering: A significant amount of SIS activity is delivered through volunteers. It is crucial to celebrate and support this workforce in the SIS strategy by incorporating actions to improve the volunteer management capacity of public engagement. Volunteering England is committed to raising the quality of volunteer management, and DIUS may find it useful to explore their online Good Practice Bank³.

Dialogue and debate workstream

- 18 This workstream could incorporate the Sciencewise Expert Resource Centre and explore the types of scientific issues that require debate and dialogue, and the purpose of those debates. For example, sometimes this will be for instrumental purposes (such as policy development) and at other times it will be for normative purposes (to explore an area of activity, to test ideas and to share views). Many different models have been developed and there is considerable potential to share and learn from other sectors, and to learn from past examples of good engagement such as the HFE Bill debate.

Science as a creative, enriching and cultural activity workstream

- 19 As noted above, much of science policy has focused on science as an economic good, which has missed the importance of science as underpinning much cultural activity and being an interesting and creative pursuit in its own right. There could be an interesting area of work to explore the different roles of formal education, informal education, museums and the media in conveying scientific messages to the public. This could have significant implications for schools, curriculum and learning where young people in developed countries are being turned off science at a young age (ref ROSE study). This workstream could usefully develop closer collaborative links with the Department for Culture, Media and Sport.

³ Volunteering England: <http://www.volunteering.org.uk/Resources/goodpracticebank/>

Measurement and evaluation workstream

20 It is unlikely that a one-size-fits-all approach to evaluation will be suitable across all the strategy areas as SIS activities have a wide range of goals. Issues around evaluation that could be developed through a workstream:

- Longitudinal monitoring of attitudes: it is important to measure changes and attitudes over time, and beyond specific initiatives. For example, we are looking forward to the Wellcome Monitor (Annex A) being able to add to the information resources about public attitudes, knowledge and understanding in medical science. It will be important to consider how to make best use of existing longitudinal evaluation, and identifying any information gaps that could be addressed by new monitoring.
- Qualitative assessment: While the advantages of quantitative assessment are clear, it would be helpful to best capture SIS impacts that are not quantifiable.
- Access to evaluation information: There is a comparatively large amount of evaluation information in the public domain (reports, statistics etc) on various aspects of science education, in particular formal education - where uptake of STEM subjects and grades awarded can act as yardstick proxies for part of the strategy that relates to a scientific workforce. This is in contrast with other SIS activities such as informal education, activities aimed at adult audiences, and those aimed at informing policy.

21 We would be happy to discuss any of these issues with DIUS in more detail, and look forward to seeing the final Science and Society vision and strategy.

ANNEX A: Wellcome Trust examples of Science and Society activities and resources

Over the past ten years, the Wellcome Trust has invested approximately £100 million in public engagement activities, to foster an environment within which biomedical research can flourish. The Trust funds activities and research to stimulate the public's interest in science, to inform and facilitate public debate on science, and to improve understanding of the social, ethical, historical and cultural context of science.

- **Project Enthuse:** as part of the Trust's support for continuing professional development (CPD), we have partnered with DCSF in a £51million initiative to establish nine regional and one national Science Learning Centre. The aim of this initiative is to provide high quality, accessible CPD for teachers of science and technicians from both primary and secondary education. The Centres support teachers to enhance their professional skills by engaging with contemporary scientific ideas and experimenting with effective teaching approaches and modern scientific techniques. Subject-specific CPD is crucial to ensure that teachers can enthuse and inspire their pupils about science. The national network comprises the National Science Learning Centre (NSLC) in York, and the nine regional Science Learning Centres (SLCs). The NSLC is also working with the Gatsby Charitable Foundation to build on the existing Science Resource Centre to develop a 'STEM' (Science, Technology, Engineering and Mathematics) Resources Centre.
- **Beacons of Public Engagement:** The Trust is allocating an additional £600,000 to the HEFCE / RCUK Beacons of Public Engagement initiative, which provides £1 million from over three to four years towards developing a model of best practice in institutional public engagement. The Trust is committed to fostering researchers in academia who can contribute to the advancement and use of knowledge, and build the capacity of the UK's research base and is also supporting the evaluation of the Beacons.
- **Wellcome Monitor:** A triennial survey to provide a good quality knowledge base of both adults' and young people's awareness, knowledge, interests and attitudes to biomedical science. The aims of the Wellcome Monitor are to:
 - help to focus and target the investment made by the Trust in public engagement of adults and young people;
 - underpin and support the Trust's education strategy; and
 - influence the strategic direction of the UK public engagement and education fields.

The Monitor will also be used to track changes in young people's attitudes to formal and informal science education, perceptions of quality of science teaching, careers in science and motivations and barriers to learning science. The Wellcome Monitor will, over time, allow a better understanding of the impact and effectiveness of public engagement work in the biological sciences

- **Inside DNA - A genomic revolution:** The first UK major touring exhibition on genomics, which was funded by the Trust in 2007. The exhibition aims to collect the views of a million people in its five year duration, and has collected over 11,000 so far on role of genes and the environment in human health, identity and evolution. The information collected is being assessed by the Human Genetics Commission.
- **Broadcast Media Strategy:** Our broadcast programme focuses on working strategically with mass media to encourage increased quality, quantity and visibility of biomedical content in programming of all genres. The broadcast programme includes a grant scheme,

training and development for science graduates entering broadcast, and running events to stimulate dialogue and debate within the broadcast industry.

- ***The Wellcome Trust POST fellowship on Biomedical Ethics:*** This scheme enables a PhD student or junior fellow funded through the Wellcome Trust Biomedical Ethics Programme to undertake a three-month fellowship at the Parliamentary Office of Science and Technology (POST). The Fellowship allows unique access to a parliamentary and policy-making setting, and supports the Biomedical Ethics Programme's remit to encourage the application of research. It is intended to develop awareness of policy environments and processes, and to raise an issue relevant to biomedical ethics among a parliamentary audience.
- ***Wellcome Collection:*** Wellcome Collection is free to all and aims to inspire and challenge visitors through exhibitions and events of contemporary and historical material. It is an innovative venue providing the public, scientists, historians, the arts community and opinion formers with a forum for exploration and exchange about health, wellbeing and biomedical science. Wellcome Collection takes a thoughtful and experimental look at medicine, life and art, rooting science in the broad context of health and wellbeing.