



**small
TALK**

Mid-term Review, November 2005

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1 Executive Summary

Small Talk's primary objectives are to provide coherence for a range of activities around the UK focused on discussing nanotechnologies with publics and scientists, to learn and share lessons from these activities and to assess the extent to which current UK science communication activities provide an appropriate arena for 'upstream' dialogue that can inform government policy. (An 'upstream' issue is one that has yet to have a major impact on the public, the economy, or anything else.)

Nanotechnologies form the focus because, in addition to being interesting and relevant in their own right, they provide an opportunity for science communication practitioners to apply the lessons learned from the handling of the GM debate to an upstream issue. Small Talk helps to develop and evaluate events that both promote dialogue between stake-holders and facilitate the capture of opinions in a form that is useful to policy makers.

Project partners

Small Talk is a collaboration between The British Association for the Advancement of Science, the Royal Institution, ECSITE-UK and the Cheltenham Science Festival, managed by Think-Lab. Funding has been provided for Small Talk through the COPUS grant scheme and will run from September 2004 – February 2006.

Adjacent initiatives

Several other projects address nanotechnologies as an upstream engagement issue also. The recently formed Nanotechnologies Engagement Group aims to provide coherence to the diverse activity. Adjacent projects underway complement the Small Talk initiative, which remains distinct. The common goal is to forge ways to engage stake-holders and diverse publics in meaningful dialogue about aspirations and fears for nanotechnologies and the physical realities behind those aspirations and fears.

Like Small Talk, these adjacent projects are motivated by the need for coherent policy for technological change and the democratisation of the process to develop these policies. Small Talk's particular focus is on the role of existing science communication networks and practices whilst other initiatives have generally been working outside these networks. The major difference between Small Talk and other nanotechnology dialogue projects is that Small Talk is practitioner driven. This is also the main reason that Small Talk has a unique contribution to make.

Progress to date

There have been six Small Talk events with another planned for November 2005. Experience from each has informed subsequent events and has been codified into a detailed list of 'lessons learnt to date' (Appendix C). The majority of events to date have followed fairly 'traditional' formats (focus groups, public discussion meetings). To record opinions in these early events, participants filled in blank speech bubbles on postcards featuring illustrated characters (Appendix B). Audiences responded well to the postcards providing Small Talk with a lot of data. Interestingly, the responses revealed similar aspirations and concerns from groups regardless of their age, background or occupation.

Amongst the opinions expressed was concern about risks as yet unknown and also an expectation of unanticipated benefits – the public appears to expect the unexpected! When asked about the moral implications, several respondents expressed concern about the impact of nanotechnology on developing countries. Participants were generally keen for the UK to be a leader in the field and for research to be well funded. They also believed that decisions on nanotechnology should involve everyone.

Next steps

The homogeneity in responses perhaps should have been expected for an issue whose impact is still hard to imagine. The postcards effectively capture the general perception of the issues around nanotechnologies amongst various publics. However, as this perception is currently so vague, the postcards and 'traditional' format of some events do not offer much scope for exploring the deeper attitudes and beliefs that underlie such opinions. Therefore, new methods for exploring and gathering public opinions are recommended in this review.

The recommendations build on the unique features and advantages of the Small Talk project: it is practitioner driven and located in the centre of the science communication community.

Summary of Recommendations

1. Small Talk should consult policy makers currently in the field to determine their interests and concerns. These interests should inform Small Talk activities. To maximise the impact on policy, appropriate channels for the dissemination of the project outputs should be identified.
2. Barriers to delivering participative dialogue activities should be explored with science communicators.
3. Small Talk should be proactive in developing more creative event formats, and funding should only be used for events that trial or develop new formats.
4. A 'menu' of new formats should be developed and presented on the website, to encourage organisations to deliver activities other than Q&A sessions or debates.
5. New and diverse target audiences should be considered for future events.
6. Future events should focus on specific aspects of nanotechnologies, for example regulation, impact on developing countries or use in medicine.
7. Scenarios should be developed to help frame the debates, and allow participants to discuss upstream science that may have few tangible applications.
8. New instruments to collect audience opinions should be developed to explore the most effective means of capturing their aspirations and concerns.

2 Introduction

The Small Talk project is now beyond the half-way point. This document assesses progress in meeting objectives to date, and reviews the lessons learned. Developments that have taken place in the field since the outset of the project are also discussed. This review makes recommendations for the direction of the remaining part of the project, with a view to helping Small Talk focus more closely on the specific project objectives and making a more significant impact on science communication practice, especially in the area of 'upstream dialogue'.

2.1 Rationale

Since the publication in 2000 of the report of the House of Lords Select Committee on Science and Technology¹, it has been acknowledged in the science communication community that the one-way transfer of information from scientists to non-scientists is not enough to counter the 'crisis of confidence' in science that certain sectors of society are experiencing. For this reason, there has been a move away from the 'deficit' model of science communication typified by the public understanding of science approach where 'to know science is to love it'² Instead, the House of Lords Select Committee report called for a new mood of dialogue:

'Today's public expects not merely to know what is going on but to be consulted; science is beginning to see the wisdom of this, and to move out of the laboratory and into the community to engage in dialogue aimed at mutual understanding'³

This approach moves away from the one-way, specialist to non-specialist communication associated with the deficit model, and towards greater engagement with sectors of the public. The dialogue model sees effective science communication as a multi-way communication between specialists and non-specialists. The 2004 DEMOS publication 'See-through science'⁴ encouraged the dialogical communication process to move 'upstream'. That is, to encourage debate of scientific issues (such as nanotechnologies) where regulation frameworks are under development, as opposed to 'downstream' issues (for example genetically modified organisms) where the outcomes of any public dialogue are unlikely to impact on policy.

Small Talk recognised that, through effective collaboration, members of the science communication community could potentially have more impact on areas of national scientific importance. The project aims to provide an opportunity for practitioners to work together and apply the lessons learned from the GM Nation consultation exercise⁵ to another, even more 'upstream' issue: nanotechnologies. In addition, the project aims to preserve the diversity of event formats already present within the field in order to reach a range of audiences and remain sensitive to the values of their various providers. In short, the project's primary objective is to explore whether current UK science communication activities provide an appropriate arena for upstream dialogue, and whether such activities can produce outcomes that are relevant to policymakers.

¹ House of Lords Select Committee on Science and Technology, *Third Report* (February 2000), (URI: <http://www.parliament.the-stationery-office.co.uk/pa/ld199900/ldselect/ldscstech/38/3801.htm>, Nov. 2005)

² Sturgis, P and Allum, N., 2004, 'Science in Society: Re-evaluating the Deficit Model of Public Understanding' *Public Understanding of Science*, 13(1), 55-75.

³ House of Lords Select Committee on Science and Technology, *Third Report* (February 2000), Paragraph 5.1, (URI: <http://www.parliament.the-stationery-office.co.uk/pa/ld199900/ldselect/ldscstech/38/3807.htm>, Nov. 2005)

⁴ Rebecca Willis, James Wilsdon 2004, *See through science: why public engagement needs to move upstream* DEMOS (URI: http://www.demos.co.uk/Seethroughsciencefinal_pdf_media_public.aspx, Nov 2005)

⁵ Richard Heller, *GM Nation: The Findings of the Public Debate* (URI: http://www.gmnation.org.uk/ut_09/ut_9_6.htm#summary, Nov. 2005)

2.2 Project description

Small Talk is a collaborative project between The British Association for the Advancement of Science, the Royal Institution, ECSITE-UK and the Cheltenham Science Festival, managed by Think-Lab. The project aims to provide coherence for a range of activities around the UK focused on discussing nanotechnologies with publics and scientists. Funding has been provided for Small Talk through the COPUS grant scheme and will run from September 2004 – February 2006.

3 Developments in the field

3.1 Similar projects

A number of projects involving dialogue on nanotechnologies are currently underway⁶. Of particular relevance to Small Talk are two projects funded by the ScienceWise scheme, Nanodialogues and the Nanotechnology Engagement Group.

Nanodialogues⁷

Nanodialogues, a collaboration between DEMOS, Lancaster University, the Environment Agency, BBSRC and EPSRC, will use a variety of ‘upstream’ engagement methods that involve stakeholder, representative and randomly selected participants to investigate the practicalities of public engagement, so that dialogue events will be useful in informing policy development and decision-making. This project will ensure that nanoscientists take a front seat role in constructive dialogue with the public to inform four areas:

- Risk and regulation in the use of nanoparticles and nanotubes
- The role of public engagement in shaping research goals
- Public engagement and the corporate innovation cycle
- Potential opportunities, barriers and benefits to the global diffusion of nanotechnologies

Nanotechnologies Engagement Group

Recognising the need for Government to have a coherent view of the public debate on nanotechnologies, the OST has commissioned the Involve group (working with Cambridge Nanoscience, UEA and the Policy Studies Institute) to establish the Nanotechnologies Engagement Group (NEG). The NEG will provide a platform to ensure that as many groups, individuals and organisations as possible are able to help shape the Government’s public engagement programmes⁸. It has two main roles:

Supporting the various public engagement initiatives by mapping current practice in public engagement on nanotechnologies, and understanding stakeholders’ expectations of such practice. The NEG will not deliver any public engagement activities as such, but will seek to support those who are undertaking

⁶ For an overview of current activity, see Robert Doubleday, et al, July 2005, *The Nanotechnology Engagement Group: An Introduction* (http://www.involving.org/mt/archives/blog_13/NEGIntro180705.pdf, Nov. 2005) pp 15-18.

⁷ For more information, see the DEMOS website: <http://www.demos.co.uk/projects/currentprojects/nanodialogues/>

⁸ A detailed account of the NEG’s proposed structure and activities can be found in Robert Doubleday et al (op cit, note 6).

public engagement on nanotechnologies by sharing learning between them, identifying knowledge gaps and providing a channel to policy makers. The NEG will explicitly support the Government (specifically, the Office of Science and Technology) in developing its public engagement programmes ensuring that the Government's programme builds upon best practice in public engagement, supports the development of that practice and ensures that public engagement feeds into policy and decision-making.

Providing strategic views on 'upstream engagement'. Through its work focused on public engagement on nanotechnologies, the NEG will develop a deep understanding of the principles and practice of 'upstream' public engagement related to an emerging area of science and technology. The NEG will reflect on the lessons being learned in relation to nanotechnologies, and by drawing on other examples will provide strategic views on the development of upstream engagement.

3.2 Opportunities for Small Talk

The Nanodialogues initiative complements Small Talk in a number of ways. In particular, by investing heavily in four 'experiments', Nanodialogues will generate results and develop a theoretical framework which can inform the evaluation of Small Talk's own events. This will allow Small Talk's interventions to provide more insight into public engagement with issues surrounding nanotechnologies than would be possible in the absence of the Nanodialogues research. Conversely, even though Small Talk's events are more ad hoc than the carefully controlled Nanodialogue experiments, their sheer number and variety can provide an additional 'real-world' experience against which conclusions from the Nanodialogues project can be tested.

The framework provided by the NEG has the potential to magnify Small Talk's contribution to nanotechnology policy development and maximise the value of Small Talk's particular focus on existing activities. Experience from Small Talk events takes on new significance in combination with results from other initiatives, but combining lessons from disparate approaches requires coherence. As Small Talk brings coherence to disparate nanotechnology events, so the NEG can bring coherence to a range of initiatives including Small Talk. The NEG also offers opportunities for parallel initiatives to learn directly from each other, rather than waiting for a report stage. With respect to the objectives of Small Talk, the most valuable contribution the NEG can make is likely to come from the facilitation of communication, especially by providing channels for sharing results and conclusions.

Small Talk is uniquely positioned in the 'nano-debate landscape' by being essentially practitioner led. Being 'bottom up' rather than 'top down' impacts on Small Talk's ability to innovate and deliver in several ways. Firstly, it avoids the kind of 'turf disputes' that have been a feature of other initiatives. Relations between academics and science communication practitioners can be difficult to manage. The reasons for this are complex, but the effect is resistance from science communication practitioners to being 'told how to do their job', especially if it's a sociologist who's telling them! The structure of Small Talk obviates such tensions. Secondly, Small Talk is well placed to build on existing practice. In contrast, it is more likely that top-down approaches would be reluctant to 'start from here'. Thirdly, Small Talk is well placed to facilitate innovation amongst practitioners themselves because there is a sense of ownership within the practitioner community.

Small Talk's particular contribution, then, is focused on two key areas not covered in the ScienceWise projects:

1. Delivering effective upstream dialogue activities through the existing provision of science communication activities
2. Using existing activities to capture public opinions in way that is useful and relevant to policymakers

In light of these other funded projects, the remainder of this report details the progress of Small Talk to date, and makes recommendations as to the most appropriate and valuable way to move forward.

4 Progress to date

4.1 Website and resources

The Small Talk website contains information for any practitioner wishing to develop a dialogue activity about nanotechnologies. It provides a wealth of resources on dialogue, science communication and nanotechnologies, as well as listings for events, contact details and the project outcomes to date.

The site has received 34,000 hits and 11,000 page views since its launch in January 2005, with the guidelines and resources pages proving most popular.

4.2 Events

To date, six events have been held as part of the Small Talk project. A brief description of each is given in the tables below:

Small Talk events to date

Date	Venue	Audience	Description
November 2004	RI	300 (public)	Panel discussion
February 2005	RI	35 (16-19 students)	Panel presentations followed by breakout discussion
March? 2005	Dana Centre	25 (medical professionals)	Panel discussion
June 2005	Cheltenham Science Festival	80 (science festival visitors)	Panel discussion
June 2005	Dana Centre	8 (special interest groups)	Focus group/small group facilitated discussion
6 October 2005	Museum of Science and Industry, Manchester	Science museum visitors (students)	sciZmic ' <i>Debate with a difference</i> '

Small Talk future events

Date	Venue	Audience	Description
23 November 2005	Life, Newcastle	Science centre visitors (students)	sciZmic ' <i>Debate with a difference</i> '

The science centre venues are planning to use the 'Debates with a difference' format developed by Scizmic, the UK science clubs network (www.scizmic.net). The activities in Manchester ran from 10am to 3pm with the same group of students, allowing an in-depth exploration of the issues. The format for the Newcastle events has not yet been finalised, and can be developed following the evaluation of the Manchester events. This would be an opportunity to explore new formats and content, as is described in more detail in Section 5.

4.3 'Basket of questions' based on RS/RAEng report

To begin the project with a structure to the theme, we provided event organisers with a 'basket of questions', based on the issues raised in the Royal Society / Royal Academy of Engineering report⁹. Event organisers were encouraged to use these key themes and questions as guidelines to the focus and outcomes of their events. They were not intended to be restrictive however and event organisers were encouraged to pick questions grouped around one or more existing themes, or choose an entirely new theme. We hoped that further themes and questions would develop out of these events, reflecting public interest. The initial questions are outlined in Appendix A.

⁹ Royal Society & Royal Academy of Engineering, 29 July 2004, *Nanoscience and nanotechnologies: opportunities and uncertainties* (URI: <http://www.nanotec.org.uk/finalReport.htm>, Nov. 2005)

4.4 Data collection instruments

Speech bubble postcards

An important part of the Small Talk project is collecting the opinions of audiences and speakers on the issues under discussion and the format of the discussion events. The data collection instruments were carefully considered, and postcards featuring speech bubbles were developed, piloted and refined. The postcards were designed with the aim of capturing audiences' aspirations and concerns over nanotechnologies, as well as acting as evaluation instruments. One side of the card was printed with questions and speech bubbles in which individuals were encouraged to write their responses. Two versions of the card were developed, and are given in Appendix B.

The postcards were well received by audiences, and good response rates were achieved. The questions on the cards were intentionally open in order that a wide range of opinions could be gathered. However, following the fifth event where the postcards were used, it appears that similar aspirations and concerns are being raised by groups regardless of their age, background or occupation. This indicates that although the speech bubbles were a valuable tool for gathering a large breadth of opinion, they provide little scope for exploring the deeper attitudes and beliefs that underlie such opinions. For this reason, new methods for gathering public opinions on nanotechnologies are recommended in Section 5.

Useful evaluation data were obtained but most of the recommendations related to the format of events rather than their scientific content or the nature and quality of the discourse. These types of recommendations are not the most valuable to Small Talk, so different feedback should be collected to allow more constructive suggestions to be made.

Electronic surveys

Electronic questionnaires, consisting mostly of open questions, were distributed to organisers and contributors following the events. These aimed to collect feedback on the success of the individual event formats, as well as the impact of involvement in the process on scientists or others working in the field. Six of the seven contributors who completed the survey said that involvement in the event would have at least 'a little' impact on the way in which they worked; one of these six expected the project to have a 'considerable impact'. Most of the impacts described by the scientists related to a greater awareness of the societal aspects of their work.

Again, however, the main recommendations arising from the data collected addressed improving the delivery of events with a traditional format, such as panel discussions. This is not the most valuable potential outcome from a project such as Small Talk.

4.5 Attitudes/issues raised

Risks

- Who controls the science?
- How will it be regulated?
- Technology in wrong hands
- Moving faster than we have time to understand
- Possible environmental risks
- Unexpected risks

- Military use

Benefits

- Medicine
- Economy
- Environment
- Unexpected benefits

Moral implications

- No different to any new technology
- Safety and regulation
- Depends on use
- Impact on developing countries
- Can it be used for evil?

Other issues

- Need for more information
- Need to involve people in decisions
- UK needs to lead in this field/ proper funding

5 The way forward

To continue to make a significant impact in a relatively crowded field, the recommendations below aim to build on the unique features and advantages of the Small Talk project:

- It is practitioner driven
- It is located in the centre of science communication community

The recommendations fall under three headings: consultation with policymakers, event formats and progressing the debate.

5.1 Consultation with policymakers

If Small Talk intends to impact on policy in the area of nanotechnologies or public engagement, consultation with policymakers is essential. This is especially pertinent in light of the ScienceWise funded projects in this area. This situation is difficult as a comprehensive regulation framework for nanotechnologies is not yet under construction. Much of the policy impact of Small Talk and the two ScienceWise projects could well be in the area of public engagement rather than nanotechnologies. For Small Talk to make a valuable contribution in this area, the project outputs must be both timely and relevant.

Recommendation 1: Small Talk should consult policy makers currently in the field to determine their interests and concerns. These interests should inform Small Talk activities. To maximise the impact on policy, appropriate channels for the dissemination of the project outputs should be identified.

5.2 Events

Currently, few innovative event formats have been included in the programme – most have been discussion groups or public debates. As a result, the lessons learned have provided little insight into the practicalities of adapting participative techniques for science communication organisations. If the role of the science communication community in public dialogue is to be worthwhile, an understanding of the barriers to achieving this is essential. The impetus for identifying and overcoming these barriers should come from within the community (because the science communication community doesn't react well to outsiders telling them what they should be doing). As Small Talk is firmly embedded within the community, it is ideally placed to explore this issue.

Recommendation 2: Barriers to delivering participative dialogue activities should be explored with science communicators.

This should take the form of, at least, a review of the literature and other resources, such as conference outputs. Following this, an active consultation exercise should be considered if necessary. Specific barriers (such as variations in the use made of science communication forums by different social groups) should be identified and documented so that future Small Talk events can address them. The output from this process would form a valuable part of the final project report. The BA are considering addressing this at one of their working lunch events.

To date, the events included in the Small Talk programme have been selected and developed by the host organisations themselves. Given that, the question for Small Talk is whether these 'traditional' formats have been used because organisations are unaware of innovative formats that are available to them, or due to practical reasons why they are inappropriate or unsuitable for their needs.

Recommendation 3: Small Talk should be proactive in developing more creative event formats, and funding should only be used for events that trial or develop new formats.

Recommendation 4: A 'menu' of new formats should be developed and presented on the website, to encourage organisations to deliver activities other than Q&A sessions or debates

The Small Talk team will meet to exchange ideas for extending the range of events. Science centres have already been identified as potential collaborators for developing new formats, as they are often innovative in the types of events they deliver. Suggestions for possible formats that have already been mooted include World Cafés and role-play activities where participants take the viewpoint of representatives from different departments within Government. There is scope for collaboration with other groups too, in addition to science centres. For instance, novel approaches from theatre and the work Creative Partnerships is doing with science and with citizenship may help Small Talk to innovate in this area. The Small Talk team will solicit input from groups outside science centres.

Recommendation 5: New and diverse target audiences should be considered for future events

Small Talk's contribution to the development of policy for nanotechnologies will be maximised by seeking a wide range of opinions on a topic, rather than a representative sample of opinions. Potential audiences could therefore include lobby groups, members of Young Parliament or groups such as Friends of the Earth. Targeting these groups will allow a wide range of perspectives on the topic to be collected. This recommendation has already been implemented in the events that targeted medical professionals and special interest groups; it is suggested that the process be extended to include other groups of interest to the project partners.

5.3 Progressing the debate

The issues arising and audience opinions captured from many of the events have been similar to one another. While this provides a useful baseline for future discussions, for the debate to progress these issues must be explored in greater depth. In addition, audience opinions on the issues need to be captured in an effective manner.

Recommendation 6: Future events should focus on specific aspects of nanotechnologies, for example regulation, impact on developing countries or use in medicine.

Recommendation 7: Scenarios should be developed to help frame the debates, and allow participants to discuss upstream science that may have few tangible applications.

Recommendation 8: New instruments to collect audience opinions should be developed to explore the most effective means of capturing their aspirations and concerns.

Qualitative research methods such as unstructured interviews are one possible method of collecting audience opinions on the issues. However, the means of collecting the opinions should be as transferable as possible, so that future events can be used to collect information in a format that is useful for policymakers. The development of new formats (discussed in the previous section) will focus on the need to progress the debate about nanotechnologies and provoke new perspectives on the issues from participants. In this way, Small Talk events can more effectively anticipate the types of debate that will emerge in other contexts.

Appendix A Key themes & questions for event organisers

We have developed a set of key themes to be approached and questions to be posed in dialogue events on nanotechnology. These are based on the reports we have read, the events we have attended and our own experiences of the issues surrounding nanotechnology. We hope that event organisers can use these key themes and questions as a guideline to the focuses and outcomes of their events, but we do not intend them to be restrictive. Event organisers can pick questions grouped around one or more existing themes, or choose an entirely new theme. We hope that our themes and questions will develop out of events, to reflect public interest.

Nanotechnologies

What encompasses the term nanotechnology? How is it different to other sciences and technologies?

Who is developing nanotechnology? Who is it being developed for?

What different types of nanotechnology are possible? Should they be treated differently?

What current and potential future uses can nanotechnology be put to?

What issues do different types of nanotechnology raise?

Regulation & Funding

Should nanotechnology be treated differently to other science and technology? Why?

What regulations/assurance would you want to see in place?

Who should regulate the development and use of nanotechnology? How?

Are there any areas of research or uses of nanotechnology that should not be allowed?

How much money should be put into nanotechnology research? By who?

Where should the funding go? How should it be distributed between different areas of research?

Benefits & Concerns

How could nanotechnology improve our lives?

Who will benefit from nanotechnology? How will they benefit?

What concerns does this new technology raise?

How might it affect society?

What do you think are the main risks associated with nanotechnology?

How should these risks be dealt with?

Fact v fiction

What is nanotechnology currently used for?

What possibilities are there for uses of nanotechnology in the future?

When will these future uses of nanotechnology become available?

Which stories of future benefits are possible? Which are science fiction?

Which stories of future risks are possible? Which are science fiction?

Who should decide the future direction of nanotechnology?

How far can we go with nanotechnology? How far should we go?

Appendix B Opinion Postcards

Version 1

I think that nanotechnologies may have the following

risks



benefits



moral implications



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Version 2

If you could say *ANYTHING* to the following people about nanotechnologies, what would you say?



SCIENTIST

A large, empty speech bubble with a pointed top, intended for the respondent to write their feedback.A large, empty speech bubble with a pointed top, intended for the respondent to write their feedback.

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Please turn over to give us your feedback on today's event

Appendix C Lessons Learned to Date

Each Small Talk event is evaluated to find out what worked well and how we could do things better. From these evaluations, we have drawn the following lessons:

1. Speakers should be well briefed

It is important that there is a dialogue between speakers and organisers beforehand to ensure that everyone is clear about the aims of the Small Talk events, that the scientific level of the presentations are appropriate to the audience and that duplication of material by different speakers is minimised. It might be helpful to give an indication of the audience's understanding of nanotechnologies and guidance on good practice in presenting nanotechnologies - using everyday examples, existing applications, simple descriptions and explanations and avoiding use of scientific jargon for instance. The time allocated to each speaker should also be made clear and speakers warned that the chair will enforce this!

After our first event, we developed a briefing note for Small Talk speakers, which we have used to prepare for future events. Those speakers who have taken the briefing into account have proved to be better at pitching and timing their presentations and have received much more positive feedback from participants!

2. The framing of the debates is important

Speakers' presentations and the topics chosen for discussion should have common threads and focus to avoid confusion and reflect the interests of audiences. A clearer context for each discussion may make it easier for audiences to engage whatever their level of scientific understanding.

3. The role of the chair is important

Perhaps more so in Small Talk events than those not included in a similar programme. By introducing Small Talk to audiences and explaining its aims and objectives, the chair of an event can help to frame the debate and encourage participants to share their views. In future, the chair could also possibly outline the science of nanotechnologies – avoiding the risk of expert speakers misjudging the level of knowledge of the audience. The chair's role is also important in keeping speakers to time and facilitating open discussion.

4. Ice breaker discussions amongst audience were valuable

In our first event, audience members were given the opportunity to discuss the presentations with their neighbour before questions or comments were taken. This format was useful in allowing each participant to get the chance to discuss their interests and concerns with at least one other person and to think about these issues before open discussion takes place.

5. Think about whether you want to involve the speakers in breakout groups

On the 1 February 2005, 35 school students took part in a discussion event at the Royal Institution. The speakers who introduced the topic of nanotechnology were PhD students and joined the participants in the breakout groups. Participants' feedback commented favourably on this aspect of the programme as it allowed participants to quiz speakers further and use their knowledge to inform the debate. More importantly, it enabled the speakers (the majority of whom were scientists) to hear the views of the participants and gain valuable perspectives on their work.

Involving the speakers in the discussions will however inevitably change the nature of the discussion. There are also issues of power and balance of authority, particularly if you have a small audience and lots of speakers. It's important then that you give these questions careful thought while planning your event.

6. Consider the layout of the room

When we arrived at our event at the Dana Centre on 11 April 2005, the room was laid out in the traditional way with the speakers placed on a stage at the front of the room. We felt that this arrangement didn't encourage discussion or encourage participants to feel that their views were as valuable as the 'expert' views. So we moved the speakers to sit amongst the audience and speak from a much more 'equal' position.

7. Plan enough time for discussions

Leaving a few minutes at the end of an event isn't enough time for discussions. Plan the focus of the event around the discussions, with presentations supplementing these activities.

Discussions also ask participants to work and can be tiring, so think about using presentations to break up the sessions and allow some breathing and thinking space for participants.

8. Clearly focused presentations and discussions work well

During our event with school children on 1 February 2005, the questions to the participants were well framed and there was no sense of confusion over the reason for the discussions as there was in previous events. We found that focusing on particular aspects nanotechnology such as risks, benefits and moral implications encourages deeper and more meaningful debate.

9. Allowing time for evaluation encourages participant feedback.

By allowing 5 minutes at the end of the 1 February event for evaluation, a response rate of around 90% was achieved with the postcards, and three speakers and both organisers completed the surveys. The improved response rate from speakers may have also been helped by speakers agreeing to take part in the evaluation before the survey was distributed.

10. Perceived policy impact.

The majority of participants at our event on 11 April did not understand how the event could have a policy impact. Future events could summarise how the results from Small Talk will be used to engage policymakers. It would also be useful to encourage policymakers to attend and contribute to future events if possible.