Introduction

The University of Oxford is one of the world’s top universities. Our researchers engage with academic, commercial and cultural partners across the globe to stimulate high quality research and enable innovation through a broad range of social, policy and economic impacts. Recognising that diversity is a great strength, and vital for innovation and creativity, we aspire to build a truly diverse community which values and respects every individual’s unique contribution. While we have long traditions of scholarship, we are also forward-looking, creative and cutting-edge. Oxford is one of Europe’s most entrepreneurial universities. Income from external research contracts in 2014/15 exceeded £522.9m and we ranked first in the UK for university spin-outs, with more than 130 spin-off companies created to date. We are also recognised as leaders in support for social enterprise.

As an institution, we are committed to enabling, recognising and rewarding excellent public engagement with research. In 2015 we appointed our inaugural Academic Champion for Public Engagement and we are in the process of publishing our first five-year plan for embedding public engagement with research within the institution. We are firmly committed to public engagement and are strong advocates of the value that engaging with wider society brings to research and a research institution. We are pleased to contribute to this House of Commons Science and Technology Committee Inquiry in to Science Communications.

Executive summary

1. Public Engagement is an integral part of doing excellent research. It is valuable to society as a whole, research institutes and to individual researchers. Over the past decade, the infrastructure in the UK to support public engagement with research has developed, leading to some very good examples of public engagement activity.

2. However, the UK cannot afford to be complacent. More needs to be done now to cement culture change and resource activities. Whilst there are things that Government, funders and Higher Education Institutions need to do to support a sustained culture change where the value of public engagement it recognised by all, ultimately Government needs to send out a powerful message of the value it places on this activity. We all need to act now to capitalize on the current moment to create an environment where the UK’s world-class research sector is supported by an engaged, and a research literate and confident society. In order to achieve this, we would make the following recommendations for Government:

   a. The language needs to change: this is not just about ‘science communication’, but about two-way engagement between the non-academic public with all aspects of research.

   b. Advocacy for public engagement with research needs to be sustained.
c. The Government should set out clear expectations to researchers and Higher Education Institutions around public engagement with research, and set out ‘gold’ standards for activity.

d. A systematic national review of the impact of STEM interventions should take place so the impact can be properly assessed.

e. Reflecting research on the best time for interventions to increase the take-up of STEM subjects at a higher education level and as a career, support should be given to initiatives that engage younger people (i.e. before secondary school), and their influencers.

f. The way that subjects, particularly science, are taught in schools needs to be reviewed to include more about the uncertainty in research and encourage greater ‘science literacy.’

g. There should be more public consultation around key research themes.

h. There needs to be greater transparency around the consultation process to feed research into the development of policy.

i. Best practice guidelines for reporting of research in the media should be endorsed and promoted to ensure the balance, quality and accessibility of research coverage in the media.

j. Government Scientists should be empowered to speak more freely about research topics and findings, the implications and the uncertainties.

3. **Please note:** The Science and Technology Committee’s Inquiry refers to ‘Science’ communication. **However, it is our belief that these issues are applicable to ALL areas of academic research, and therefore we are addressing our comments as such,** with the exception of the question around the take-up of STEM subjects and careers.

**Response to outlined issues**

**Reflections on the balance of effort needed to increase public engagement in [science] research by ‘new audiences’ and by the ‘already interested’**

4. We would urge the Committee to not frame its inquiry using the ‘knowledge deficit’ model of the relationship between ‘the public’ and the research process. This model focuses on research dissemination (or science communication), is inherently one-way and one-sided, and is an outmoded as a way of understanding the relationship between science (aka research), the public and public policy making in democratic societies (see e.g. Nowotny et al, 2001 *Rethinking science*) and, hence, inadequate to the public *engagement with* research task. The research approaches and methodologies developed and now widely deployed in parts of the social sciences (and social science-led interdisciplinary research) and in parts of the medical sciences (e.g. through Public Patient Involvement methods) have moved on, crucially acknowledging that
publics constituted by shared concerns (e.g. patients diagnosed with a particular disease, or communities affected environmental hazards and risks) are knowledgeable publics whose first hand understandings, evidence and experiences have a valuable contribution to make to informing and improving the quality of research as well as it policy and societal impact.

5. Over the past decade a good infrastructure has developed to support public engagement with research, for example through the increase in profile of science festivals (for example Cheltenham (http://www.cheltenhamfestivals.com/science/) and Edinburgh (http://www.sciencefestival.co.uk/) and Science Centres (for example At-Bristol https://www.at- bristol.org.uk/ or the Life Science Centre http://www.life.org.uk/) as destinations, as well as the cross-over of science content in other cultural activities – for example at literary festivals or in museums. Indeed, Oxford University’s own museums, including the Ashmolean (http://www.ashmolean.org/) and the Museum of Natural History (http://www.oum.ox.ac.uk/) are an integral part of our public engagement activities.

6. The Research Excellence Framework 2014 revealed an exciting array of two-way transactions between researchers and various publics, and significant impacts that have arisen from the interactions (http://impact.ref.ac.uk/CaseStudies/).

7. A number of key organizations have been critical to enabling and supporting the development of a climate in which researchers can engage the public. These includes the Department of Business Innovation and Skills; the UK’s key public research funders (e.g.; HEFCE; Research Councils UK and the Wellcome Trust), the National Coordinating Centre for Public Engagement (https://www.publicengagement.ac.uk/) and the Academies. As a result, Higher Education Institutions (HEIs) have made good progress in reaching out to engage non-academics with research. However, there is still considerable scope to reach more ‘confident engagers’, and there are many sectors of society that are not currently engaged with research, at any level.

8. On the assumption that the infrastructure to support and provide opportunities for public engagement have gained critical mass and will continue to exist, we feel that priority for new activity should focus on engaging ‘new’ audiences. Whilst we recognize that engaging these audiences is harder and requires more resources we strongly believe that it is vital to engage as wider a section of society as possible in conversations about research, as these are important issues that affect all of our lives.

9. However, it is important to apply a caveat to this: the most important element of the outreach activity should be to engage the appropriate audience for the activity, and not just engage ‘new’ audiences for the sake of it.

Reflections on the quality, accessibility and balance of [science] research coverage in print and broadcast news and programmes

10. The quality, accessibility and balance of research coverage in print and broadcast media varies enormously. Whilst there are examples of high quality programmes (for example The Life Scientific, BBC Radio 4 http://www.bbc.co.uk/programmes/b015sqc7; and Five Live Science; http://www.bbc.co.uk/programmes/b043wvt9) there are still examples of very damaging, unbalanced coverage. Reporting on climate change is a good example of this, where the tendency to give air time to opposing views in order to provide ‘balance’ creates the impression
of an equal rift in scientific thinking, as opposed to coverage conveying the (significant) majority view.

11. Organizations like the Science Media Centre (http://www.sciencemediacentre.org/) and The Conversation (http://theconversation.com/uk) do great work to address the quality and balance of content in mainstream media, but more could and should be done. For example, the Science Media Centre has developed 10 best practice guidelines for reporting science and health stories (which would be applicable to all areas of research) see: http://www.sciencemediacentre.org/wp-content/uploads/2012/09/10-best-practice-guidelines-for-science-and-health-reporting.pdf. Anything that the Government could do to foster widespread adoption of these best practice guidelines by the media should be encouraged.

12. More generally, the Government, HEIs and public sector research entities should give vocal support for good coverage and be critical of poor or alarmist reporting.

13. Government Scientists must be were able to, and indeed encouraged, to speak more freely about research topics, the implications and the uncertainties.

14. A key long-term step to improving the dialogue around research is to change the way it is taught in schools. The rhetoric, particularly of science education, needs to convey the uncertainty in research. By understanding this, in time we may be able move away from the pressure of the media to only talk about research in definitive terms, and give the public more confidence in uncertainty.

Reflections on the communication strategies being taken to encourage young people to study STEM subjects in higher and further education, and to encourage those people towards STEM careers

15. There are a large number of national and local initiatives (e.g. The Sutton Trust Summer Schools http://www.suttontrust.com/programmes/uk-summer-school-2/ or The Royal Institution Masterclasses http://www.rigb.org/education/masterclasses) to encourage more young people study STEM subjects at higher and further education or to go on to a career in STEM. National monitoring is in place to track changes in the take-up of STEM subjects a various key points in the education (i.e. in year 9, GCSE, A Level and Undergraduate degree) and evidence from this shows that there has been an increase in uptake of these subjects. Further evaluation of key schemes demonstrates the value of particular interventions in this sphere (see STEMnet http://www.stemnet.org.uk/about-us/the-impact-of-stemnets-programmes/). However, we are not aware of a systematic national review of the impact of such interventions, which is necessary to really measure impact of the investment in these programmes, particularly in relation to long-term changes in careers.

16. However, such practically focused schemes can only go so far to have a significant and long-term impact on the take-up of STEM subjects in higher education and as a career. More needs to be done to address young peoples’ attitudes towards science and research from an early age (see ASPIRES research project http://www.kcl.ac.uk/sspp/departments/education/research/aspires/ASPIRES-final-report-December-2013.pdf). In particular, whilst the current focus tends to be on secondary school age students, much more needs to be done at an earlier age, and also with the influencers of young people, to have a significant impact on attitudes.
17. As an example of a way of addressing this, in the Mathematics, Physical and Life Sciences Division here at Oxford University we have created a digital toolkit and established a group of parent ambassadors to engage parents of under-represented groups.

18. Also, it is important to recognize the value of all research and to encourage young people to consider careers in all disciplines – this is not just a STEM issue.

Reflections on the extent to which public dialogue and consultation is being effectively used by Government in [science and technology areas of] policy-making

19. Whilst we are aware of various various public dialogues and consultations around research, we have no sense of the process involved or whether the conclusions of these conversations were taken on board in the development of policy. Rather, our unsubstantiated view is that individuals with personal connections tend to wield more influence in this area. This clearly says something in itself, and our foremost reflection on the process of contributing research to policy is that it is not open to all or transparent.

20. A further perception is the utilization of the outcomes of public dialogues and consultations varies depending on whether the conclusions support political directives – i.e. the purpose of consultations is to corroborate action, rather than inform policy-making.

21. More needs to be done to engage the public and researchers with existing consultations and to communicate more effectively about the outcomes of those consultations. In addition, we would support greater utilization of public consultations. Although we recognize that they are expensive, we feel that the long-term benefits justify the investment.

22. We support the valuable work that Sciencewise (http://www.sciencewise-erc.org.uk/) undertakes in this area. Ongoing funding of this programme is essential if the Government is committed to broader dialogue around the development of policy.

23. We have raise serious concerns about the proposed so-called ‘anti-lobbying’ clause (https://www.gov.uk/government/news/government-announces-new-clause-to-be-inserted-into-grant-agreements). The guidance says that grant payments cannot be used to ‘support activity intended to influence or attempt to influence Parliament, Government or political parties… or attempting to influence legislative or regulatory action’. This has the potential to affect the use of publicly-funded research outcomes in government policy-making and restrict the contribution of research to dialogue and debate around public policy. There must be an exemption for universities and researchers.

Reflections on the strategies and actions being taken by Government to foster trust of [science] research more widely

24. There is lots of evidence that good levels of trust exist between the public and research/researchers (for example The Wellcome Trust Monitor (wave 3) http://www.wellcome.ac.uk/stellent/groups/corporatesite/@msh_grants/documents/web_doc
25. However, this does vary by subject with there being less trust around more controversial areas of research. This would suggest these areas should be a particular focus for public engagement to ensure trust is built and concerns are addressed throughout the process. There are good examples of where dialogue approach has had a positive outcome – for example around nanotechnology, synthetic biology and mitochondrial transfer. However, ‘pumping out’ information, for example in terms of vaccines, Genetically Modified Organisms, nuclear energy and climate change, has not had similarly beneficial effects, and these are areas where there is most skepticism about the research. The ‘dip’ in trust around controversial areas reinforces the importance of academics engaging with the public – if you can see a ‘face’ it is easier to build trust.

26. Creating an environment of trust in research is intertwined with broader issues highlighted elsewhere in this response of media coverage of research, and the curricula in schools (as well as the culture of public engagement at Higher Education Institutions) to support it. The issue we raised in paragraph 14 above is particularly important in terms of trust: the rhetoric in education needs to emphasize the dynamic nature of research, so that the public do not view lack of certainty as a ‘problem’.

Reflections on the strategies and actions being taken by Government to foster public engagement with [science] research more widely

27. Whilst there are many examples of good practice in terms of public engagement with research, engaging the public with research is not yet embedded within the culture and practice of all public research institutions. In order to effect a culture change in this area, the Government needs to make a continued, and stronger, case for public engagement. Whilst initiatives like the Science and Society charter are good, they are not high-profile, and more needs to be done to address this through sustained communications. Establishing a clear ‘gold-standard’ for public engagement would also help to raise the quality of activity.

28. The Research Councils funding for public engagement, including most recently though the Research Councils UK Catalyst Seed Fund (CSF) (see http://www.rcuk.ac.uk/pe/embedding/), has both signaled the importance of this agenda and supported valuable activity. The 2015/16 CSF grant to Oxford has helped to leverage significant cash and in-kind support at Oxford for public engagement with research activities.

29. The current requirement of researchers to demonstrate impact of their research, both by many funders and by the REF process are powerful statements of the importance of public engagement. As such we would hope that public engagement continues to be included in the assessment process for distribution of public funding.

30. In terms of infrastructure, a key vehicle for engaging the public with research are the fantastic array of museums in the UK. Free access to these museums therefore further supports public engagement with research and should be retained. At a local level, institutions should be encouraged to work more with museums and galleries to embed public engagement with research in broader cultural experiences, rather than public engagement being something ‘owned’ by the university.
31. Open access is very positive step in terms of enabling the public to engage with research. However, ‘open access’ is not the same as ‘accessible’ and more needs to be done, both nationally by Government and locally by institutions, to raise the profile of, and access to, academic research. Perhaps requirements could be made for a lay summary of all open access documents?

32. The Science and Society Team in the Department of Business, Innovation and Skills is seen as a valuable champion of these issues within Government and we would support their continuation. However, as noted in the introduction, we would ask that the term ‘science’ is no longer used as a catch all for all areas of research, as this does not help communicate the broad and complex picture that exists.