

cheaper version of the mission, using real rather than synthetic aperture radar, which could halve the estimated \$500 million cost and might still be launched by the end of the decade.

VOIR was initially proposed by the Carter Administration two years ago for a launch from the space shuttle in 1986, with the launch being merely postponed to 1988 by the Reagan Administration last March. It is the major casualty in NASA's space science budget, which otherwise is in a much healthier state than had been widely feared.

Both the Galileo mission to Jupiter and the gamma-ray observatory, which had been threatened by the Office of Management and Budget, have survived. Efforts to cut back substantially on space science seem to have been frustrated by strong pressure from the space science community, and fears that the cuts could have a traumatic effect on NASA's Jet Propulsion Laboratory in Pasadena, California.

NASA will not be providing any money for the development of the Centaur rocket as an upper stage for the space shuttle, previously suggested as an alternative to the delayed Inertial Upper Stage.

One area to be cut will be the analysis of data from other planetary missions, being reduced from \$61.8 million in 1981 to a suggested \$26.5 million in 1983. NASA officials say that although data will continue to be received and analysed from the Voyager spacecraft, now on their way to the outer planets, it may be necessary to stop tracking or taking data from the Pioneer spacecraft.

Delay for *Explorer*

The National Science Foundation has abandoned plans for a major deep-sea drilling programme aimed at investigating the margins of the continental shelf which was to have been conducted from the converted spy ship, *Glomar Explorer*.

Dr John Slaughter, director of the foundation, announced last Saturday that the Reagan Administration would not be requesting any further funds for the so-called ocean margin drilling programme, which was to have been jointly funded with a number of private oil companies.

According to Dr Slaughter there were two reasons for abandoning the project, first formally proposed by the Carter Administration two years ago: a lack of sufficient funding, given general pressures on the federal budget; and the lack of interest by companies in making the type of investment required to convert the *Explorer* and fully equip it.

The proposal has also been a controversial one in the scientific community, since it would have meant curtailing funds for the *Glomar Challenger*. Dr Slaughter said that a decision will be made next summer on whether to refurbish the *Explorer* as a replacement for *Glomar Challenger*.

David Dickson

US defence research

Signs of doubt

Washington

The Reagan Administration is proposing in its latest budget recommendations to Congress (see p447) that there should be an increase in the amount of university-based research sponsored by the Department of Defense in the fiscal year 1983 beginning on 1 October. But the universities themselves are ambivalent about this promise.

Many universities view Defense Department support as a necessary substitute for other federal funds whose sources are rapidly drying up. However, increased military spending on campuses is beginning to act as a catalyst for protest groups opposed to the Administration's policies.

University administrators seem to have fallen in with recent moves by the Department of Defense to increase support for basic research, while fearing some of the restrictions that this money may bring with it. Although many universities still insist that no classified research is carried out on campus, academic leaders have been quick to reassure Congress that little remains of the anti-military sentiment of the 1960s.

Dr Alan Bromley, for example, professor of physics at Yale University and president of the American Association for the Advancement of Science, told the House of Representatives science and technology subcommittee last week that the time to rebuild bridges between the Pentagon and the university research community was "long overdue".

Yet the enthusiasm for increased military support of university research is far from unanimous and there have already been rumblings of protest:

- 170 people from the University of California were arrested last Monday after demonstrating outside the Lawrence Livermore National Laboratory — run by the university on behalf of the Department of Energy — in protest at the laboratory's research on the design of nuclear weapons.

- At the University of Michigan, the students' union has hired a historian to analyse the Defense Department's support of research in the university and in local companies.

- A demonstration was held last summer at the University of Wisconsin's Madison campus over a visit by army scientists to the university's Mathematics Research Center, sponsored by the Department of Defense, to talk about military needs in mathematics. A group has since been formed to study the university's links with the Department of Defense, and a small organization has been set up to stimulate and coordinate efforts by similar groups elsewhere.

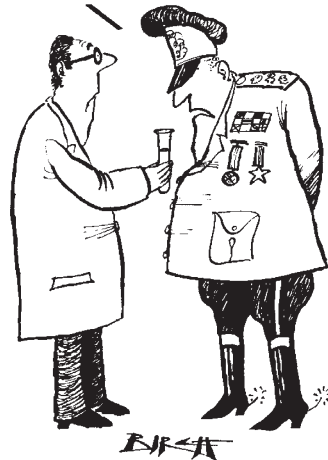
- At the Massachusetts Institute of Technology, about 1,000 people held a

demonstration when Vice-President George Bush spoke to the institute's board of trustees. Several study groups have since been holding regular meetings on military topics, and 30 faculty members have just launched a disarmament project for the spring term.

- There have been protests at Rutgers over a statement by its president, Dr Edward J. Bloustein at a congressional hearing last year that he would be prepared to consider lifting the current ban on classified research on the campus.

- Last November, "teach-ins" were held at 148 colleges and universities across the country on the arms race. The meetings were coordinated by the Boston-based Union of Concerned Scientists, which claimed that they had been the largest anti-war demonstrations since the Vietnam era.

"VERY GOOD —
WHAT DOES IT KILL?"



Nobody suggests that these isolated protests represent a significant national movement — at least not yet. Several factors have produced a less fertile environment for protest than the 1960s, ranging from the more conservative outlook of most undergraduates to tight research budgets that can lead to a muting of criticism of the sources of research support.

At the same time, some see as significant the fact that each individual incident has taken place on campuses where there were fierce clashes over military research in the 1960s and early 1970s.

University representatives lobbying the Pentagon for more research funds in Washington tend to play down the potential campus disruption. Even the protesters agree that, although anti-military feeling on campuses has grown rapidly over the past two years, it has yet to coalesce into a major source of opposition.

But the military is still treading warily. When the Defense Communications Agency agreed to sponsor a National Science Center for Communications and Electronics — largely sponsored by the private sector — to stimulate science and engineering education, it chose to concentrate its initial efforts on high schools rather than universities.

Building links with the academic

community "could be a very delicate issue" the agency's director and the principal sponsor of the centre, Lt Gen. William Hilsman, said in a recent interview, stating that the schools had been chosen because they were less likely than universities to view the military interest in education as a threat to academic freedom.

Meanwhile the universities themselves are hoping to receive some guidance from a report recently completed by the Defense Science Board for the Department of Defense. The report is expected to recommend the development of clear guidelines to separate basic research from that which may be of a more practical nature — and hence require special protection and treatment. **David Dickson**

British university crisis

Cuts with tears

British universities, still in chaos over how to meet cuts in government income over the next three years, were relieved last week to learn that they are to be compensated for payments made to academics who must lose their jobs. A letter from the University Grants Committee set out the terms under which they will be reimbursed for payments made to redundant staff. Essentially, the compensation scheme is that devised by the Committee of Vice-Chancellors and Principals and blessed by the Secretary of State for Education and Science a week earlier.

The approved scheme allows redundant academic staff below 50 years of age to claim one month's pay for each year of service plus one month's pay for every year of service in excess of five years or after their 30th birthday, whichever is the later. Staff over 50 will be entitled to compensation under the universities' scheme for premature retirement introduced a year ago. The grants committee says that it will not meet claims for compensation that are more generous than those now approved, which begs the question of who will pay if the courts decide that higher awards are just.

The universities' relief will also be tempered by other provisos spelled out in the committee's letter. Full reimbursement will be made only where universities convince the grants committee that redundancies are made in the interests of

economy and that resulting vacancies will not be refilled. Redundancies should also be "consistent with academic planning", a vague phrase thought to give the committee some come-back if universities fail to comply with its advice on general policy.

In the meantime, the end of January deadline by which all universities were to have submitted outlines of how they plan to adapt has passed. Most have sent the numbers of staff they plan to lose by the end of the next academic year, on which basis the grants committee will allocate the £70 million already set aside for helping with restructuring. It seems to be accepted that the sum will be inadequate to settle all claims, although the grants committee has not yet totted up those so far submitted. It is hoped, however, that the government will make more money available by the beginning of the following year.

Only about half the universities have managed to submit returns on how they plan to restructure operations. The grants committee will be looking at the returns later this month, when it will decide whether to reallocate money to those universities that have asked to be reconsidered. The committee is unwilling to say whether the returns suggest that the universities are following its advice, except that one or two of them look "a bit odd".

Some universities seem to have managed to get away with fewer compulsory redundancies than was originally expected. The University of Leicester, for example, plans to make none. The Association of University Teachers claims that success in minimizing compulsory redundancies may reflect the efforts of its members in putting forward alternative strategies for coping with the cuts. **Judy Redfearn**

Soviet dissidents

Helpers divided

Scientists campaigning for academic freedom and civil and human rights for their less fortunate colleagues cannot confine themselves to a single cause or campaign. This was the consensus of opinion at a one-day seminar at University College, Oxford, on 7 February, organized by the Scientific and Medical Committee for Soviet Jewry.

The main guest was Dr Mark Azbel, from the University of Tel Aviv, himself a former refusenik and convenor of the Moscow Sunday Scientific Seminars for Refuseniks, Dar Azbel, like most Soviet Jewish activists believes that a clear distinction should be made between the Jewish emigration movement and the dissident movement in the USSR. Any confusion between the Jews, whose only wish is to leave the Soviet Union, and the dissidents who would prefer to stay there and reform the system from within, is, he believes, dangerous to both movements, allowing the Soviet authorities to accuse the Jews of subversion and dissidents of

Small growth fund

The fund established by the Association for Research into Restricted Growth as a memorial to Mary Lindley, an assistant



editor of *Nature* who died in May 1981, has now reached £700. The group intends to use the money to help young people suffering from restricted growth in problems arising during their early education. Further donations should be sent to the Treasurer, Pam Worsfold, 8 Cotswold Avenue, Chelmsford, Essex.

being agents of international Zionism.

The other participants, however, felt obliged to disagree with him. Professor Paul Kessler from the Collège de France, who spoke on "Visiting Refuseniks in the Soviet Union", said that he could not in conscience, while on a visit to Moscow, visit refuseniks and refuse to visit dissident scientists who had also, though for other reasons, been expelled from their jobs. Dr Louis Cohen, executive secretary of the Institute of Physics, speaking on "Transnational science as an influence on Soviet science policy", talked not only of the work of his own institute which in 1978 had sponsored the parallel trial in defence of Dr Yurii Orlov, but also the valuable work of the American Association for the Advancement of Science, primarily on behalf of victims of oppression in South America and also for other human rights causes, including the refuseniks. Dr Gary Low Beer, who is both head of the Scientific and Medical Committee for Soviet Jewry, and a prominent campaigner against the political misuse of psychiatry, put the point bluntly and pragmatically. One cannot expect one's colleagues to campaign for a human rights cause in which one feels a special interest, if one is unwilling to reciprocate for the causes they favour.

In reply, Dr Azbel explained that he did not want to discourage scientists who wished to campaign for dissidents. Everyone, he said, must choose his own cause. But it was better to campaign for only one person at a time, rather than several in parallel.

His support of this line of action seemed inspired not only by practical considerations but by the Yiddish proverb that to save one life is equivalent to saving all humanity. The seminar participants, however, applauded him warmly, but clearly still favoured a unified stand by the scientific community as a whole, on all abuses of human rights and academic freedom, wherever they occur.

Vera Rich

Correction

In the note in News and Views by Dr R.J. Wilson in last week's *Nature* (4 February, page 369), the third paragraph should, except for a misunderstanding in the *Nature* office, have referred to the work of Professor David Weatherall and his colleagues in the Nuffield Department of Clinical Medicine at the University of Oxford; the article describing this work will be published in *Nature* shortly.