

## Tea but no cake

**As Japan strives to encourage academics to work more closely with industry, progress is hindered by strict government regulations, researchers' fear of criticism and industry's reluctance to fund research that may not bring profits.**

For years, officials in Japan's Ministry of International Trade and Industry (MITI) and their somewhat less enthused colleagues in the Ministry of Education, Science and Culture (Monbusho) have been trying to encourage academics to work more closely with industry.

Earlier this year, regulations were eased to allow university faculty members to assume executive positions in industry (see *Nature* 403, 589; 2000), and now a new fund has been created to encourage interaction between the universities and industry (see News, pages 925–926). But if these measures are to have any effect, some deeply embedded attitudes — reflected in ideas about patenting and in some seemingly petty regulations — will have to be overcome.

As public employees, university researchers often hesitate to join hands with industry, fearing criticism that they are seeking to profit from research done at the public's expense. At the same time, individual researchers are hesitant to put in all the hard work needed to produce a proper patent for industrial use if they cannot profit from it. Under current regulations, short of going through what many consider a prohibitively laborious evaluation process, all patents and royalties revert to the university, not to the individual.

For its part, industry is loath to fork out money for university research when patents are unlikely to be filed promptly or written with great enough breadth to promise high returns. It is also concerned that patents are going to be tied to conservative public institutions, rendering their use or sale dependent on lengthy, bureaucratic deliberations. In the current state of play, there is "no hope that we can win in the patent war", one official laments.

Then there is what might be termed 'the cake problem'. University and national institute researchers are being encouraged to work with

industry, but strict regulations laid down this March (the same month as those allowing university faculty members to assume executive positions in industry) limit their personal interaction. As one frustrated researcher puts it: "We can't even have cake together. Tea is probably OK. It's hard to tell exactly." Such regulations even prohibit university lecturers from having lunch with graduate students, lest their ability to evaluate them objectively is compromised.

The background to these regulations lies in Japan's unfortunate recent history of golf-club memberships and fancy dinners being used to bribe public officials. The blanket coverage of all public employees, including university staff, may seem arbitrary. But legislators probably fear that publicly funded researchers (and thus public resources) are vulnerable in their collaborations with industrial partners — a criticism that arises even of the university–industry partnerships that are now well established in the United States.

Although recession has cut into Japan's vaunted industrial research sector, university–industry collaborations have the potential to play an important role in sustaining Japan's industrial might. But over-zealous efforts to protect researchers from being tainted by contacts with commerce are likely to foil the government's efforts to bring industry and the universities together.

Academics' lack of familiarity with the patent system is an additional impediment to progress. Setting up some technology licensing offices at the universities could go a long way towards addressing that problem. But, if scientists are going to respond actively and enthusiastically to its initiatives, the government will have to coordinate its efforts better and devise a workable regulatory framework for interaction between universities and industry. ■

## Awkward inconsistencies of a stem-cell rule

**The US government's clever interpretation of the law lets stem-cell research proceed, but leaves it exposed to challenges.**

The revised guidelines for funding human embryonic stem-cell research published by the US National Institutes of Health last week provide an imperfect solution to an insoluble problem. The research potential of the cells demands that NIH-funded biomedical researchers should be allowed to use them. Embryonic stem cells can divide for ever and, with work, could be steered into becoming virtually any other cell type. Harnessing stem cells could one day provide treatments for spinal cord injury, neurodegenerative diseases and diabetes. But many in the United States do not believe this outweighs the moral price of deriving research materials from discarded human embryos.

The guidelines allow federal funds for stem-cell research but not for the derivation of the cells themselves. They satisfy US researchers' immediate concerns, but they rest on fragile logic. Researchers who receive federal funds to study the cells will end up using federal grant money to pay those who derive the cells anyway. Opponents of abortion correctly point out that the rules do not clarify existing laws against embryonic research, but rather circumvent them. They say funding experimentation tacitly supports derivation, and the destruction of embryos which that entails.

Researchers on federal grants worry that privately funded colleagues will gain an edge in experimental manipulation of stem cells which they derive for themselves. NIH-funded researchers will be limited to the cell lines provided by private firms, rather than being free to create and tailor lines to meet their own needs. Scientists in Britain and elsewhere will probably gain permission to both derive and experiment on embryonic stem cells (see *Nature* 406, 815; 2000).

Reliance on the distinction between use and derivation leaves the future of the research uncertain, subject to the influence of politics and of the courts. If vice-president Al Gore wins the US presidential election, he will be inclined to let it continue under the NIH guidelines. But if George W. Bush prevails, he could easily pass an executive order banning all federally funded stem-cell research.

A bill proposed by Senator Arlen Specter (Republican, Pennsylvania) to allow funding for use and derivation of embryonic stem cells would end the ambiguity. But the bill hasn't yet been brought to a vote in the Senate and will struggle to muster support in the House of Representatives. Progress must await the outcome of the presidential and Congressional elections in November. ■