nature materials Vol. 2 No. 8 August 2003 www.nature.com/naturematerials

Responding to 'nanotech' concerns

For emerging areas of science and technology, public acceptance is a vital precursor to sustaining their development. Scientists and industrialists working with genetically modified (GM) foods have learned this the hard way. There are now signs on both sides of the Atlantic that funders of nanotechnology research are starting to take the issue of public acceptance seriously and learn from others' mistakes.

In the United States, two bills dealing with nanotechnology have been submitted to Congress over the past few months. Both address the need for coherent, multiyear planning and increased interdisciplinarity, and emphasise the need for serious evaluation of the ethical and societal aspects of nanotechnology.

The House of Representatives bill[1] provides $2.4 billion for nanotechnology research and development over the next three years, and advocates simultaneous studies into the ethical and societal concerns surrounding nanotechnology. The bill also highlights the importance of public input and outreach.

The Senate bill[2] takes a more centralized approach by calling on the National Science Foundation (NSF) to establish a new 'Center for Societal, Ethical, Educational, Legal, and Workforce Issues Related to Nanotechnology' with annual funding of $5 million per year. It also makes provision for a study, to be produced within six years, to assess what is needed to ensure the development of safe nanotechnology. A compromise bill from the House and Senate is expected to be passed by the end of the year.

European efforts seem muted in comparison to the more proactive — though still paper-based — US proposals. In June, the UK government commissioned an independent study by the Royal Society[3] and the Royal Academy of Engineering with an ambitious remit: to define what is meant by nanotechnology, and identify its applications, assess the potential health, safety and environmental impacts, consider ethical and social issues, and identify areas where additional regulation needs to be considered. And all that before Spring 2004. Individuals and organizations are being invited to send in their views — we urge you to do so.

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CAN NANOTECHNOLOGY BYPASS THE PROTESTS AND PUBLIC RESISTANCE THAT HAVE DOGGED GM TECHNOLOGY?

The UK study was initiated in response to a media brouhaha initiated by Prince Charles when he raised concerns about the possible risks of nanotechnology earlier this year. At a public meeting held in Brussels in June, a group of European Parliamentarians also raised the alarm — going as far as calling for a moratorium on nanotechnology research.

Europe would do well to look at the proposed US model, which offers a long-term, interdisciplinary vision and an emphasis on public outreach and dissemination. The sixth framework programme of the European Commission (EC)[4], running until 2006, has a €1.3 billion budget for new materials and production technologies, which encompasses nanotechnology-related research. The Commission has not neglected the importance of public acceptance — projects submitted under the first call for proposals should, where appropriate, address social and ethical issues. But when asked, many framework project coordinators readily admit that they have not had the time, nor have the expertise, to address this aspect of their proposals in detail. The most we can hope for is a few new nano-websites and public conferences.

And although it is important for researchers to take responsibility for the impact of their work, it is also unrealistic to expect researchers battling with the complexity of running a networked project — many will involve over 20 research groups — to devote much attention to concerns that they may not, ultimately, be evaluated on.

The Commission is likely to propose to member states that a specific request be made for projects on the ethical, legal and social aspects of nanotechnology, and on its impact on health and the environment in the second call for proposals later this year. A step in the right direction — but there will be no guarantee of any coordination between accepted projects or that they will address the most pertinent questions.

A joint EC–NSF workshop held in 2002 recommended more European–US collaboration in facing up to the challenge of studying the societal and ethical aspects of nanotechnology. If the global nanotechnology research community is to have as much public impact as 'anti-nano' concerns, time is of the essence and collaboration vital.

References

1. House of Representatives bill (HR 766): http://www.house.gov/science/press/108/108-054.htm
2. Senate bill (S 189): http://thomas.loc.gov
3. Royal Society: http://www.royalsoc.ac.uk/nanotechnology/
4. European Commission: http://www.cordis.lu/fp6/nmp.htm