



# *Factors affecting science communication*

REPORT ON QUALITATIVE RESEARCH

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The Royal Society*

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## EXECUTIVE SUMMARY

### Introduction

The "Factors affecting science communication" project was commissioned by The Royal Society, Research Councils UK and The Wellcome Trust (the clients) and has six aims:

1. To establish the relative importance of science communication to UK researchers
2. To examine the amount and type of science communication activities undertaken by UK researchers
3. To explore factors that may facilitate or inhibit science communication
4. To explore the extent to which researchers may wish to undertake further science communication
5. To explore the views of funders, senior academics, social scientists and other relevant groups on factors affecting research scientists engaging in science communication activities
6. To provide evidence about how universities, other research institutions and funders can promote effective science communication.

### Methodology

The project has two stages, a web-based survey with researchers drawn from Higher Education Institutes in the UK and semi-structured interviews with 50 individuals to explore, in greater depth, issues that emerged through the survey. The interviewees included respondents to the survey, senior people within academia and research funding bodies and science communicators/social scientists that have worked with scientists on science communication activities. The interviews were drawn from the main sample and did not include respondents from the sub-samples.

### This report

We have used the following terminology to identify respondents. "**Researchers**", "**scientists**" and "**engineers**" have all been used as terms for respondents to the survey who have been followed up by a telephone interview. We have used terms to describe the broad responsibilities of the institutional interviewees such as "**press officer**" for people working within a university press office, "**manager**" for people with administrative responsibilities in universities, "**senior academics**" for those with leadership and high level management responsibilities in universities, "**funder**" for those working for funding bodies and the self-explanatory "**social scientist**" and "**science communicator**".



## Academic Researchers

There are a number of core issues that almost all of the academic researchers that we interviewed raised. These issues could all be thought of as both barriers to, and drivers of, communication, depending on individual perspectives.

### The importance of communication

Many researchers regard communicating science as an important thing to be done, although not always as important as other tasks. There are a range of reasons cited for the importance of communicating science, these include:

- public accountability;
- a better informed public;
- generating support (financial, social, political) for specific areas of science and engineering
- recruitment of students.

### A culture driven by research

The most frequently mentioned factor relating to academic life was the research led culture in British academia. An academic career is dependant on research publications, it is "almost for altruistic reasons" that people communicate more widely.

The focus on bringing in funding means that other tasks are less valued, this applies to teaching as well as to public engagement, which is seen as on the margins of HEI's objectives. Many interviewees reported that institutional attitudes were a barrier to public engagement. Currently, public engagement is not recognised as part of an academic job.

A number of scientists and engineers reported being told that public engagement work could hinder their careers. On the other hand, some spoke of such work raising their profiles within institutions. Others talked of making new research contacts. Some scientists believed that communication work helps them to become better researchers.

Some junior researchers saw public engagement as less of a personal priority than other aspects of their work. They were also concerned, that relatively junior researchers would have less authority in public fora.



## The media

There is a range of views on the media. Media work is seen as **"daunting at first"**. Problems faced included the difficulty of coping with a **"media agenda"**. When discussing the weaknesses of the media people used phrases such as **"too much hype"**.

A number of interviewees highlighted the importance of journalists **"good science journalists are important"**. Some scientists valued the role of the media **"The role for journalists is to paint the picture"**.

With a primary role of corporate communication interpreted in a very limited fashion, one concern was that **"the remit from above [for press officers] can be too narrow"** and researchers thought there was little appreciation of the corporate value of good publicity from individual research projects.

## Becoming a target

Scientists who communicate becoming **"a target"** was mainly mentioned in the context of animal research and the possibility of violent responses from **"extremists"**. More generally, there was recognition that public engagement takes a lot of preparation and those who get involved are **"taking a risk by making themselves public"**. This can be detrimental to their careers, because as one interviewee said, "more time on popularisation means less time on science" this in turn makes someone **"less of a scientist"**.

On the other hand, one scientist said **"I admire people [who] communicate"**. Some highlighted the link between a general ability to communicate and the skill to teach in an inspiring creative way.

## The need for a strategy

The potential tensions between the requirements of funders and institutions led to suggestions for a strategy to guide public engagement work. Some wanted to see this at the national level, others talked about funders and individual HEIs.



## How research funders can help

Some scientists and engineers have identified an increased demand from funders for public engagement work to accompany research activities. However, one interviewee warned against too much of this 'stick' approach. Separate funding for public engagement is a much more positive 'carrot', **"Employers are interested when there is money brought in"**.

The competitive nature of current public engagement grant models was questioned as this can demanded a lot of early effort with no guarantee of funding. Some scientists saw public engagement as crossing traditional discipline boundaries. **"There is increasing multi-disciplinary funding in research, this should be reflected in public engagement"**. It was suggested that there could be marketing of **"joint schemes"** perhaps through a **"road show"**.

Funding alone is not enough, funders can also provide a variety of other support mechanisms, summed up by one interviewee as **"an infrastructure"**. Many researchers wanted to see training opportunities, but did not think that the options currently available were accessible.

## Conclusions

There are scientists and engineers both willing and able to take on public engagement work. Many see it as important and perhaps even a duty, although not one that all researchers should be forced to undertake. The biggest constraint on activity is that it is not seen as part of the research job, much less an important part of the job. In large part this perception is driven by institutions' (and the research community's) pre-occupation with research and publication rather than education.



## INSTITUTIONAL PERSPECTIVES

### A culture driven by research

The overwhelming influence of the Research Assessment Exercise is best summed up by one interviewee as **"the only game in town"**. The dominance of research is a cultural issue across all of academia.

### The influence of funders

One institution has responded to the drive from funders for more public engagement as part of research grants by starting to set up systems to help researchers develop and deliver wider dissemination plans and engagement opportunities.

Many people believe that it is **"unreasonable to expect that all scientists can communicate"**. One interviewee suggested that public engagement funding regimes currently targeted at individuals could be re-focused to support institutions or departments.

Funders are aware that their research grants provide a powerful tool for stimulating public engagement activity. However, they are also aware that they can be seen as simply making additional demands and funders are looking for more ways to support researchers.

### The structure of the HEIs

A number of institutions have devolved structures, this means that it can be difficult to set up, and monitor, centrally developed strategies. Levels of activity often vary within different institutions by faculty or department and there may be no way of assessing the overall level of activity. This devolution and the **"isolationist"** tendencies of individual researchers can make it difficult for funders to bring public engagement opportunities to the attention of scientists and engineers.

Institutional leadership is important, if no-one at the top of an institution regards communication as serious then it will always be a fringe activity. However, middle managers can dilute the messages given out by senior academics.

University press offices were believed to have a tendency to focus on defending the institution, rather than working across a broad front of press, PR and public affairs work. There was also a suggestion that communicating science and engineering required **"suitably skilled"** people, who were not necessarily easy to find.



## **Recognition of non-research activities**

Similar local initiatives to the National Teaching Fellowships are being developed. It was suggested that science communications might be encouraged in the same way.

The schools aspect of public engagement was seen as fitting within universities widening participation agenda which is funded through the university funding formula and the strategically important subjects' agenda.

It was also suggested that public engagement might be a natural extension to the knowledge transfer function.

## **Conclusions**

Institutional players recognise that the culture in large parts of academia is dominated by the research agenda because of current funding structures. Public engagement does not bring in significant funding, it is not therefore a high priority activity.

Low priority does not mean unimportant. Encouraging and recognising non-research aspects of academia such as teaching and knowledge transfer are ways of broadening institutions' horizons and open up recognition of public engagement.

Funders can influence the behaviour of both individual researchers and institutions. However, their influence is somewhat remote and individual institutions and their managers are bigger influences on researchers. Funders see their role as providing support and encouragement for the willing communicator, but some institutional players question whether funding mechanisms that reflect research funding models are appropriate for public engagement work.





## 1. INTRODUCTION

The "**Factors affecting science communication**" project was commissioned by The Royal Society, Research Councils UK and The Wellcome Trust (the clients) and has six aims:

1. To establish the relative importance of science communication to UK researchers
2. To examine the amount and type of science communication activities undertaken by UK researchers
3. To explore factors that may facilitate or inhibit science communication
4. To explore the extent to which researchers may wish to undertake further science communication
5. To explore the views of funders, senior academics, social scientists and other relevant groups on factors affecting research scientists engaging in science communication activities
6. To provide evidence about how universities, other research institutions and funders can promote effective science communication.

The first stage of the project was a web-based survey with researchers drawn from Higher Education Institutes in the UK. That work is described in a companion to this report.

### 1.1 Methodology

#### 1.1.1 Academic researchers

During the survey, respondents were told that some follow-up work would be undertaken with a selection of scientists and engineers and asked to provide contact details if they were happy to be contacted by People Science & Policy Ltd (PSP) staff. Within the survey there were a number of open-ended questions. The responses to these questions were reviewed to identify respondents making particularly interesting points. If these respondents had also provided contact details they were added to a long-list of potential interviewees.

Taking into account factors such as grade, length of time in research and apparent attitude towards science communication a final short-list of 73 scientists and engineers was constructed. Members of the short list were initially contacted by telephone and sometimes followed up by e-mail, with a view to completing interviews over the telephone.

In order to minimise the disruption to the practising scientists and engineers, the telephone interviews mainly picked up the interviewee's responses to the survey, so that the interview would be relevant and relatively short. However interviews were conducted against a backdrop of a generic "**topic guide**" that set out key issues that the clients wished to explore.

At the time of drafting this interim report 27 interviews had been completed with survey respondents.



### 1.1.2 Institutional perspectives

In addition to survey respondents, this qualitative work explored the views of other players within science policy and science communication. By talking to funders, senior managers, science communicators and social scientists we have been able to access wider views on science communication. In particular we have been looking for examples of cultural or institutional barriers to communication and evidence of strategies that have been deployed to overcome these barriers.

In discussion with the Royal Society a long list of organisations and individuals was developed. Relevant individuals in the organisations were approached by telephone and/or e-mail and invited to take part in a telephone or face-to-face conversation, whichever was most convenient to them. Senior academics were selected from universities that had agreed to take part in the survey work as they would be familiar with the project. The hope was that this familiarity would help to gain access to busy diaries.

At the time of drafting this interim report 14 interviews had been completed with representatives of the various wider groups included in this broad description of "**other key players**".

## 1.2 Qualitative research

The second stage of the project was to undertake semi-structured interviews with 50 individuals to explore, in greater depth, issues that emerged through the survey. The interviewees included respondents to the survey, senior people within academia and research funding bodies and science communicators/social scientists that have worked with scientists on science communication activities.



### 1.3 This report

Interviews have been undertaken with a cross-section of people, with different backgrounds and different attitudes. In analysing and reporting these interviews we have constructed a landscape of key issues. Within each issue, there will be people with different, sometimes diametrically opposed, views. This report describes the spectrum of views, but does not comment on their prevalence. Prevalence is assessed through the quantitative analysis of the survey, whilst this report seeks to set out the deeper thought processes that sit behind the survey responses and to provide added context with the feedback from institutional players.

This is an interim report and we intend to complete approximately ten more interviews before drafting a final report. These interviews have been held back so that emerging evidence from the survey work can be explored with both survey respondents and other players.

We have used the following terminology to identify respondents.

**"Researchers"**, **"scientists"** and **"engineers"** have all been used as terms for respondents to the survey who have been followed up by a telephone interview. We have used terms to describe the broad responsibilities of the institutional interviewees such as **"Press office"** for people working within a university press office, **"manager"** for people with administrative responsibilities in universities, **"senior academics"** for those with leadership and high level management responsibilities in universities, **"funder"** for those working for funding bodies and the self-explanatory **"social scientist"** and **"science communicator"**.

In the final report, attribution and transparency in reporting the methodology will need to be balanced to ensure confidentiality for the interviewees. For example if a small number of social scientists have been interviewed, listing out all interviewees, could allow responses to be attributed to particular individuals.

The next section focuses on researchers' views and section three picks up institutional perspectives, finally section four draws together some emerging conclusions.



## 2. ACADEMIC RESEARCHERS

There are a number of core issues that almost all of the academic researchers that we interviewed raised. These issues could all be thought of as both barriers to, and drivers of, communication, depending on individual perspectives. These core issues were:

- The importance of communication
- A culture driven by research
- Career development
- The media

Other issues that seem particularly important that were raised by a number of interviewees were:

- Becoming a target
- The need for a strategy
- Ways in which research funders can help

The rest of this chapter discusses each of these issues in turn.

### 2.1 The importance of communication

Many researchers regard communicating science as an important thing to be done, although not always as important as other tasks.

There are a range of reasons cited for the importance of communicating science, these include:

- public accountability;
- a better informed public;
- generating support (financial, social, political) for specific areas of science and engineering
- recruitment of students.

#### 2.1.1 Public accountability

At the most basic level some researchers said that there was the need to **"convey the use of taxpayers' money"**.

However when some people talked in terms of accountability, it was tied to visibility, one researcher spoke about the fact that it was a shame that many people heard about science only when **"news explodes"**. This researcher said **"It is our duty almost to stand up and say 'this is my science'"**.

Another researcher echoed this by talking about the relative invisibility of science and scientists, suggesting that science and technology **"cannot afford to stand on the sidelines"**. There was a concern that **"other people are talking about the effects of what we do", "there are discussions going on, but we're not taking part"**.

Another researcher phrased a similar point rather differently, saying that scientists had to be responsive to those around them **"You need to be able to respond to 'how do you know that?'"** Another said that it is **"dangerous for science to be seen as a closed church"**. The counter argument to this was that **"science is not a subject that has to explain itself"**.



Sharing enthusiasm was also referred to as a part of accountability to explain why scientists do what they do **"Science is done by people who are besotted with what they do"**. Another scientist talked of being **"evangelical"** and enjoying seeing other people **"enthused and excited"**.

Some people engage with more direct stakeholders and in fields such as medical research this can lead to more direct accountability. One researcher talked in terms of stakeholders being **"fed up with inappropriate research"**. This researcher spoke of the importance of engaging affected people in the setting of research agendas. However, this approach is not felt to be appropriate in all circumstances. Some people were nervous of public opinion being used to steer research agendas. In particular the manipulation of research by political pressure that was notionally driven by public opinion **"I don't want to see things being driven by a politician saying 'we must do that'"**.

It was also recognised that it would not be desirable for communication work to be compulsory for all researchers. Some would simply not have the appropriate skills and their abilities should be channelled in more useful directions.

### 2.1.2 A better informed public

Interviewees brought up two main issues in this area; one was to have a generally better informed public, the other was to inform people specifically about the interviewee's own work.

When talking in general terms the interviewees were concerned about raising the profile of the positive impacts of science. **"We've got to let people know about the advances"**. One researcher in the life sciences spoke in terms of bringing people in to **"show them what we do"** to highlight how science is **"involved in your everyday life"**. One talked of raising the profile of publicly funded work **"People don't understand, and why should they, that it was not companies, but Government that funded a lot of the work"**. One interviewee suggested that the depth and complexity of modern science prevented a general understanding, that could be achieved in the past **"in the Victorian era"** when it was possible to **"see more"** of contemporary science.

One potential benefit of a better informed public was said to be the ability of individuals to make decisions about issues rather than the **"dangerous situation"** of a small proportion of the population forcing a narrow focus.

When talking in more specific terms, the interviewees were highlighting what they saw as particular image problems within their own fields. One researcher working in the area of organ donation and research on biomedical samples spoke of the imperative of **"transparency"** in order to provide **"confidence"** amongst potential donors. Another talked of the need to raise awareness of the importance of basic research that does not lead to **"an immediate return"**. Another said **"the conversation dies [when I mention mathematics]"**. Another spoke of people misunderstanding their **"work and motives"**.

A better informed public was viewed as a means to a positive end for science and engineering by engendering support.



### 2.1.3 Generating support

A number of people referred to generating support for science and engineering. For some this was a direct link to research funding. For others it was about generating the social and political support that would create a more receptive environment.

At a local level this can mean engendering **"civic pride"** by highlighting the national and international status of institutions. One researcher spoke of wanting **"this university to be seen as relevant and useful to the people in the region"**.

Raising the profile of a subject was said to be a way to **"apply pressure to Government for funding"**.

A receptive environment was thought to be crucial for the ongoing strength of scientific research. One interviewee spoke of the importance of the public understanding the role of scientific advice in policy-making. In this context the hope was expressed that an understanding of the value of science in debates might lead ultimately to the **"acceptance of policies"**. The environment in which scientists saw themselves operating led one to say that **"[we are] always up against the Frankenstein argument"**.

### 2.1.4 Recruitment of students

A frequently mentioned benefit of communicating the nature of modern science and an understanding of its place in society was the recruitment of future students. Especially in the context of **"student numbers are dropping"**.

One researcher talked of a potential crisis with insufficient people to carry science forward in the UK. This researcher suggested that US academia was already reliant on overseas talent and that the UK was generally the first European country to follow US trends. This person saw a shortage of home-grown talent as a strategic weakness. Conveying the **"excitement"** of science and engineering was mentioned by some.

A researcher in the chemical sciences talked of the drive behind schools work as boosting the undergraduate intake (dealing **"with the feedstock"**). This blunt assessment dictated an extremely professional approach, as the potential students are in the care of other institutions (the schools). This means that the offering made to schools must meet their agenda as well as that of the scientists **"offer them something that meets their needs"**.

Some saw working with schools as among the easier engagement options **"they are open to ideas"**, but some age-groups were seen as potentially more difficult than others **"up to the age of 11 or 12 children are more willing to ask questions, after that they are more wary of peer pressure"**. Some researchers built further on this saying that it is **"hard to find the right levels"** for different ages of school children.

One interviewee described education as a **"continuum"** and suggested that there was a role for Research Councils to provide support at **"the interface"** between higher and school-based education.

One researcher cited a fear of **"dumbing down"** for school children, for some young people, challenging them is important **"normally when you challenge, they rise to the response"**.



## 2.2 A culture driven by research

The most frequently mentioned factor relating to academic life across the board and thus a major issue in public engagement was the research-led culture in British academia. The following quotes illustrate this:

**"Research funding is for journals, any other time has to be paid for somehow"**

**"Scientists are judged by their ability to attract grants."**

**"Anything else that detracts from research funding reduces regard."**

**"Build a career on hard research"**

**"The RAE is a key source of pressure"**

**"People are incredibly anxious about the RAE"**

**"One of the drawbacks of [research] funding is the drive for**

**papers rather than the wider dissemination of the role and importance of the subject"**

An academic career is seen as so dependant on research publications, it is **"almost for altruistic reasons"** that people communicate more widely. **"[I] will always be judged on research outputs"**.

The drive to get research funding is **"from on high, the top of the university"**.

### 2.2.1 Teaching

This focus on bringing in research funding means that other tasks are less valued, this applies to teaching as well as to activities such as public engagement. People said **"Teaching is held in low regard"**, **"[we are] hired to teach, but only promoted on research"**, **"A high teaching load is seen as a bad thing"**.

One interviewee summed it up thus, saying that reader and senior lecturer are on the same pay scale yet **"you get promoted from senior lecturer to reader only on research"** or as it was described, by being **"good at only part of the senior lecturer job"**.

### 2.2.2 Public engagement

Public engagement work is viewed as being on the outer margins of the objectives of most institutions. It is thought to be something that is nice to see happening but is rarely driven by the institution. **"They'll say its really wonderful"**, **"you'll get brownie points, but you don't get any more time"**.

One interviewee suggested that the task ahead was daunting. **"It is about changing the culture of academia"** and that is **"a massive challenge"**.



### 2.2.3 A journal

One interviewee suggested using the research culture to promote public engagement through the development of an appropriate peer reviewed journal that focused on the practicalities of public engagement. This could cover both lessons learned and the way that people interact with technology in public environments. While this is an interesting suggestion a drawback is that any new journal would lack 'weight' and thus still not help careers in the same way as publication in highly cited journals.

## 2.3 Career development

Public engagement is seen by some as a hindrance to career development, others see it as a potential way of standing out from the crowd and advancing a career.

### 2.3.1 Employers

Given section 2.2, it is no surprise that many interviewees reported that institutional attitudes were a barrier to public engagement. **"The main issue is that you want your employer to recognise what you do and possibly reward it"**.

Public engagement is not being recognised as a part of an academic job and this led to the following sentiments. **"A certain amount is done on goodwill, but ultimately goodwill falls down when it is not recognised"**. **"It's not my job, it's not what I'm paid for"**. One scientist spoke for many saying **"a lot of this stuff happens in our spare time"**.

Funders have played a role in stimulating institutions, one scientist reported that **"funding now comes with strings"** so there is pressure from within the institution to do public engagement work to ensure that grant criteria are met.

### 2.3.2 Peers

A number of scientists and engineers reported being told that public engagement work could hinder their careers. One junior researcher said that peers would say **"He is doing that because he could not build a good enough research career"**. Public engagement was felt to be seen as **"a second best if you can't make it in the academic system"**.

One interviewee reported being told by senior colleagues that **"it won't do your career any good"**. In similar vein, one, now, relatively senior female researcher said **"I have been gently warned by senior colleagues that 'if you are female [in a certain topic] then you need to avoid light and fluffy topics'. Public engagement is seen as light and fluffy."**

Outreach and public communication are seen to matter less because **"academic authors' careers and prestige rely on where they publish - not who reads it"**.





### 2.3.3 Benefits

Not all of the interviewees saw public engagement as a hindrance. Some spoke of raising their profiles within institutions and benefiting from this. One summed it up thus **"exposure helps"**.

Others talked of creating new research contacts, a company had approached one interviewee to explore collaboration possibilities because people had **"read about your stuff in a newspaper"**. Another example cited was the *café scientifique* environment where new contacts, spin-offs and overlaps are identified through **"chance connections"**.

#### 2.3.4 Becoming a better researcher

Some scientists believed that communication work helped them to become better researchers. Having the depth of insight needed to communicate effectively with non-experts meant that these scientists could make new inroads. "People who communicate effectively, contribute more to the subject".

One researcher said that experience of engagement activities **"has changed the way I think about things"**.

### 2.3.4 Seniority

Two issues associated with seniority have emerged. Given the drive to generate the research work that would underpin their career, it is not surprising that some junior researchers saw public engagement as less of a personal priority than other aspects of their work. There was however also an additional concern, one researcher voiced the opinion that their view would not be **"respected"**. Another added that **"People with greater experience have greater depth and breadth"** and were thus more appropriate representatives of the scientific endeavour than relatively junior researchers who would have less of a hinterland upon which to draw in public fora.

## 2.4 The media

There is a range of views on the media, one relates to distortion, but others reflect more positively on a profession with a valuable role to play. One scientist spoke for a number when saying that media work is **"daunting at first"** another described feeling **"woefully unprepared"** when interviewed by journalists and this type of experience undoubtedly colours some researchers' perspectives.

### 2.4.1 Distortion

A number of scientists and engineers spoke of encountering a **"media agenda"** and the difficulty of coping with that. **"It starts as clear in your own mind, but gets filtered and distorted"**. Another appreciated the work of journalists saying that they are **"skilled people"** but again felt that the journalist's agenda can make like difficult adding, **"I would like to trust them"**.

One interviewee suggested that scientists should be seen to call for accuracy and/or balance, and make sure that they used the **"mechanisms available"**, such as the Press Complaints Commission.



### 2.4.2 Hype

When discussing the weaknesses of the media people used phrases such as **"sensationalisation"** and **"too much hype"**.

However, some scientists suggested that hype was not simply down to the work of journalists, although the perceived desire to break big stories is a factor. It was suggested that some scientists were guilty of overplaying results and rushing to create publicity in attempts to secure further funding. One social scientist commented on the importance of **"warranted knowledge"** and the critical quality control role of peer reviewing.

Against this background it was suggested that journalists needed to be careful of excessive deference, they needed the skills, experience and contacts to be able to **"challenge and balance"** the information they get.

### 2.4.3 Positive perspectives

A number of interviewees highlighted the importance of journalists, **"good science journalists are important"**. One described them as being **"pro-active"** and because of this contrasted them favourably to university press offices and Research Councils.

Some scientists valued the role of the media because of the different skills they brought **"The role for journalists is to paint the picture"**. This different set of skills led some to suggest that there should be a joint responsibility between funders and institutions to provide access to journalists to meet a need for **"professionals who can support researchers"**.

### 2.4.4 Research funders

One scientist suggested that researchers have a responsibility to communicate with their funder. If that funder then wants to publicise the work or justify the funding then **"that is up to them"**.

Others took a different view, wanting funders to help them to interact with the media. A number were aware of opportunities, including training, but felt that funders tended to be reactive. **"There are mechanisms but it is down to one's own initiative"**. **"Research Council functions are distant from people at the coalface"**



### 2.4.5 University press offices

University press offices also provoked mixed feelings. One concern was that **"the remit from above can be too narrow"** with a primary role of corporate communication interpreted in a very limited fashion, with little appreciation of the corporate value of good publicity related to individual research projects.

Others suggested that internal mechanisms are not readily apparent to get support **"you have to hunt it down"**. **"Here press officers tend to sit down and wait for people to come to them"**. One researcher contrasted their institution's press activity unfavourably with the Hubble Space Telescope work **"done by professionals"**.

However, criticism was by no means universal. One researcher related a very positive experience, the university press office had arranged for a TV journalist to train a handful of staff. This had been **"bloody brilliant"** and had provided useful information about keeping on **"your track, not the journalist's agenda"** as well as practical tips on appropriate dressing.

## 2.5 Becoming a target

### 2.5.1 Animals

The concept of scientists who communicate becoming **"a target"** was mainly mentioned in the context of animal research and the possibility of violent responses from **"extremists"**.

One researcher suggested that a lack of understanding of what lies behind modern living leads to being asked by people **"Do you really do that?"** This scientist suggested that **"we're all sheltered from the realities of life"**.

Some highlighted that the reluctance of scientists to engage in communication about animal research, while understandable led to unbalanced public debate that could make the situation worse. **"Most people are not prepared to put the perspectives, so balance is missing"**. This muted criticism of scientists as a whole, did not stop others from saying **"I regard them [scientists who communicate] highly"**. There was recognition from peers that it takes a lot of preparation and they are **"taking a risk by making themselves public"**.

### 2.5.2 Peers

Some interviewees believed that scientists and engineers who do a lot of public engagement work are setting themselves up as targets in front of their peers. One suggested that high profile communicators are **"not always real scientists"**. Another said that some academics who communicate are in danger of over-simplifying and **"spinning"**, they are **"not as objective as they should be"**. There was a suggestion that scientists need to be **"proper scientists"** and **"be clear about evidence and speculations"**.

One interviewee said that **"more time on popularisation means less time on science"** this in turn makes someone **"less of a scientist"**. This interviewee thought that it is **"important that communicators have a grounding in science"**.



One researcher talked of a sense from peers who don't get involved in media work that they want you to think that it is a **"sell-out"** there is an implication that it is **"self-publicity"**.

Again, however, there are two sides to the story. One scientists said **"I admire people [who communicate], there is so much potential for things to go wrong in the public eye"**. Others said **"[we] should support the courage of these people", "I'm impressed by how skilled they are"**.

Some highlighted the link between a general ability to communicate and the skill to teach in an inspiring creative way. Using public engagement and other outreach as a way to develop teaching was thought to be a valuable spin-off.

## 2.6 The need for a strategy

The potential tensions between the requirements of funders and institutions led a number of scientists to talk in terms of the need for some strategy to guide public engagement work. Some wanted to see this at the national level, others would be satisfied with an institutional level.

### 2.6.1 Institutions

One interviewee was involved in the development and implementation of a local strategy. This had required an additional input of time initially, but once support systems are in place then the time of volunteers can be used more effectively. It also encourages input from colleagues, not just through their own time but because they will allow their students to have time to contribute.

### 2.6.2 National

There seemed to be little concept of an overall strategy. The exception to this appeared to be in Scotland, where some clear policy drivers were helping to set the agenda. More than one interviewee referred to **"a Scottish Executive priority"** with regard to different elements of public engagement.

### 2.6.3 Learned societies

One interviewee described the difficulty of persuading local volunteers in the branches of learned societies and professional institutions to take a strategic view. This scientist suggested that there are windows of opportunity with different leaders of these bodies. Research funders and other proponents of public engagement needed to have a strategy for taking advantage of these windows and drawing in these organisations, with their widespread networks.



## 2.7 How research funders can help

Some scientists and engineers have referred to the increasing need for some form of engagement work to accompany research activities. However, one interviewee warned against too much of the 'stick' approach **"Funders could make it [public engagement] a requirement"** however this would be **"unpleasant and counter-productive"**. Many wanted to see appropriate carrots.

### 2.7.1 Funding

Funding for public engagement was seen as a principal tool available to research funders. However, scientists talked in terms of the impact on their institutions. "If there was some money in outreach that institutions could profit from, this would provide incentives for institutions". "An overhead margin on public awareness grants makes it attractive to universities". "Employers are interested when there is money brought in".

Some researchers acknowledged that there is an increasing amount of financial support available from research funders, but there were suggestions of a need for **"a range of funding opportunities"**.

One researcher questioned current grant models. Their competitive nature and the frequent requirements for partners and identified audiences, demanded a lot of early effort with no guarantee of funding. While this is the same as research funding, there is a difference, because hopes and expectations have been raised with partners and potential audiences. A rejection sends a bad message **"[I have] been made to look an idiot with partners"**. A suggestion was that a similar model to the EPSRC's **"Ideas Factory"** could be used, in which ideas are developed in a workshop environment with appropriate experts and funding allocated to take the best ideas forward. This would mean that partners could be approached with more confidence **"I don't want to get people upset and let them down"**.

In similar vein another scientist said that **"research grants are easy to construct, we know the people, for public engagement you go in cold"**.

### 2.7.2 Public engagement infrastructure

Funding alone is not the only thing that funders can provide. People talked of a variety of other support mechanisms, summed up by one interviewee as we **"need an infrastructure"**.

Some examples of components of the infrastructure that were mentioned are **"mentors"** the provision of access to **"technical help"** for example animators and resources to **"hire science communicators to develop materials"**.



### 2.7.3 A joined-up approach

Some scientists saw public engagement as crossing traditional discipline boundaries. "There is increasing multi-disciplinary funding in research, this should be reflected in public engagement".

It was suggested that there could be marketing of **"joint schemes"** perhaps through a **"road show"** to promote awareness and provide local access. **"E-mail lists and discussion groups"** were cited as useful places to advertise. If something arrives in the in box **"[I] have to make a decision about whether to delete it or do something"**.

### 2.7.4 Training

One researcher described a media experience as being **"not quite on the right wave length"**. This scientist thought that appropriate training would have helped. Yet someone else thought that you **"need natural flair"**, experience can build **"confidence and self-belief"**, but training alone will not be enough it is important to **"believe in it"**.

Others who were in favour of training opportunities did not think that the options available were accessible. One scientist said that public engagement needs **"a more creative approach and different skills"** this interviewee said that they would like to acquire these skills but did not have the time. Another said that could not get to the courses run by their Research Council because of conflicting priorities; a situation exacerbated by working part-time. Another researcher suggested that funders should take training out to researchers, using **"short targeted sessions"** in a **"road show"**, and liaise with university press offices to stimulate **"collaboration at a local institutional level"**.

## 2.8 Conclusions

There are scientists and engineers both willing and able to take on public engagement work. Many see it as important and perhaps even a duty, although not necessarily one that all researchers should be forced to undertake. Yet the biggest constraint on activity is that it is not seen as part of the job, much less an important part of the job. In large part this perception is driven by institutions' (and the research community's) pre-occupation with research and publication rather than education.

Research funders can provide help at the margins, but the key relationship that scientists and engineers in academia have, is with their employer. 3.3 The structure of the institutions



### 3. INSTITUTIONAL PERSPECTIVES

One common feature of the interviews with the disparate groups within this element of the work, was the reported importance of the Research Assessment Exercise and the culture it fosters within academia. Other issues also emerged, these include:

- The influence of funders;
- The structure of the institutions;
- Recognition of non-research activities; and
- Knowledge transfer.

#### 3.1 A culture driven by research

The overwhelming influence of the Research Assessment Exercise, on institutions that undertake research, is best summed up by the interviewee who described it as **"the only game in town"**. This mirrors the sentiments expressed by researchers in section 2.2. It is clear that any activity to identify, and remove, barriers to communication work needs to recognise that drawing staff time away from research work will be seen as unattractive to Higher Education Institutions (HEIs).

That said, one funder did point out that **"this [public engagement] is in their statutes"** and described it as **"important"** and needing **"encouragement"**. This funder spoke of the need to **"send out a strong signal"** that public engagement does matter.

One manager said that **"science is a competitive activity"**. This manifests itself in a number of ways that can inhibit public engagement. The drive to produce research publications is one, but an unwillingness to let slip a lead, either by diverting resources or speaking openly about work in progress.

Another manager pointed out that the dominance of research was a cultural issue across all of academia and not simply linked to science and engineering. Indeed in some institutions the need to treat all disciplines equally has already been recognised. Science and engineering will not therefore be seen as special cases. A funder also raised exactly the same issue saying that if the culture is to change, there is a **"need to address all subjects equally"**.

##### 3.1.2 Using the RAE

Given the dominant position of the RAE, one interviewee suggested that it could be used creatively to support public engagement. For example, science communication could be regarded as one part of the package that makes a **"good research outcome"**. Building communication in to research and possibly undergraduate degrees could also reinforce the message that good researchers communicate widely, not just to their peers.





## 3.2 The influence of funders

### 3.2.1 The academic perspective

There is a perception amongst academics that research funders are increasingly demanding that researchers include public dissemination plans in proposals and details on how this will be done in contracts. One manager saw this as reflecting a Government desire to show that **"research in universities is of public value and contributing to society"**. The rationale was not questioned, but there was a suggestion that this is simply adding to the job of the researcher without necessarily providing support to facilitate the extra tasks.

One institution has responded to this drive by starting to set up support systems for researchers to help them develop and deliver wider dissemination plans and engagement opportunities.

A senior academic pointed out what was endorsed by others that it is **"unreasonable to expect that all scientists can communicate"**. This was also backed up by social scientists one spoke of wider engagement being **"democratically a good idea"** but that you **"shouldn't force people to do it"** The senior academic suggested that public engagement funding regimes currently targeted at individuals could be re-focused to support institutions or departments. The rationale was that individual scientists were not necessarily good at looking beyond their own work and grants that were seen as **"their money"** would encourage this. It was suggested that research funders provide higher level strategic support so that institutions can use **"the talents of those who can communicate on behalf of all"**.

A press officer also described a tendency for academics to be **"isolationist"**. In research proposals this may be a slight drawback, but in public engagement activities it could be a fundamental flaw. Many of the skills and much of the knowledge required for good public engagement are not the same as those needed for research. Yet the funding models used are the same as for research. **"The Research Councils and the Wellcome Trust try to do public engagement like they do their scientific research"**. It was suggested that public engagement funding models ought to reflect the need to bring in new and different sets of expertise and encourage a more interactive and collaborative approach to developing activities. In particular the need to bring in professionals from the worlds of media, public relations and communication was highlighted.

Academia does not see current Office of Science and Technology (OST) funding for public engagement as generous. **"Sciencewise offers only 50% of the costs of carrying out activities apparently of high Government importance"**. Research Council science communication budgets are not merely small, which is seen as appropriate, but **"tiny"** which is not, if public engagement is a science policy priority.<sup>4</sup>





### 3.2.2 The funders' perspectives

Funders are aware that their research grants provide a powerful tool for stimulating public engagement activity. Increasingly, scientists are required to set out in their research proposals how they might engage wider audiences. There is also increasing pressure for proper reporting of these activities at the end of the grant. Some funders spoke in terms of this no longer being a case of **"ticking the boxes"**, but increasingly a genuine desire by the funder to get feedback.

The funders we spoke to are aware that they can be seen as simply making additional demands, sometimes of people who do not feel that they have the skills to run public activities. One funder is trying counteract this by promulgating the message that public engagement does not necessarily mean being **"the centre of attention"** and in some sense having to perform. Writing and providing scientific underpinning to others doing public facing work is also valuable. Another said that **"most people are not interested"** in communication work and that it was important to **"face this fact"**. It was therefore important to focus support on those who **"want to"** take part.

One funder described increasing emphasis on achieving **"impact"** but questioned whether this was an appropriate demand to be passed on to practising scientists. With no clear national consensus on what the desired impacts are and how they might be measured this was less useful than appealing to researchers to get involved to promote accountability and transparency.



### 3.3 The structure of the institutions

#### 3.3.1 Internal devolution

A number of institutions have devolved structures, this means that it can be difficult to set up, and monitor, centrally developed strategies. Hence levels of activity will often vary within different institutions by faculty or department and there may well be no way of assessing the overall level of activity. One institutional manager said that "a lot depends on key individuals rather than a structured thing".

A further complication is the almost inevitable silo mentality that develops in large organisations. One interviewee said that rather than disparaging each other, science and media studies could work together on communication activities.

#### 3.3.2 Engaging scientists

The devolution and isolationist tendencies described above can make it difficult for funders to bring public engagement opportunities to the attention of scientists and engineers.

One funder, referring to the OST/Wellcome Trust 2000 'Survey of Scientists' highlighted that many researchers are not aware of the opportunities that exist to enable them to get involved. So, as well as providing grants, training and other "**behind the scenes**" ways to get involved in public engagement, raising awareness of the opportunities is important. In addition to running reactive resources such as web-based information, there is an increasing drive to proactively inform funded researchers about both their funder's support for public engagement and other opportunities that exist.



### 3.3.3 Leadership

Leadership within an institution is important. Given the pre-occupation with research work, if no-one at the top of an institution regards communication as serious then it will always be a fringe activity reserved for the enthusiasts. There is also a middle management issue, whereby high level intentions can be diluted by the messages given out by group leaders and established academics. On a day-to-day basis, these are the people who are setting working practices and cultures and influencing young, junior researchers.

### 3.3.4 Press offices

One funder suggested that university press offices had a tendency to focus on defending the institution, rather than working across a broad front of press, PR and public affairs work. Some were **"not as media conscious as they should be"** which could mean that academics are not getting the internal support and training that they require. The interviews with researchers revealed that this is definitely seen to be the case in some institutions, although in others the press office is held in high regard.

A press officer recognising the internal requirements of institutions said that **"supporting the VC is very important"** for a press office. There was also a suggestion that communicating science and engineering required "suitably skilled" people, who were not necessarily easy to find. Corporately focused work was more generalist and more press office staff had the generic skills associated with promoting and/or defending an institution, whereas working with specific subjects such as science or engineering is a more specialist task.

Another press officer talked of PR and scientific staff thinking that they are doing two different things, when in fact they **"need each other"**.



## 3.4 Recognition of non-research activities

### 3.4.1 Science communication

One of the traditional barriers to science communication has been that it is not recognised within academic jobs and thus does not contribute to career progression. One funder told of dramatic changes in the general attitude of researchers towards public communication over the past decade, but emphasised that most work still relied on **"a high level of commitment"**. This funder thought that effective communicators needed **"rewards"** and suggested a **"merit promotion"** system that takes on board contributions to science and society work.

### 3.4.2 Teaching

The National Teaching Fellowships have been introduced to raise the profile of teaching in academia. Similar local initiatives are also being developed. One Russell Group university is trying to develop recognition systems that reflect more than just research achievements. Work was already under way to recognise outstanding teaching more effectively. It was suggested that **"other things might creep in"** PR work and science communications were cited as examples of factors that emerge later as a manager said **"If you want to encourage behaviour you need to reward the behaviour you want"**.

### 3.4.3 Public relations

One senior academic reported that public engagement is widely regarded as less important than other activities, but that it does provide an opportunity to **"build a profile for the institution"**. In this context engagement is dominated by the concept of media work. This senior academic said that good national media coverage can help institutions outside of the golden triangle build a wider reputation. Local media tends to be seen as a mechanism for building local relations and offsetting negative **"town and gown"** impressions, for example the impact of students on local housing supplies.

A senior academic suggested that local media might actually be a better way of engaging a wider public than national media. This led to the question of **"what is the best medium?"** and the suggestion by this senior figure that knowing the answer to this ought to be a fundamental factor in developing engagement strategies at both a national and institutional level.



### 3.4.4 Widening participation

The schools-based aspect of public engagement was seen as fitting squarely within universities widening participation agenda. Widening participation is funded through the university funding formula and the strategically important subjects' agenda. Both of these avenues should provide funding for schools outreach.

There was some suggestion of an over-emphasis on schools in some engagement work. The logic of engaging the next generation of both scientists and citizens was inescapable, but one funder suggested that some scientists saw this as an easier option than working with more disparate audiences.

### 3.4.5 Knowledge transfer

A number of the interviewees raised the knowledge transfer function of higher education as of relevance to public engagement.

It was suggested that public engagement might be a natural extension to communicating with smaller businesses as a way of developing a wider appreciation, and use of, university-based research. One funder talked of creating an **"environment in which individual researchers are better equipped to promote their own work"**. Another funder talked of the role of universities in **"meeting the needs of local people"** and questioned whether some had lost sight of the **"local"**.

In Scotland there is more overt recognition of the role of cultural activity within knowledge transfer. It has been proposed that Scottish Funding Council should create a dedicated funding stream to support cultural engagement by Scottish HEIs and promote cultural activity in the non-academic domain.

### 3.4.6 Regional development

There were some brief references to the importance of regional development agencies in supporting regional science strategies. It was suggested that public engagement ought to be seen as a component of the knowledge transfer and capacity building elements of such strategies.



### 3.5 Conclusions

Institutional players recognise that the culture in large parts of academia is currently being dominated by the research agenda. As public engagement does not contribute to the Research Assessment Exercise, it is not a high priority activity.

Low priority does not mean unimportant and many interviewees saw public engagement as an activity that needed to be supported. Encouraging and recognising other aspects of academia such as teaching and knowledge transfer are ways of broadening institutions' horizons and some see them as ways to open up recognition of public engagement.

Funders can influence the behaviour of both the individual researchers they fund and the institutions through which funds are channelled. However, this influence is somewhat remote and individual institutions and their managers are bigger influences on researchers.

Funders see their role as providing support and encouragement for the willing communicator, but some institutional players question whether funding mechanisms that reflect research funding models are appropriate for public engagement work.