

# House of Commons Science and Technology Committee: Science communication inquiry

## Response by the Wellcome Trust

April 2016

### Key points

- The impact of science on people's lives is profound and wide-ranging. Effective communication and engagement activities are critical, and must reach as many people as possible.
- Successful communication and engagement should have a clear purpose, a specific target audience, be tailored towards particular objectives, and use a range of creative approaches.
- A better evidence-base is needed to determine which initiatives and interventions are most effective. The sector must work together to support high quality research to address this.
- Universities play a key role in supporting researchers to engage with the public and communicate effectively, which must continue. There should also be more reward and recognition for public engagement and communication practices.
- Inspiring young people to pursue STEM subjects and careers must start at primary age, with access to inspirational teachers and good careers advice.
- The Government should take a leadership role in science engagement and communication, joining up strategies across relevant departments and making science accessible to all.

### Introduction

1. The Wellcome Trust is a global charitable foundation dedicated to improving health. We are committed to supporting inclusive science engagement, communication and education activities so that as many people as possible have the opportunity to engage with, enjoy and build their understanding of science. We do this via a wide range of activities, including workshops, debates, exhibitions, and the creation of school resources, broadcast programmes, games and performances. We welcome the committee's consideration of how to make science accessible to all, and are pleased to share some of our experiences and learnings.
2. Each year, we spend around £20 million on public engagement activities on a range of scales. Our free visitor destination, Wellcome Collection, explores the connections between medicine, life and art through exhibitions and events. In 2015, we completed a £17.5 million redevelopment to transform the building with new galleries and expanded public spaces. We are also dedicated to making inspirational, high quality science education available to all young people.

### Consultation themes

#### Current trends in attitudes to and public engagement with science

3. We have just published the latest results of the Wellcome Trust Monitor,<sup>1</sup> a representative triennial survey of the UK public that looks at knowledge and attitudes

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<sup>1</sup><http://www.wellcome.ac.uk/About-us/Publications/Reports/Public-engagement/WTX058859.htm>

around science and biomedical research. In line with the Government-funded Public Attitudes to Science survey,<sup>2</sup> the Monitor found that public interest in science remains high. 77% of people say they are interested in medical research, and 63% of people want to hear from scientists about their research. However, the majority of people tend to come across science passively rather than actively, highlighting the value of embedding content across media such as television, radio and online platforms.

4. Fewer people visit science museums than other forms of cultural centres — 20% of people reported going to a science museum in the last year compared to 33% visiting a history museum and 30% an art gallery. However, the most popular attractions were zoos and aquaria (36%) and nature reserves (41%). This further demonstrates that the public has an interest in engaging in science-related activities, but not necessarily because they are badged as 'science'.

### **Increasing public awareness of and engagement in science**

5. The impact of science on people's lives is profound and wide-ranging, so science communication and engagement should aim to reach as many people as possible regardless of their demographic, level of interest, education, or any other distinguishing factor. It is critical that engagement and communication are not conflated as they have distinct purposes and require different approaches. No one method, and no one provider, will be able to reach all audiences or across the breadth of topics. A range of approaches is therefore necessary, meeting the needs of those who actively want to engage, and finding ways to engage those that don't.
6. Science communication and engagement should have wide-ranging appeal and be of high quality to maximise impact. They should make science accessible, possibly by using its relevance to everyday life as a method to spark interest, whether through tangible subjects like health or through areas of interest such as consciousness. More links should also be formed between science and the arts: they enrich each other and can open science to wider audiences. Wellcome Collection uses a range of themes for its exhibitions and events that lie across the arts and sciences, and plays on some of the more intriguing and fundamental questions about life. Audience surveys show that this approach engages a different demographic to traditional science museums.
7. Objectives for any engagement activity must be clear from the outset. Identifying and understanding the audience is vital for success, as the best method will differ depending on the target individuals or community. A major focus of science engagement is the exchange of information, but other types of impact should be considered and planned, such as attitudinal and behavioural changes, and importantly enjoyment and appreciation.
8. Decisions about the most appropriate methods of engagement or communication should be based on evidence, but the body of underpinning evidence in this space is weak. The sector should work together to address this, using targeted research questions about the best ways to achieve real engagement and understanding, in addition to the robust evaluation which is already commonly used.
9. One scheme aiming to address this is *Science Learning+*, a research funding collaboration established by Wellcome in partnership with the Economic and Social Research Council and the US-based National Science Foundation. The £9 million programme aims to better understand, strengthen and coordinate the role of informal science experiences and science engagement and learning. This is a good example of an initiative which aims to fill the evidence gap, but there is more to be done in this space.

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<sup>2</sup><https://www.ipsos-mori.com/researchpublications/researcharchive/3357/Public-Attitudes-to-Science-2014.aspx>

## Science communication and engagement through broadcast and media

10. Monitor data shows that the majority of the public are interested in hearing directly from scientists about their research, but tend to come across them via passive means, such as television, radio, newspapers and websites, rather than interacting with them directly. To maximise the chances for such encounters, science content should be embedded across a variety of outputs and channels, threaded through successful formats and programmes. *The Secret Life of Four Year Olds*, a recent award-winning Wellcome-funded programme on Channel 4, is a good example of this being done well.
11. While it is important to engage new audiences, we must also continue to cater for those who are already interested in science. Initiatives to serve under-engaged groups should not be at the detriment of support for successful existing activities such as science museums or specialised TV programmes. We would also like to see more neutral and open platforms that enable a range of organisations to share and pool high quality content, making it freely available to consumers on accessible sites.
12. Wellcome recognises the high quality of science reporters and correspondents in the UK, and the valuable role of good investigative journalism. Continued investment is needed from the broadcast industry for specialist science reporting to remain at a high level. Organisations like the Science Media Centre also play a key part in providing accurate and evidence-based information about science and engineering in the media.
13. Science communication is not only channelled through the media: there are a wide and increasing range of platforms which go direct to the audience, such as blogs, and these are a valuable way to reach the public. *Mosaic*, a Wellcome online magazine, publishes in-depth articles about biology and medicine affecting people's lives, health and society, and is a successful example of going direct to the readership. The articles are published under 'Creative Commons' licences and are reproduced in more mainstream media, such as *The Guardian*, *The Independent*, *BBC Future*, *CNN*, and *The Wire*. Over two years *Mosaic* articles have reached at least 27 million readers.
14. Universities should support researchers, both to engage with the media and with public audiences directly. A recent report *Factors Affecting Public Engagement by Researchers*<sup>3</sup> showed there have been improvements in the assistance offered to undertake public engagement over the last ten years — in 2013, Wellcome introduced a provision for public engagement costs on all grants. However, there is still work to be done and further support is needed. We have also perceived a decrease in support from many university communications departments for researchers to engage with the media.

## Encouraging young people to study STEM

15. Encouraging young people to consider STEM subjects and careers should begin as early as possible. Research conducted at King's College London through the ASPIRES project shows that by the end of primary school children can already feel that science is 'not for them'.<sup>4</sup> Government interventions such as *Your Life*, a campaign from the Department for Education (DfE) to encourage more students to study A level science, are welcome but must be done at an earlier age to enhance young people's experience of science within schools.
16. Inspiring teachers and good careers advice are crucial in encouraging young people to study science and enter science-related careers. The 2012 Wellcome Monitor

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<sup>3</sup><http://www.wellcome.ac.uk/About-us/Publications/Reports/Public-engagement/WTP060031.htm>

<sup>4</sup><http://www.kcl.ac.uk/sspp/departments/education/research/aspires/ASPIRES-final-report-December-2013.pdf>

demonstrates that young people are most encouraged to learn science by having a good teacher (58%), so all teachers should have access to high quality continuing professional development to enhance knowledge and improve practice. Students receive careers advice from family (67%), teachers (49%) and careers advisors (44%). Teachers and parents therefore need support to understand the range of science careers on offer if they are to give sound advice to their students and children. Careers guidance must also counter stereotyping of the profession and bust the myth that all scientists wear white coats.

17. Young people spend about 80% of their waking time outside school so informal science experiences are an important source of inspiration. However, it is critical to ensure that informal learning is accessible to all groups, including those from more disadvantaged backgrounds. The National Science Learning Centre's STEM Ambassadors scheme is a welcome means of linking teachers with opportunities for informal science learning, and joining up the efforts of the Department for Business, Innovation and Skills (BIS) and DfE.

### **Government strategies**

18. Science is a critical enterprise that has fundamental and wide-ranging impacts on people's lives. Government should take a leadership role in setting science engagement and communication agendas that make the topic accessible to all, with approaches that are joined up across departments, particularly BIS, DfE and the Department for Culture, Media and Sport (DCMS). The National Forum for Public Engagement in STEM — a partnership between Wellcome, BIS, DfE, DCMS, learned societies, major funders of engagement and significant engagement organisations — could be a key body to make this happen.
19. To foster public engagement with different demographics, the Government should utilise existing methods as well as considering innovative, new strategies. For example, the Wellcome initiative *The Crunch*, a programme to explore the connections between our food, our health and our planet, uses an experimental approach of dramatised dialogue events to link members of the public to policy making and future research.
20. Ongoing investment in public dialogue to inform policy is important. Its value is evident in the success of mitochondrial donation legislation: dialogue was an influential element in the process, embedded from an early stage with the findings feeding directly into Human Fertilisation and Embryology Authority advice on the proposed changes. More effective dialogue may have helped to avoid the failure of the care.data programme. *Sciencewise* makes a valuable contribution in this area but should remain focused and use a range of approaches connected to rigorous academic methodologies.