US universities

Task force quests for financial wizardry

Washington

THE Congress's Science Policy Task Force was told last week that between $5,000 million and $20,000 million might be needed to bring US university research facilities up to acceptable modern standards, and that the existing partnership between universities, industry and government "may not be adequate" for the task. While the general sentiment has been heard before on Capitol Hill, this particular warning was surprising because it was uttered not by some university president making a cap-in-hand appeal for a new laboratory, but an assistant director of the White House's Office of Science and Technology Policy, Dr Bernadine Healy.

In two days of hearings on "government and the research infrastructure", the task force heard a variety of prescriptions for improving universities' access to state-of-the-art equipment. In Healy's view, both government and universities must take their share of the blame for the accumulated deficit of research hardware. Universities, she said, have often behaved like dependants of the government, "abdicating their responsibility for infrastructure and biding their time until federal facilities and programmes were resumed". The government, for its part, has "attempted not to invest in the research enterprise, but to procure packets of research results at the lowest possible prices".

The Science Policy Task Force, a bipartisan group established within the House of Representatives' Committee on Science and Technology, has been hearing from witnesses in government and academic life since mid-April. The hope is that a preliminary report will be completed by May next year, with a final version available the following October. Witnesses so far have fallen into two clearly defined camps: those who believe that the present system for provision of research facilities is working well, and those who feel that catastrophe is imminent.

The latter group argues that universities grew accustomed to 15 per cent annual increases in their operating research budgets during the heady 1970s, and even during the early years of the first Reagan presidency. As long as the hefty increases continued, universities were cushioned from the effects of the lack of investment in buildings and large items of equipment: most of the federal programmes specifically geared to improving research infrastructure had dried up in the early 1970s. Now that the days of 15 per cent annual increases are seemingly over, the price of years of underinvestment in the infrastructure will have to be paid.

Healy, speaking with the advantage of inside knowledge of the White House's soon-to-be-completed study of the universities chaired by David Packard, said that a multi-billion dollar programme might improve conditions, but that changes in attitudes would also be needed to put things to rights. Specific proposals include the following:

- the proportion of the $20,000 million civilian research and development budget spent in universities should be increased above its present level of 30 per cent;
- unrestricted donations of equipment and contributions to renovations should be encouraged (presumably by favourable tax exemptions);
- amortization periods for both equipment and buildings assumed in federal grants should be reduced from their present unrealistically high levels (50 years and 15 years respectively) to something closer to reality (say, 20 years and 6–8 years);
- and (as a strong hint) the government should stop trying to "micro-manage" equipment purchases and reduce the burden of excessive documentation.

The need for innovative financial approaches was echoed by Dale Corson, chairman of the government/university/industry research round table sponsored by the National Academies of Science and Engineering. Corson asserted that obsolescence of research instruments is limiting productivity, and that in engineering, in particular, this state of affairs is increasingly driving away potential recruits into the field.

Corson argued that the problem has arisen largely because of the increased cost of research instruments; he proposed that more use should be made of shared facilities and that more facilities should be financed jointly with state governments. Besides exploring new ways of providing equity, the traditional form of financing for research facilities, universities should also look at new ways of debt financing. Corson asked for the removal of legal obstacles that, in essence, prevent the promise of federal grants from being used as collateral against loans.

Summing up in a virtuoso exhibition of Washington bureaucratese, Corson asked that these initiatives be brought together in a national programme that will "regularize the facilities appropriation process" and will "leverage federal funds to the maximum degree possible". Corson's proposal will doubtless be aired in July at a conference on academic research facilities sponsored by the government/university/industry research round table and federal agencies.

Tim Beardsley

Growth hormone

FDA ban on pituitary product

Washington

FEARS that growth hormone extracted from human pituitary glands may spread the rare neurological condition known as Creutzfeldt-Jakob disease (CJD) have prompted the US Food and Drug Administration (FDA) to stop the use of all human pituitary products. Those most immediately affected are the 2,500 hypopituitary dwarfs in the United States, who depend on the hormone to maintain normal rates of growth; clinical research on other pituitary products has also been suspended. FDA is now under strong pressure to approve the general use of a recombinant human growth hormone product manufactured by Genentech Inc. that has been under FDA review for the past 18 months.

The two commercial companies that have now withdrawn their human-derived growth hormone products, KabiVitrum and Serano Laboratories, point out that the evidence against them is at best indirect. There have been three recent deaths attributed to CJD; among young men who received crude pituitary extracts as children; suspicions were aroused because the disease is normally found only in those over 40. Only one diagnosis has been confirmed, however, and no autopsy was carried out on one of the suspected cases. In the other two cases, there are other complicating factors that could explain infection by a slow-acting virus such as that believed to cause CJD; one was a diabetic who received frequent insulin injections, for example.

The deaths occurred among patients who had been treated under the National Hormone and Pituitary Program of the National Institutes of Health (NIH). Since the programme started, the purification methods used have improved markedly, and all growth hormone manufactured since 1977 has been through a final stage of column chromatography using Sephadex. The commercial manufacturers, who also use column chromatography, point to a study by Professor A.G. Dickinson of the University of Edinburgh which indicated that virus deliberately introduced into pituitary tissue was not detectable after the column chromatography stage of purification.

One argument against a link between CJD and growth hormone is that the hormone is produced in batches that are used to treat several hundred children. Even if only one batch had been contaminated, therefore, many more than three cases would be expected. There are not known to be any living growth hormone recipients with CJD symptoms, and a recent survey of 300 recipients in Switzerland found no cases of CJD.

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