# Submission to House of Commons Science and Technology Committee enquiry on Science Communication

**Provided by AsSIST-UK the UK national professional association for social studies of science and technology; the UK based research network, Science in Public, and the international Public Communication of Science and Technology Network (PCST).**

## *Executive Summary*


- Twenty five years of research on science communication and public engagement has found many flaws in what we describe as the 'deficit model': the idea that the problems of science communication can be solved simply by providing more and/or better information to public audiences. Current best practice recommends a mix of dissemination, outreach, dialogue and participatory approaches, varying according to research context and community needs.
- We draw the Committee's attention to the wealth of valuable experimentation in science engagement across the UK research system that has happened over the past fifteen years, particularly the government's own Sciencewise programme.
- These challenges relate to all research including the social sciences and humanities: we recommend that the Committee extend their thinking beyond the traditional natural science communication silo.
- We argue that the Pathways to Impact plan (submitted within applications for public funds) offers an engine of change in how researchers and publics conceptualise, enact and assess the social and economic impacts of research. However, a broader set of impact definitions would help more engagement activities 'count', while at present researchers can struggle to demonstrate REF-able transformations of policy to practice.
- In education, we recommend the introduction of structured and sustained programmes moving beyond the traditional focus on 'gifted and talented' children, instead addressing information literacy and citizenship agendas for all.
- Further to this, we suggest a shift in focus: away from issues of media content and regulation, and towards practical questions of audiences, information literacy and embedding engaged research practice across the entire UK research base.
- The UK has a wealth of research and professional expertise in communications, participation and engagement which is widely regarded as world-leading. We are willing and able to assist the Committee as well as the wider research community in creatively addressing the challenges of science communication in the 21st century.

## *Submitting Organisations*

**The Association for Studies in Innovation Science and Technology-UK** (**AsSIST-UK;** www.assist-uk.com) is a professional body representing over 250 scholars working for many years undertaking research that has not only academic but also policy relevance. AsSIST-UK has been established to provide a new platform through which a more informed and constructive dialogue – both intellectual and professional – between social science/humanities scholars working in the science and technology field and how our work can contribute towards science, policy and civic society. The Association's membership includes expertise in science communication and engagement and the diverse ways in which these take place, and the impact they have, particularly whether these are beneficial for the community.

**Science in Public** (**SiP**; https://scienceinpublic.org) provides a central point of contact for academics and professionals interested in research about science, technology and medicine in the public domain. This includes research on the relationships between science, technology, medicine and society; public opinion and engagement; media and culture; and the broader public sphere. SiP fosters cross-disciplinary debate across the many disciplines addressing these topics, including science communication and education; science and technology studies; history of science; development, policy, media and cultural studies; humanities, literature and the arts.

**The Public Communication of Science and Technology Network** (**PCST**; http://www.pcst.co) is an international network of individuals active in producing and studying PCST. It sponsors international conferences, an electronic discussion list, professional development programmes and symposiums. The aim is to encourage discussion and debate across professional, cultural, international, and disciplinary boundaries.

## *Science Communication: Key Issues to Consider*

1. Twenty five years of intensive research on science communication and public engagement has found many flaws in what is now widely described as the 'deficit model': the idea that the problems of science communication can be solved simply by providing more and/or better information to public audiences. (e.g. http://pus.sagepub.com/content/23/1/4.short; http://oro.open.ac.uk/41889). Instead, current best practice recommends that researchers and institutions employ a mix of dissemination, outreach, dialogue and participatory approaches, varying according to specific research contexts and community needs (http://doras.dcu.ie/3629/1/framework_science_comm_models.pdf).

   This shift away from presumptions of public ignorance, towards an emphasis on dialogue and engagement was first adopted in policy by the House of Lords influential 2000 report on 'Science and Society' (http://www.publications.parliament.uk/pa/ld199900/ldselect/ldsctech/38/3801.htm), which we recommend the HoC S&T Committee revisit in the context of the current inquiry. There has been a persistence in 'deficit' forms of research communication: we believe that further work needs to be done to shift underlying cultures of research to incorporate engagement practices alongside traditional science communication.

2. Since 2000, the UK has seen a great deal of valuable experimentation in science engagement with a variety of approaches tried across the UK research system. The Sciencewise programme has been particularly valuable, and this should be maintained, expanded and made more easily available to practicing scientists. We believe that such an expansion will help researchers successfully address the challenges of multi and interdisciplinary research that are expected to receive greater emphasis from the new RUK.

   We refer the Committee to a series of reports and resources here: http://www.sciencewise-erc.org.uk/, plus a recent assessment of Sciencewise by Prof. James Wilsdon of the University of Sheffield: https://www.theguardian.com/science/political-science/2015/mar/27/lets-keep-talking-why-public-dialogue-on-science-and-technology-matters-more-than-ever. We call for stronger commitment from BIS to this agenda. Following the various expert groups that were set up under the 'Science and Society' banner, there has been little further action, beyond ongoing support for more traditional engagement events such as the British Science Festival and Big Bang Fair: this is reflected in the loss of an online presence for 'Science and Society'.

3. Recent research conducted through the Public Engagement with Research Catalysts (www.rcuk.ac.uk/pe/catalysts) and AHRC Connected Communities Programme (http://www.ahrc.ac.uk/research/fundedthemesandprogrammes/crosscouncilprogrammes/connectedcommunities) confirms that the challenges of science communication and public engagement relate to the entire research base (http://oro.open.ac.uk/43126; and https://connected-communities.org/index.php/project/researching-in-public-learning-and-legacy-in-the-connected-communities-programme). However, this is a debate which tends to be very STEM (science, technology, medicine and engineering) dominated. There is some evidence suggesting that social science and humanities (SSH) research faces specific challenges in public communication (https://kclpure.kcl.ac.uk/portal/en/publications/communicating-the-social-sciences%28ae33a807-3c42-4e86-93bb-b382f767ea91%29.html.).

   We recommend that the Committee consider questions of SSH communication in their Enquiry. While these have not been so widely discussed as in the STEM disciplines, there is a growing body of good practice, effectively collated by the LSE Impact of Social Sciences project

(http://blogs.lse.ac.uk/impactofsocialsciences). Recent initiatives by the British Science Association reflect this broadening of interest beyond the traditional 'science communication' silo (http://www.britishscienceassociation.org/news/science-not-just-for-scientists) as does the emergence of AsSIST-UK and its recent contribution to *Nature* on this theme: http://www.nature.com/news/recognize-the-value-of-social-science-1.19693.

4. BIS-sponsored programmes for schools focus on two key aims: increasing the number of school leavers studying STEM subjects at university; and addressing skills in citizenship. The Schools-University Partnership Initiative (http://www.rcuk.ac.uk/pe/PartnershipsInitiative) has shown that school-university engagement mostly focuses on a relatively small proportion of 'gifted and talented' children and young people, offering enrichment activities that connect with the Ofsted regime for outstanding schools. In short, scientists are failing the majority of children and young people by limiting the scope of their communication and engagement practices (http://oro.open.ac.uk/13058).

   We recommend the introduction of structured and sustained programmes connecting to the citizenship agenda for children and young people. In particular, we recommend the introduction of information literacy programmes developing skills in accessing, assessing, analysing and responding to the vast and diverse sources of information now available to audiences. To paraphrase the old adage: 'Give a child a piece of information and they'll be informed for a day; teach them how to access information in sophisticated ways and they'll have the core skills for making informed decisions forever'. The Extended Project Qualification does this by offering opportunities for young people to research issues that are relevant and meaningful to them, but not all schools offer the qualification. Those that do have different selection processes, resulting in the same emphasis; in effect, a self-selecting cohort of mainly gifted and talented students.

5. The introduction of the research impact agenda in 2010 has not been without controversy, not least in raising concerns about how quality is assessed. We argue that the Pathways to Impact plan (submitted within applications for public funds) offers an engine of change in how researchers and publics conceptualise, enact and assess the social and economic impacts of research. It is therefore noteworthy that this is the only element of a grant application where 'acceptability' is deemed a sufficient threshold for funding to be awarded (www.rcuk.ac.uk/documents/documents/ptoiexecsummary-pdf). Research Councils should follow the lead of STFC who are currently reviewing their public engagement programmes, and be encouraged to reflect on the criteria for consistently and rigorously assessing these plans. Research Councils should also introduce mechanisms for providing constructive feedback to unsuccessful applicants on how they could meet criteria of excellence in the future.

6. How do we ensure that researchers see engagement as central to their career development?

   a. The Beacons for Public Engagement Initiative and the National Coordinating Centre for Public Engagement recently identified learning and support as essential for embedding engaged practices in cultures of research (www.publicengagement.ac.uk/sites/default/files/publication/nccpe_bridging_the_gap_brochure_0_0.pdf). Training provision and support, which tend to focus on supporting postgraduate and early career researchers (there are far fewer programmes for research leaders), focus on the development of communication skills (e.g. www.nerc.ac.uk/latest/publications/resources/engaging-the-public). With one or two notable exceptions (e.g. http://www.centa.org.uk) there is less emphasis on supporting engagement. Research Councils should draw on learning from key bodies (e.g. Sciencewise, NCCPE, Public Engagement with Research Catalysts) to offer structured and sustained training for all grades of researcher across STEM and SSH disciplines, facilitating career progression.

b. A second factor identified by the Beacons for PE and NCCPE was reward and recognition for engaged research: www.publicengagement.ac.uk/sites/default/files/publication/nccpe_bridging_the_gap_brochure_00.pdf. In recent years this has led to the introduction of award schemes, which address short-term recognition. Long-term culture change requires universities to revisit their promotion criteria (also their recruitment and selection strategies, workload management strategies, and staff appraisal reviews). The Open University recently introduced promotion profiles (from Lecturer to Professor Grade 3) that offer a route in demonstrating sustained excellence in Knowledge Exchange (http://oro.open.ac.uk/44255). All universities should consider the introduction of criteria along these lines. We note that at present that outreach and engagement activities are often disproportionately conducted by PhD students and early-career staff. These people are struggling with sector-wide problems of job insecurity, and often contribute large amounts of time and enthusiasm to engagement in order to support their careers. Adequate support and recognition of this work, alongside creating new reward structures for senior staff should help rectify this situation. A 2013 report on Science and Society from the European Science Foundation contains further evidence and recommendations on this topic: http://www.esf.org/media-centre/ext-single-news/article/science-in-society-caring-for-our-futures-in-turbulent-times-967.html .

7. Debates about science communication are well-trodden ground, and we recommend that the Committee tries to think about how to add fresh insights and value to these debates by exploring questions of engaged research practices, culture change in universities, and support for children and young people in lifelong learning and citizenship. We suggest that focusing less on debates around media content and regulation, and more on practical questions around embedding science communication and public engagement in new structures for UK research would be helpful. The REF's focus on impact has given a boost to this agenda, but a broader set of impact definitions would help more engagement activities 'count', when they sometimes struggle to demonstrate REF-able transformations of policy to practice (http://wonkhe.com/blogs/consensus-and-conflict-what-do-responses-to-stern-tell-us-about-the-future-of-the-ref/). Similarly, we argue that the Research Councils would benefit greatly from better coordination and greater leadership in this area (there were very limited roles for publics, engagement or communication in the recent Nurse Review https://www.theguardian.com/science/political-science/2015/dec/01/nurse-review-where-is-the-vision-for-public-involvement).

   Finally, we suggest refocusing on media audiences by supporting citizenship and information literacy skills, as outlined in point 5 for children and young people, but extending these ideas to adults across diverse communities. We argue that thinking beyond traditional media to the multi-format, interactive and engaged public sphere we see developing in today's society would be much more productive.

8. The UK has a wealth of research and professional expertise in communications, participation and engagement which is widely regarded to be world-leading. We are willing and able to assist the Committee as well as the wider research community in creatively addressing the challenges of science communication in the 21st century.