

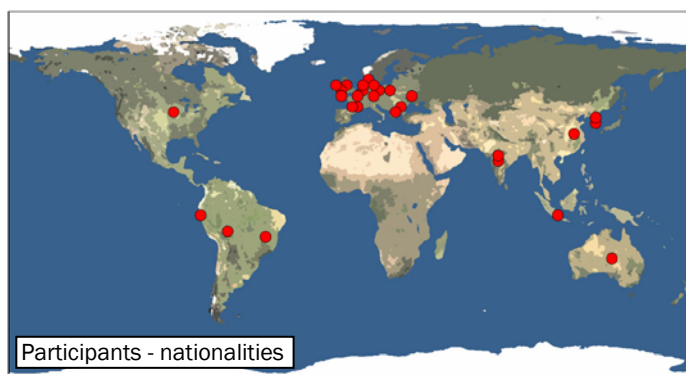
## First Advanced Course on Strategic Communication and Applied Ethics in Nanobiotechnology

St Edmund Hall, Oxford University, 11 - 16 March 2007

### Course Evaluation

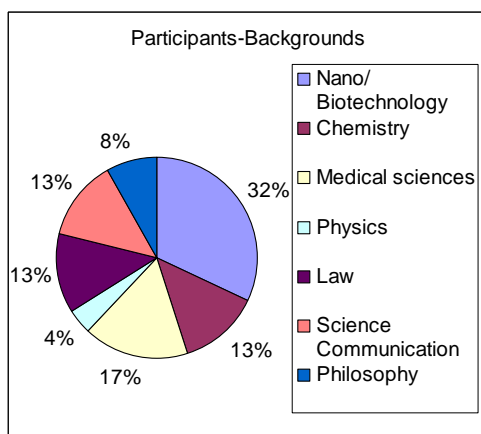
#### Introduction

This report summarises participants' feedback and evaluations of the first Nanobio-RAISE Advanced Course held 11 - 16 March 2007 at St Edmund Hall in Oxford, UK. A total of 24 academia and industry representatives from Europe, the Americas, Asia and Australia and with very diverse backgrounds<sup>1</sup> joined the course to discuss developments in nanobiotechnology and its ethical and social implications. The course provided leading experts in public relations and science communication, ethics, risk assessment and regulatory affairs in the nanotechnology field. Participants were trained in writing, presenting, debating and preparing communication plans and were familiarised with ethical and social issues in nanotechnology through debate sessions, role play and group work.



#### Feedback / evaluation

Participants were asked for their feedback both during the course by way of a mid-term evaluation and after, through feedback forms filled in at the end of the course. They evaluated the organisation, theoretical and practical programme and general aspects of the course very positively. Participants offered good suggestions for improvement which will be taken up in the organisation of the second course to be held 23 - 28 September 2007 in Oxford. The results of the evaluations and suggestions for improvement are summarised below.



Comments from participants:

- *"This was the other side of science that I had missed seeing all these years. It's been a 'mind opening' course."* (Researcher in nanobiotechnology)
- *"In general I found everything excellent and stimulating."* (Researcher in science and technology studies)

<sup>1</sup> Approximately 2/3 of the participants were natural scientists and 1/3 were active in the 'ethical, legal and social aspects' of nanotechnology; 2/3 were working in academia and 1/3 in industry, with the following backgrounds: Nano/Biosciences and -technologies, Life Sciences, Biomedical Sciences, Medicine, Chemistry, Physics, Mathematics, Law, Science and Technology Studies, Philosophy, Ethics, Sociology and Literature Studies.

## Mid-term evaluation

The mid-term evaluation was held on Wednesday 14 March in the afternoon and invited participants' general comments and suggestions as well as practical improvements for the remainder of the course. Participants showed their appreciation for the programme, the lecturers and the organisation. They valued the overall balance and quality of the programme and specifically welcomed the level of interaction and training exercises, but also offered concrete suggestions to improve the programme even further.

Although the quality of the programme was highly appreciated, most participants considered the time schedule too intensive. Lectures were scheduled from 09.00 until 21.30 each day without time off and the participants were all very much looking forward to a free afternoon to visit Oxford.<sup>2</sup>

Participants also suggested expanding the introductory presentations on nanotechnology to ensure a level playing ground for discussion. These presentations should introduce the state-of-the-art of the science, current applications and products on the market as well as risk assessments and regulations before moving into the ethical and social considerations.<sup>3</sup> Conversely, some of the philosophical lectures were very difficult to understand for the PhD students from scientific disciplines.

Further suggestions included:

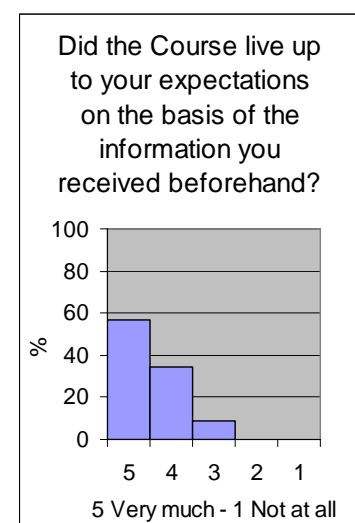
- monitoring the learning process by an ongoing 'opinion survey' during the course, voting on participants' statements and monitoring for changes in opinion. This would provide the course organisers with a tool to assess participants' concept acquisition.
- certification or accreditation of the course in existing educational programmes to facilitate registration for PhD students from the natural sciences.
- providing notes on further reading by lecturers in the course book.
- organising buffet lunches in the afternoon.

## Feedback Forms - Results

The feedback forms were completed at the end of the course. To the question '*Did the course live up to your expectations on the basis of the information you received beforehand?*', participants responded with an average of 4,5 out of 5. They especially appreciated the quality and diversity of the lecturers. Their input, combined with the very diverse backgrounds of the participants themselves constituted an ideal learning environment and generated fruitful discussions.

*Comments from participants:*

- *"I could see nano-issues much more clearly than before"* (Medical doctor)
- *"Exceeded my expectations as the integration of disparate issues actually worked very well."* (PhD student in sociology)
- *"Excellent information on ethics and societal information and how to integrate these in communication"* (Industry representative)



<sup>2</sup> There was such strong agreement on this point that the organisers arranged some free time on the following day.

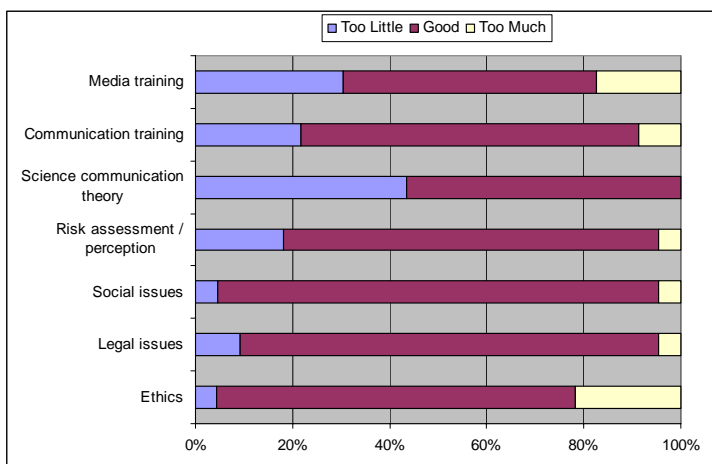
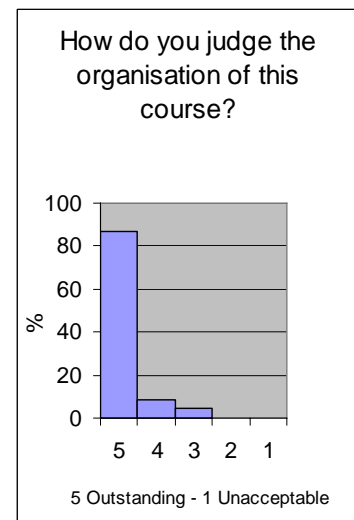
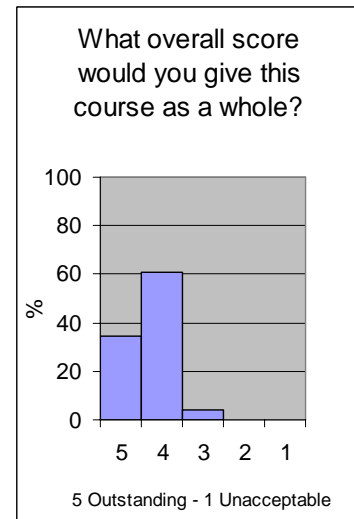
<sup>3</sup> The course programme was originally designed to introduce ethical, social and communicative aspects to nanobiotechnology researchers. Since participants' background turned out to be much more varied, the programme for the next course will include further introductions to the scientific background.

Responses to the question of 'What overall score would you give this course as a whole?' averaged 4,3 out of 5. Participants very much welcomed the integration of a practical, hands-on approach to the range of complex theoretical issues in ethics and social sciences through interactive work such as the drafting of a strategic communication plan, the role playing exercise and the debate session (where participants discuss their own statements and views on nanotechnology).

To the question "How do you judge the organisation of this course?", participants responded with an average of 4,8 out of 5. This shows a high appreciation for the course, but there were suggestions for improvement which will be taken into consideration for the next course. Most comments were directly related to the very busy time schedule, offering little time for the participants to network, reflect on the presentations, or work on the communication exercise.

Overall, participants found coverage of the main topics in the course well balanced. Some commented that the ethical and social issues received too much attention in comparison with the scientific aspects, and most agreed that more time could be spent on practical exercises, specifically the communication plan. A minority indicated a preference for more theory on science communication and risk assessment / perception. Some commented that a public relations / marketing perspective could be useful.

Participants very much enjoyed the groupwork and felt that there was enough time allocated for and assistance during the exercises, although the communication plan work was not entirely clear to everyone and difficult for those who had no experience with this.



**Comments from participants:**

- It was difficult to finish the groupwork on strategic communication (Postdoctoral Engineer in nanobiotechnology)
- More lectures on the science (Researcher in history of science)
- For the Mon/Tue/ Wed there could be more practical work. (Postdoctoral Engineer in biology)

Participants on average spent one working day on the assignments before attending the course:

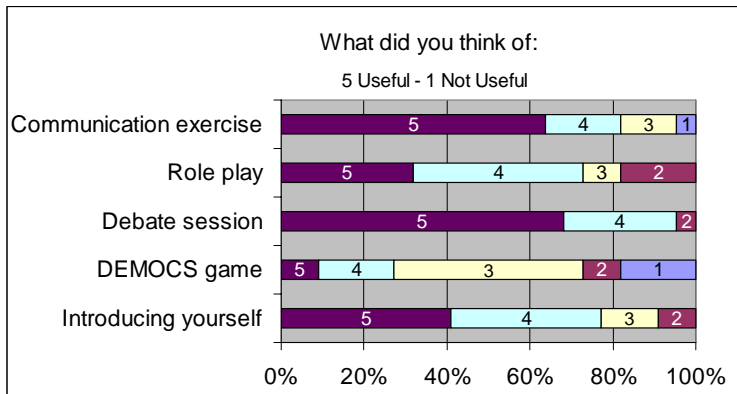
- 1,5 hours in preparation of their introductory presentation,
- 30 minutes on making statements for the debate session,
- 2,5 hours on preparing their press release for the media training and
- 3 hours to go through all the reading material.

The reading material provided before the course was considered of a high quality and sufficient. Participants did comment that the contents of the course book could be closer to the actual presentations. It was noted that a list of 'further reading' provided by the lecturers in the course

book could be useful if participants would like to find out more about the topics. Most of the exercises were thought to be very useful, especially the debate session, communication exercise and introductory presentations.

*Comments from participants:*

➤ "It was not easy to cooperate due to diverse background knowledge. In the end, these diversions provided enormous synergies for the team work." (Medical doctor)



➤ "I am not a fan of groupwork generally, but here it gave lots of fun and insight" (Postdoctoral researcher in philosophy of science)

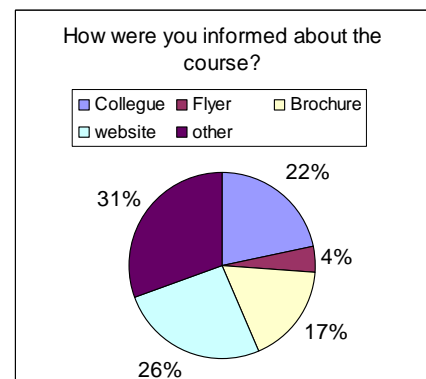
➤ "Without the help of the informed group members I couldn't have gone through the groupwork" (PhD student in literature studies)

The total length of the course was generally considered appropriate, and participants were content with dinners and accomodation. The only repeated comment was that there were very heavy meals. The time to be absent from their organisations did not present any major problems, although some had problems in getting visa for the UK. Participants were informed about the course primarily through colleagues and the website.

*Further suggestions for improvement:*

➤ "Appreciated some time off to see Oxford" (Industry representative)

➤ "More time required for the communication exercise" (PhD student in environmental biotechnology)



**Improvements for the second Advanced Course in September**

The evaluations and feedback will be used to improve the second course to be held 23 - 28 September 2007 in Oxford. They will also be offered to the lecturers for their information. The following improvements are envisaged:

- relaxing the time schedule;
- a sharper focus on the scientific background, specifically nanotechnological applications in food, medicine and the environment;
- further increasing the level and quality of interactions among lecturers and participants through hands-on training, group work, role play and time for informal discussion, specifically the communication exercise, debate session and media training;
- refining the group work on the communication plan by:
  - dividing the work more evenly over the week
  - allowing more time between draft presentations and final presentations
  - defining the exercise more clearly
- introducing a public relations / marketing point of view on the nanotechnology debate;
- formal certification / accreditation of the course if possible.

## Follow-up

A Nanobio-RAISE Hyve was established on the popular web networking site Hyves.nl soon after the course with the aim to create a long-term networking environment for further discussion and activities within the group. Most participants are now enrolled in the hyve and share their thoughts, pictures, documents and further information including the lecturers' presentations. The hyve will also be used to monitor further follow-up activities by participants and will serve to perform evaluations on the longer term. Participants in future courses will also be introduced to the Nanobio-RAISE hyve in advance to prepare for the course and to inform with previous participants for general questions and advice.

Apart from the organisation of the second Advanced Course in Oxford, plans are underway to organise similar courses based on the existing format in (Eastern) Europe and Asia. Several participants have agreed with the organisers to disseminate information and organise follow-up activities in their own countries.