

# AAAS plans pressure on education

## Dismay at proposed NSF budget cut

Toronto

The American Association for the Advancement of Science (AAAS) has decided to devote a substantial proportion of its efforts over the next decade to reversing what the US Department of Education has recently described as a growing tide of "scientific illiteracy".

Concerned about the growing gap between scientists and technologists on the one hand and the public and congressional decision-makers on the other, the association plans a series of programmes aimed, in particular, at raising the general level of scientific and mathematics education in the nation's primary and secondary schools.

The announcement was made during the AAAS's 147th annual meeting in Toronto this week. On Sunday, the association's board passed a resolution pledging the AAAS to work with its affiliated science and engineering societies to reverse what it called a "damaging decline" of science and engineering education in the United States.

Mr William Carey, the association's executive secretary, later said that the Carter Administration's apparent intent to cut back expenditure on science education by the National Science Foundation (NSF) was "a severe malfunctioning of the bureaucracy".

This cut was occurring, he said, only two months after the NSF and the Education Department had delivered a report to the President which concluded that there had been a 15-year decline in the national commitment to excellence and international leadership in science, mathematics and engineering.

Mr Carey added that as a result of the Administration's decision to absorb cuts in the NSF budget by focusing in particular on its science education programmes, under the terms of the budget proposals which the President will present to Congress next week, science education would be reduced to only 7.5 per cent of NSF's efforts — the lowest figure for 30 years.

What concerns AAAS is not so much the quantity or quality of university science graduates — the department's report found little problem here, and suggested that where there were shortages or deficiencies, these would probably be corrected by market forces — but evidence of declining educational standards in schools.

Dr Allan Bromley, professor of physics at Yale and next year's president of AAAS, said that it had been a "dismal mistake" to

leave things in the hands of "professional educators". He cited, in particular, national surveys of educational achievement which demonstrated a general decline in scientific and mathematical abilities among high school students, as well as widespread evidence of the remedial action which universities and colleges were having to take with undergraduates enrolled in science classes.

"A whole generation of students is being short-changed" Dr Bromley said. "In physics, if you look at undergraduate curricula across the country, the first year is being increasingly devoted to teaching subjects that you would not have had to worry about 10 or 15 years ago."

Other AAAS officers were slightly less harsh in their criticisms. Current president Dr Frederick Mosteller of the Harvard School of Public Health pointed out that many subjects, such as calculus, were now widely taught in schools where they had been missing a generation ago. Retiring president Dr Kenneth Boulding spoke up in support of less conventional teaching methods, arguing that "education is becoming less important as a means of

learning".

However, what Dr Bromley described as a "severe crisis" in science education has spurred the AAAS into convening a conference of the heads of its affiliated societies to look at the health and priority needs of science and engineering education in the United States in the 1980s — and to make educational excellence in these areas a major theme of next year's meeting.

The association also intends to use its new monthly magazine, now called *Science 81*, to produce teaching materials for use in secondary schools, and it announced that Dr F. James Rutherford, previously associate director of NSF responsible for science education, and at present assistant secretary of the Department of Education, will join AAAS as adviser on science education to the board of directors after leaving office on 20 January.

"The AAAS cannot solve the problems on its own, but if we don't get busy, things will get worse" said Dr Mosteller, adding that both federal agencies and private industry would probably be approached to support the association's proposed activities.

David Dickson

## Slow progress on Greek reforms

As Greece enters the European Community (from 1 January) the universities are still in the throes of reorganization, with student unrest at some institutions. But the new Science Research and Technology Agency is in good shape, with two years of constructive work behind it, although the threat of its becoming ensnared in Greek bureaucracy remains. The hope is that the influence of the community will strengthen the recent tendency to reform.

The government's first attempt at university reform (see *Nature* 2 February 1978) met with strong opposition and the enforcement of some of the provisions of the new Law 815 had to be postponed. A committee was set up to make new proposals and these have now been presented to the government. The success of the committee, representing the fourteen university-level institutions in Greece, owes much to the way in which its chairman, Professor F. Mitsis, enjoys the confidence of all sides.

Much deadwood was painlessly removed from the academic profession by the provisions in Law 815 for voluntary retirement — in one department of the University of Athens only three out of twelve are still in post. Now there are many openings to be filled using new selection procedures.

The new draft bill would abolish the unpopular system of "chairs", in which professors were surrounded by a mixed bag of assistants. Instead subject "sectors" would be introduced, each consisting of at

least seven academics at three grades: lecturers, associate professors and professors. The short-term appointment of assistants, usually working for higher degrees, would also be allowed. Undergraduates are granted 20 per cent participation in all university bodies under the proposed law.

Examination regulations are being drafted separately, amid protests from student associations that as long as general conditions in the universities leave so much to be desired, students cannot be expected to attain high standards. At the Technological University at Athens there was a prolonged sit-in to protest against the system of semesters, considered unduly onerous by many students. And at the University of Athens chemistry students have been striking against the alleged harshness of a particular professor.

Greece's newest university, in Crete, remains in a critical state. Facilities are makeshift and most of the teaching depends on visiting lecturers from abroad. Permanent senior appointments are being blocked by the Athens-based administration committee, perhaps under the influence of the old establishment. Fotis Kafatos of Harvard is no longer a member.

For research, the outlook is more cheerful. More than two years ago the government invited Dr George Argyropoulos back from the United States to head the new Science Research and Technology Agency (see *Nature* 23 February 1978). The main achievement of the agency has been the introduction of