Written evidence submitted by the Society for Applied Microbiology (COM0091)

This response should be considered an addendum to the response from the Royal Society of Biology (RSB). SfAM is a Member Organisation of the RSB.

Introduction

S*f*AM is the oldest microbiology society in the UK, serving microbiologists around the world. As the voice of applied microbiology, S*f*AM works to advance, for the benefit of the public, the science of microbiology in its application to the environment, human and animal health, agriculture, and industry.

As a charity, S*f*AM has an objective to use its funds for public benefit. Much of the activity within this objective is in the field of Science Communication and Public Engagement with Science.

This response will outline some of the challenges and successes we have experienced in this field.

New/hard-to-reach audiences vs already engaged

The Science Communication community as a whole is now beginning to look at engaging with some of the harder-to-reach audiences that were identified in the 2014 Public Attitudes to Science report[1].

This has required some lateral thinking in order to both bring the audience to us, and also take our science to new audiences.

At S*f*AM we have limited resources and have had to focus our efforts for best returns. Our approach has been mainly to broaden the appeal and relatability of our events. For example:

- Wine and cheese tasting (Cheltenham Science Festival, Bright Club Dublin)
- Film screening of "Resistance" documentary
- Beer tasting events (several in planning stage)

We have found that food and drink related events attract a much broader audience than events focusing on other topics. This audience has also engaged enthusiastically with the applied microbiology content.

S*f*AM's Summer Conference tours the UK and Ireland and at each location we have endeavored to connect with and contribute to the local community. To that end we have partnered with Bright Club Dublin, Brighton Café Scientifique, and Science Showoff (Edinburgh and Cardiff) to put on events that have attracted audience members from most, if not all, of the six audience types identified in the Public Attitudes 2014 report (p24). That said, the percentage of "Confident Engagers" has still been quite high.

Festivals

We have presented activities at both the Cheltenham Science Festival and the Big Bang Fair during the past few years. These have primarily engaged school children who are already engaged and interested by science.

These large scale events also present a challenge with respect to the quality of engagement. Evaluation shows a high footfall to our stands, however the scientists and science communicators running activities often find themselves speaking to large groups and it is difficult to promote two-way communication.

[1] https://www.ipsos-mori.com/Assets/Docs/Polls/pas-2014-main-report.pdf

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The main beneficiaries of our activities at the larger festivals are school pupils and their teachers.

Our experience suggests that smaller local events, such as the Big Bang Eastern, attract a broader audience and offer a better opportunity to engage in two-way communication with attendees. In line with this, we have chosen to sponsor a prize at Big Bang Eastern.

Evaluation and research

Encouraged by organizations including the British Science Association, as well as pressure to deliver return on investment in times of austerity, many Science Communication professionals are formalizing evaluation of their work. However, resources and skills are lacking in this area and it is very easy for practitioners to lose their way.

We would favour greater emphasis on professional development in this area with support for stand-alone taught evaluation modules, perhaps run alongside existing postgraduate courses in Science Communication (e.g. Imperial College, University of the West of England, Bournemouth University, and others). This should involve serious study of theory, qualitative and quantitative research techniques, and practical experience of a range of evaluation methods that are relevant to science communication evaluation.

Research into Public Engagement with Science in the UK has declined in recent years, particularly due to the cessation of the Beacons for Public Engagement[2], which provided important regional coordination of activities that are not replicated by any other framework, currently.

It is worth noting that the National Forum for Public Engagement has recently undertaken some research into the attitudes and priorities of the sector, but these results are not yet available publicly.

More general Science Communication research could be much better supported and we would like to see this type of activity embedded within scientific organizations and carried out in partnership between academia and professionals.

Small grants for Public Engagement

Within the Learned Society sector there are a number of organizations that offer small grants for members to carry out Public Engagement activities. S*f*AM is no different and we have funded a range of wide-reaching activities that see working microbiologists engaging directly with audiences of all ages and backgrounds.

There is perhaps a need to have formalized communication between organizations to discourage ‘double dipping’ – where funding is duplicated by multiple organisations - and to ensure a range of scientists are funded to carry out a broad array of activities.

Applied Microbiology in the Media

Over the past few years there have been numerous opportunities for applied microbiologists to work with journalists on breaking news stories. These have mostly centered around communicable diseases, including Influenza, Ebola, Zika Virus Disease, and bacterial food poisoning.

Our own membership includes several “media stars” who have been willing to put their head above the parapet in order to ensure that journalists have good evidence-based information on which to base their reports.

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[2] https://www.publicengagement.ac.uk/work-with-us/completed-projects/beacons

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S*f*AM is a funder of the Science Media Centre – an organization that continues, after 14 years of operation to work at the interface between the media and the scientific community, focusing on the sensational/controversial end of the spectrum, and operating mainly, though not only, reactively. Our members are engaged with the Science Media Centre and support their work to ensure journalists and scientists are talking to each other when it really matters.

Our relationship with the Science Media Centre and our own network of media contacts supports reactive media relations. However, our ability to promote our own stories proactively has changed significantly over recent years.

For S*f*AM, the sources of science news are our five internationally acclaimed journals and our scientific meetings. We are now less able to garner media attention for our science news than in previous years. This has taken us somewhat by surprise, given the applied nature of our field, which therefore lends a degree of relatability not enjoyed by more esoteric topics. We deal with disease, food, waste, energy, agriculture, water, and much more that is relevant to most people.

Traditional tactics, such as the press release, are no longer effective for anything but the biggest stories. This is largely, if not solely, due to the fact that the UK's mainstream news outlets have cut the number of specialist science, environment and health correspondents from an all time high in around 2007 to numbers that are barely tenable today. At the same time, the space/airtime available for science coverage appears to have dropped, as well.

Our concern is that the risk of cutting specialist correspondents is that we end up making a retrograde journey back to the late 1990's when media sensationalism of science was at an all-time high, and public trust was at an all-time low.

Towards the end of the 1990s/early 2000s, in the wake of BSE, MMR, *Salmonella* and GM crops, the House of Lords Science and Technology Committee published an influential report on Science in Society[3]. Two organizations emerged from its recommendations: the Science Media Centre[4] and Sense About Science[5]. So much has changed, thanks to these organizations and thanks to increasing pressure on scientists to engage. However, much of that change has been predicated on an understanding that has developed between the experts put forward by these organizations and the specialist science, health, and environment correspondents who are enabled to access resources by the gatekeepers within both organizations.

The Science Media Centre began at a time of financial stability in the media – newspapers were hiring specialists – and one of their most successful tactics has been to ensure that the specialist correspondents have access to the best experts and the top most controversial or scary stories, so as to compete alongside other sections. For a time this bolstered quality coverage of science, including our own topics within Applied Microbiology, and to an extent it still does. However, the pack of specialist correspondents from the UK national dailies has waned to a remaining few. And now we are increasingly seeing one of three scenarios:

1) All but the most sensational stories fall by the wayside
2) Science stories are being picked up by general reporters, not the specialists
3) Science coverage relies increasingly on freelance reporters

This is a turning point and one that the Science Media Centre appears slow to respond to. It does not cater for general reporters and it does not cater for freelance reporters – historically this has been for good reason, but that may no longer be a tenable position. Nor does it cater for alternative news

[3] http://www.publications.parliament.uk/pa/ld199900/ldselect/ldsctech/38/3801.htm
[4] http://www.sciencemediacentre.org/
[5] http://www.senseaboutscience.org/

outlets, which is where both the journalists and the stories it aims to influence are moving – again, it's time to move with the times and the fast changing media landscape.

Science reporting in the mainstream media is a vital part of the UK's Science Communication landscape and should be given special attention to ensure that the progress that has been made over the past 15 years is not lost.

Recognizing Science Communication in academic career progression

Science Communication is a requirement of many funding bodies and this has encouraged many academics to come forward and take part. The range of activities is vast and it all contributes to improving the level of technical, cultural, and civic scientific literacy in the UK.

We have put resources into supporting early career scientists to develop their skill in science communication, through the activities of our Early Career Scientists committee.

Our members tell us that, like many other 'soft' skills, Science Communication is not fully recognized in criteria for promotion in some academic institutions. This disproportionately disadvantages women who are more likely to undertake such activities, and may experience compounding disadvantages, such as part time working.

We would like to see all academic institutions including Science Communication as a mandatory measure of development and achievement in their formal processes for performance management and promotion.

Conclusion

There has been a great deal of progress made since 2000 and the most recent Public Attitudes to Science survey demonstrates the positive downstream effects of that progress. However, there is still work to do and new audiences to reach.

Science Communication in the media and as evidence for policy making (see RSB response) is currently in a precarious position but there are opportunities to go forward from this position and build on achievements from the past 15 years. There is also a risk of falling backwards into a world of mistrust and misinformation. This should be treated as urgent by government and all involved in the field of Science Communication.

Incentives for scientists to become and stay involved in Science Communication need to go beyond the financial. Self-actualization and esteem are right at the top of Maslow's hierarchy of needs[6], and for many scientists that comes in the form of promotion to Professor and freedom to carry out research.

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[6] http://www.simplypsychology.org/maslow.html#intro