

happen to the research budget from one year to the next. This discouraged bold thinking and long-range research plans, he said.

According to Frederickson, NIH should fund 5,000 new "noncompeting" research project grants, in addition to keeping previous years' commitments to projects lasting two and three years. In this way, researchers would know there would be 5,000 research project grants available for the best proposals. As a corollary, Frederickson proposed that training grants should be stabilized, with the budget allowing for 10,000 of these, each year. The numbers were arbitrary and widely known to be a budget ploy, but they had the salutary effect of keeping everyone's attention on a few key concepts for the health of research: stability, availability of money for new projects, encouragement to young researchers.

Sources close to the NIH budget process say, however, that last December, when NIH received a 1983 budget figure, it calculated that it would allow funding for only 3,500 new research project grants, embarrassingly far below the 5,000 goal publicized by Frederickson, and well below the 4,741 new project grants funded in 1982. Schweiker therefore told NIH to change the budget, keeping the same total, so that the number of new project grants would be above 4,000. As a result, NIH proposed taking the cut in the administrative side, in direct costs, to avoid an enormous fight with scientists claiming that NIH was abandoning its commitment to innovative research.

So now the universities and research institutions are asking why they should be singled out for cuts — and what Pandora's box has been opened for future years.

According to John F. Sherman, former deputy director of NIH and now vice-president of the Association of American Medical Colleges, which protested to Schweiker in March, it is likely that the 10 per cent cut proposed for 1983 will set a precedent for unpredictable cuts in NIH's indirect cost allowances in future years, and perhaps lead to a lowering of indirect cost allowances by other federal agencies.

"If there is anything to divide faculty from academic administrators, this is it", says Sherman. "The institutions' representatives are frantic. They see no solution except for Congress to add the money. Whereas the faculty are more willing to see indirect cost reimbursements cut in order to maintain a higher number of competing research awards."

If NIH's indirect cost reimbursements are cut, however, institutions may be forced to reduce the size of their research programmes. And if NIH awards fewer research project recipient grants, the institutions will have a smaller base for seeking indirect cost payments. To hear them talk now though, the two sides seem not yet to have realized that they have a common cause. **Deborah Shapley**

Commercialization of research

Patent views

New York

Close on the heels of the closed meeting of five prominent university presidents at Pajaro Dunes, California, last month (*Nature* 8 April, p.479), the first of many other, open meetings was held last week in New York to discuss the growing issue of commercialism in academic research. This one was sponsored by the New York Bar Association's patent committee. Participants included Dr Steven Muller, president of Johns Hopkins University, Joshua Lederberg, president of Rockefeller University and A. Thomas Bartlett, president of the American Association of Universities (AAU).

The participants concurred with the conclusions of the Pajaro Dunes meeting concerning the problems of the commercial use of university-based genetic engineering research. In the words of Dr Muller, "the hazards to universities are manageable". It seemed clear at the meeting, though, that there can be no sweeping, general rules covering every campus and field of research in the nation, and that university policies will be built up step-by-step.

Those at the bar association meeting felt that university faculty would be well able to defer publication of key research in the open literature to satisfy patent needs of the commercial partners. Dr Lederberg noted that while such delays are "natural hindrances" to normal university activity, they should be acceptable to faculty so long as delays are reasonable. Dr Muller pointed out that Johns Hopkins recently passed regulations requiring university researchers to publish in the open literature and to discourage undue secrecy while faculty file for patents. The new regulations also place the burden of proof on faculty members who claim that a private invention has no relation to their university work.

One problem highlighted in the discussion was that European visitors to US campuses could pick up innovations in the course of seminars and talks with US scientists, go back to Europe and patent them, leaving the US academic inventor of the idea with no protection. This possibility arises because European law awards patents to the first to file for one, who may not necessarily be the inventor as in American law.

There was a call at the New York meeting for a re-examination of the relationship of professor to university and the traditional rights of university employers and their faculty employees, often ignored in faculty contracts. For example, can a university pressurize one of its professors to pursue a patent if he is reluctant to do so?

Dr Lederberg encouraged universities to help their faculty negotiate their outside contracts and to define extramural and intramural roles. He was concerned that

many faculty are under-selling their services, and recommended that they charge six times their academic rate of pay for outside consultation. The universities can benefit, he said, by arranging that these fees be shared equally between a faculty and member and the institution.

Finally, several details of the best known university-industry agreements are now available to university presidents seeking to negotiate their own industry arrangements. University presidents seem to be making a practice of circulating current or draft agreements with industry among themselves for purposes of comparison.

Last year, Representative Albert J. Gore (Democrat, Tennessee) attacked the universities for their new industry ties and asked AAU to establish general guidelines on the matter. But the New York meeting seemed to confirm that such general guidelines are unlikely to emerge, or be seen as practical. As AAU president Bartlett said, "we are groping our way into the future". **Michael D. Stein**

Dutch pharmaceuticals

New era vaccine

Waalre, The Netherlands

Intervet International, a Dutch veterinary pharmaceutical company, claims to have marketed the first vaccines produced through recombinant DNA technology. The Dutch are proud to have beaten two American companies — Norden Laboratories and Cetus — which recently announced that they were developing a vaccine against pig scours for introduction on to the market within two or three years. Intervet marketed two scour vaccines at the end of March.

The vaccines are intended to prevent infectious diarrhoea of pigs and calves, a major cause of which is the *Escherichia coli* bacterium. The bacterial components implicated in causing scour in pigs and calves are the adhesion factors K88 and K99 respectively. Combination of these factors with a special adjuvant was used by Intervet to produce a vaccine which, when given to the sow or cow, causes the animal to produce protective antibodies which are passed on to their offspring through the colostrum or first milk. In the past adhesion factors K88 and K99 have been purified from wild strains of bacteria isolated from the field. Using cloning techniques Intervet transferred the genes responsible for the production of the K88 and K99 into a laboratory strain of *E. coli* (K-12) which then produces a much greater quantity of antigen for the preparation of the vaccines.

The work to produce these strains started in 1979 in collaboration with the Dutch Institute of Health and was later transferred to the DNA research group within Intervet's mother-company Akzo Pharma, itself part of the Dutch chemical multinational Akzo. **Casper Schuurings**