

US science budget

Congress sets upper limits for federal agencies

Washington

THE US Congress has not done as badly by research this year as many had feared it would. In spite of the strong political pressures to be seen doing something to reduce the federal budget deficit, attempts to freeze some appropriations at 1985 levels were defeated. But Congress conspicuously failed to meet the administration's budget requests for several agencies in the new financial year. The National Science Foundation (NSF) and the National Aeronautics and Space Administration (NASA) are among the casualties.

NASA's budget for research and development in the year which began on 1 October is fixed at \$2,757 million, the figure that had been urged by the House of Representatives; the Senate had wanted an extra \$20 million. The sum now agreed represents an increase of \$335 million over last year's figure, but is significantly less than the \$2,881 million the administration had requested.

Specifically, Congress has denied the administration's request for \$226 million for development of the space station, putting a cap on the level of spending next year at \$205 million. Of this, \$5 million is set aside for the robotics and automation thought necessary for the initial operating capability of the space station. Congress seems concerned that budgetary restrictions in future might hold up space science if the administration persists in its plans for a permanently manned structure from the start.

A cap of \$5 million (with a further \$5 million available upon request) has also been put on development of the solar optical telescope, a 1.25-metre instrument that would form the basis of a solar observatory on the space station. This will mean a significant delay for the project, for which \$30 million had been sought in 1986. Other capped projects include: upper stages (\$122 million); the space telescope (\$127 million); the gamma-ray observatory (\$87 million) and the Galileo spacecraft (\$40 million). The funds allotted to space flight, control and data communications are \$3,398 million, about \$100 million less than requested.

The total appropriated for research and related activities by NSF is \$1,352 million, an increase of about \$40 million over last year. The administration's request had been for \$1,398 million. The conference report of the appropriation bill dealing with NSF (in which differences between the House and Senate are patched up) specifically notes that sufficient resources must be made available to support advanced scientific computing and the ocean

drilling programme, as well as efforts to increase women's and minority participation in science and engineering.

NSF is also given \$115 million for the US Antarctic programme and \$55.5 million for science education, which represents a compromise between the figures urged by the Senate and the House. The foundation also has (to Congress's displeasure) \$31.5 million in its science education budget unspent from last year, so that the total for this purpose will be \$87 million, a dramatic increase on what was spent last year. The Very Long Baseline Array is, however, capped at \$9 million;

astronomers had hoped for \$11.5 million for the project. The increase in NSF's total budget, at close to 2 per cent is in striking contrast to the 15 per cent increase it got the year before.

Congress has also for the first time in several years, passed an authorization bill for NSF. The authorization may have already been influential in persuading Erich Bloch, NSF's director, to restore a \$1 million programme on ethics and values in science and technology which he had previously planned to axe. Otherwise, the bill will have little immediate effect, although it is likely to focus attention on particular areas such as fundamental engineering research and research facilities in universities, which NSF is now directed to study systematically. The bill will also give the National Science Board the authority to delegate grant approval authority to the director.

Tim Beardsley

British research funds

Government helps to plug dyke

BURIED in the British government's disappointing announcement last week of its spending plans for higher education and research in 1986-87 is some good news for the research councils, which will have an extra £15 million a year to spend. This is seen to result partly from a sombre report on the loss of British scientists overseas prepared by the chairman of the Advisory Board for the Research Councils (ABRC), Sir David Phillips, and published last week.

The Chancellor of the Exchequer's autumn budget statement last week makes it plain that the recurrent budget of the universities is to be held at the levels proposed in January this year, which have been estimated to entail a cut of 1.6 per cent in real terms. Specifically, the university budget will be 2.5 per cent greater in cash terms next year than this, a rate of increase less than the inflation rate.

The research councils are dealt with more generously. The budget statement says that there will be an extra £15 million a year for each of the next three years, in addition to last year's emergency grant of £27 million (spread over three years). A further £10 million will be distributed to selected university research centres for the purchase of equipment.

The immediate explanation of the government's generosity seems to be that Sir Keith Joseph, Secretary of State for Education and Science, has been persuaded of the reality of the rate at which technically qualified people are being lost to Britain. ABRC has been warning the government regularly about the numbers of scientists moving overseas, but the government has repeatedly dismissed the claim, made most forcefully in ABRC's *Science and public expenditure* statement earlier this year, on the grounds that the

evidence is "anecdotal".

ABRC has therefore carried out a survey among 40 leading research groups in Britain (38 in universities and two at Medical Research Council (MRC) units). It now says that its data reinforce its "firm impression" that there is a serious loss of talent, not only by emigration elsewhere but also to industry and to careers in Britain not based on science.

According to ABRC, the reasons given for the loss of talent are "remarkably consistent": more opportunities elsewhere, better pay and prospects, better facilities, frustration about difficulties in winning research grants in Britain, aggressive recruiting by overseas employers and the greater receptiveness of US industry to new ideas.

Although none of these is new, scientists agree that the gap between the United States and Britain has widened in the past few years. Dr Sydney Brenner, director of the MRC Molecular Biology Laboratory in Cambridge, told ABRC that British university research (with a few exceptions) has not been able to keep pace with international standards and has often declined to a point from which recovery is impossible. Engineering was singled out by ABRC as a discipline in urgent need of support; the two Cambridge engineering departments included in the survey reported that 75 per cent of their recent research students have been lost to overseas appointments.

ABRC has not yet decided how to divide Sir Keith's extra money among the four research councils. But as long as the government continues its last-ditch approach to science funding, the brightest scientists are unlikely to prefer an uncertain home career to the tangible rewards elsewhere.

Maxine Clarke