

Royal Society response to Government's proposed vision for Science and Society

The Royal Society welcomes the opportunity to comment on the Government's proposed vision for Science and Society¹. A hard copy of all cited Royal Society reports will be forwarded to the Science and Society team at DIUS under separate cover.

The proposed vision is for 'a Society that is excited about science, values its importance to our economic and social well-being, feels confident in its use, and supports a representative, well-qualified scientific workforce'.

Such a vision complements a number of the Royal Society's strategic priorities² as we approach our 350th anniversary in 2010, and beyond. These are to:

- Invest in future scientific leaders and in innovation
- Influence policymaking with the best scientific advice
- Invigorate science and mathematics education
- Inspire an interest in the joy, wonder and excitement of scientific discovery
- Increase access to the best science internationally

Evidence does not suggest a crisis of public confidence in science per se³ but sometimes there is concern over particular scientific advances. However, historically decision makers have viewed science issues principally from a scientific perspective and while science clearly has a key role to play, social and ethical factors are also fundamental to the debate. Recognising this, the Society has led the scientific community in developing an innovative Science in Society programme that includes effective public and wider stakeholder dialogue. Such dialogue exercises have informed the Society's policy work, as well as that of other organisations and Government, so that policy makers and the science community are able to mitigate concerns or respond to aspirations. An example is the well received 2004 report by the Royal Society and Royal Academy of Engineering, *Nanoscience and nanotechnologies: opportunities and uncertainties* which successfully combined a technical appraisal of nanoscience and nanotechnology, an exploration of social and ethical issues, and public and stakeholder engagement. The core value of the programme is to support a responsive and responsible development of science and technology and this is now embedded within the mainstream of the science advice function of the Society; Science in Society will play a key role in the new International Science Policy Centre being developed for 2010 under *Influence policymaking with the best scientific advice*.

Considering science and society more broadly, under our goal to *inspire an interest in the joy, wonder and excitement of scientific discovery* the Society has a significant public programme of lectures, library talks and a Summer Science Exhibition. This programme of public events attracted over 9000 people in 2007. In addition, the Society also webcasts lectures live and they are also made available as a video on demand

¹ http://www.dius.gov.uk/speeches/pearson_sirgarethroberts_061107.html

² See <http://royalsociety.org/publication.asp?id=5624> for further information

³ For example, an OST/MORI (2005) survey showed 85% of people think science makes a good contribution to society (2% disagreed). An OST/Wellcome Trust (2000) report further revealed a high level of interest in science and an appreciation of the benefits it brings (84% agreed or strongly agreed with the statement 'Scientists and engineers make a valuable contribution to society'; 3% disagreed or strongly disagreed)

(library talks are available as a podcasts) allowing the widest number of people to access the public programme. In order to maximise the possible exposure to these events and activities and to reach those who are less likely to engage with them directly, we also seek to have them reported on in the media. This also applies to the science published in the Society's peer review journals.

In addition, we are seeking to *invigorate science and mathematics education*. For most people their school experience will form the bedrock of their excitement, appreciation and confidence in science and its application throughout the rest of their lives. The Society has taken the lead in establishing a partnership of key science community and science education organisations, SCORE (the Science Community Representing Education). The group comprises the Association for Science Education, Biosciences Federation, Institute of Biology, Institute of Physics, Royal Society of Chemistry, Science Council, and ourselves. It is devoting its collective resources to increasing the numbers of young people studying science at school and progressing to study science and engineering at further and higher education levels. SCORE has been invited by the Department for Children, Schools and Families to provide strategic leadership on issues related to enrichment and enhancement (E&E) in science education – activities which have traditionally been associated with engaging young people with science and forming more positive attitudes to science in society. The Advisory Committee on Mathematics Education (ACME) which operates under the auspices of the Royal Society has been given a similar role in relation to mathematics E&E.

Through its Partnership Grants scheme and Summer Science Exhibition, the Royal Society also gives young people of all ages the chance to have positive experiences of real science and work with real scientists, often outside the formal learning environment. Recognising the importance of confident and positive attitudes to science among all school leavers, the Society has supported changes to the science curriculum and qualifications that enable more young people to have a science education that improves their scientific literacy whether or not they intend to continue with science post-16.

Significantly here, science is considered together with engineering, technology and mathematics (STEM). DIUS's new vision for science and society might therefore also encompass mathematics and engineering along with science and technology, recognising their importance to 'science and society'.

The key to achieving any vision for science and society also requires the support and involvement of scientists themselves. The Royal Society (2006) report *Survey of factors affecting science communication* showed that whilst there is support amongst scientists and engineers for public engagement (science communication and public dialogue), there are institutional barriers that need to be addressed for those that want to get involved. Public engagement was also not seen as an important element of a researcher's career. The report recommended a more effective system of support and reward for those scientists, better recognition of the benefits of engagement and better co-ordination between Government, funding agencies, higher-education institutions and learned societies toward an agreed approach to public engagement on science and technology. In response, HEFCE, the Wellcome Trust and Research Councils UK established the Beacons for Public Engagement initiative which aims to promote excellence in public engagement and effect a culture change in UK academia⁴. The Society itself is currently developing training and other support mechanisms for scientists who wish to undertake public engagement activities, and for scientists and engineers to engage with education alongside our existing media and communication training courses. These are part of our goal *to invest in future scientific leaders and in innovation*.

⁴ <http://www.hefce.ac.uk/news/hefce/2007/beacons.asp>

Science and society is therefore embedded across the Society's work, and this is now happening in many other scientific organisations and for Government. A single vision for science and society is an opportunity to provide coherence in this area of varied activities with divergent motivations. However, such a vision should not negate this diversity; the benefits and limitations of different initiatives need to be better recognised and their place in the broader picture understood.

References

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