

2. Information obtained at a meeting between five Cambridge residents, a member of GM Freeze, BASF and NIAB (National Institute of Agricultural Botany, which will perform the trials) on 26 March 2007.
3. See note 2.
4. Skogsmyr, I (1994). Gene dispersal from transgenic potatoes to conspecifics: A field trial. *Theoretical and Applied Genetics*, 88, 770-774.
5. See note 2.

6. O'Callaghan, M and Glare, T R (2001). Impacts of Transgenic Plants and Micro-organisms on Soil Biota. *New Zealand Plant Protection*, vol. 54, pp. 105 – 110.
7. Suurkula, J (Ed) (2001). Genetically Engineered Crops – A Threat to Soil Fertility? <http://www.PSRAST.org/soilecolart.htm>.
8. Smith, J M (2004). Seeds of Deception: exposing corporate and government lies about the safety of genetically engineered food. Green Books Ltd., Devon. See Chapter 2: 'What Could Go Wrong – A Partial List'.

9. Personal communication from Dr Jonathan Latham, 25 March 2007.
10. Ho, M W (2007). GM-Soya Fed Rats: Stunted, Dead, or Sterile. *Science in Society*, vol. 33.
11. See note 8. Jeffrey Smith includes such anecdotes between the chapters of his book. See also Novotny, E (2002). A summary of Chardon LL Report I: Non-suitability of Genetically Engineered Feed for Animals. http://www.sgr.org.uk/GenEng/animalfeel_all.pdf

Patents and conflicts of interest: are scientists acting ethically?

Does the patent system encourage inappropriate commercial influence over biotechnology research? Helen Wallace argues that it does, and invites us to take part in an investigation to uncover and address the reality.

At its inception, the field of biotechnology proved a challenging development for the patent system. Patents allow applicants to claim a monopoly on inventions for 20 years or more. The idea is to reward the inventor – or whoever has invested financially in the research – by preventing competition, so that they can charge higher prices for the products of their research. In return, inventors must disclose information about their invention in the patent application.

But biotechnology exploits existing natural phenomena or entities, and discoveries about nature were not originally considered patentable. Patents were intended for novel inventions that had commercial uses. However, the strong commercial interest in biotechnology has since forced the scope of patentability to widen so that gene sequences, micro-organisms, cells, and plants and animals produced through genetic modification are now the routine subject matter of patent applications.

Such patents are controversial in principle because they allow discoveries about nature to be tied up in a restrictive commercial contract. They have also been criticised on the grounds that they may restrict access to useful products and research tools (harming both health and science) and, more broadly, because they reward only certain types of research and knowledge and encourage 'biopiracy' (the commercial appropriation of indigenous knowledge).

There is another issue – which is whether patents create conflicts of interest, for example by encouraging the scientists that claim them to hype the benefits of their research for greater reward. There is evidence to suggest that this may indeed occur. GeneWatch UK's former director, Sue Mayer,

conducted a survey of papers related to molecular biology and genetics that were published in the journal *Nature* over a six-month period between January and June 2005. Of the 79 papers considered, four had declared that certain authors had competing financial interests. Seven papers in which no financial interests were declared had authors whose names were also on patent applications that were based on the research in the paper or were closely related to it. Another paper had two authors with connections to biotechnology companies that were not disclosed. So, two-thirds of the papers in which the author might be considered to have competing financial interests did not disclose them¹.

Depending on the policy adopted by their institution, scientists who are named as inventors on patent applications may or may not benefit directly from any royalties. Either way, they may also benefit indirectly from being named on a patent application, for example through career advancement or further funding for research. Failure to disclose such interests may undermine the authority that science can claim for independence and impartiality.

In two of the cases in Sue Mayer's study, the published papers were accompanied by press releases claiming that the research would lead to new treatments and other applications.

Hype about biotechnology has been widely criticised for misleading the public and distorting research priorities. Although the media usually gets the blame for distorting science, a 2002 study of press releases from medical journals found that they did not routinely highlight the limitations of the studies publicised, nor the role of industry funding, and that data were often presented using formats that may exaggerate the perceived importance of findings².

It is time for scientists and journal publishers to take the issue of conflicts of interest more seriously. Self-policing is clearly not working; sanctions may be needed. One potentially effective sanction that the US Center for Science in the Public Interest has proposed is for journals to refuse publication for a certain period of the work of any authors failing to declare their interests in submitted papers³.

In addition, we need a much broader debate about how science and research priorities are distorted by commercial interests including, but not limited to, patenting.

GeneWatch UK is currently conducting a major study on how corporations influence research priorities in the biosciences, in Britain and via the European Framework Programme. We are interested in how and why some research questions in health and agriculture are funded while others – often more important ones – are not.

Please contact me at <helen.wallace@genewatch.org> if you have useful examples or information about how the research funding system works. We hope to produce a report that helps SGR members and others to challenge and ultimately to change how research funding priorities are decided, and to encourage decision making that is more democratic and that acts in the interests of public health and sustainable agriculture.

Dr Helen Wallace is Director of GeneWatch UK.

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