Keyworth and Press on basic science

Researchers to decide where funds go?

Washington

In the first coherent statement of the Reagan Administration's thinking on science policy, Dr George (Jay) Keyworth, the president's science adviser, said last week that the scientific community must be prepared not only to help identify areas in need of increased support, but also to say where support should be decreased.

The time of constantly growing budgets across the board had passed, Dr Keyworth said, and the scientific community's "best and most thoughtful judgement" was needed to identify areas to deemphasize as well as those meriting new emphasis. "To those who object to such undertakings, and to all of my scientific colleagues, I must say that if scientists do not make such choices, others will, but with less acuity."

Dr Keyworth was addressing a hearing of the House of Representatives Science and Technology Committee on the implications for science of the present budget reductions. At several points in his testimony, Dr Keyworth claimed that the Reagan Administration was promoting a fundamentally new approach to the government's responsibilities for science and technology. "I am proposing a federal role in research and development which is appropriate to the 1980s — appropriate to a national mood which calls for increased vigour and acceptance of responsibility by individuals and organizations in the private sector and decreased involvement by the federal government in many of our affairs", Dr Keyworth said.

Yet apart from promoting the need to trim research budgets to fit straitened economic circumstances, much of the substance of what Dr Keyworth had to say was similar to statements to the committee made by his two predecessors, Dr Frank Press, science adviser to President Carter and Dr Guyford Stever, adviser to President Ford. All three stressed the federal government's responsibility to promote basic research as a long-term investment in the future. And all agreed that short-term research and development should primarily be the responsibility of the private sector.

Dr Keyworth, in line with the overall policy of the Reagan Administration, emphasized that science policy had to be carried out in the context of other national policies such as national security, international relations, energy, social services and the economy. "For example, science policy, made without considering economic policy, is irrelevant", he said.

Dr Keyworth's immediate predecessor, Dr Frank Press, now president of the National Academy of Sciences, while accepting the need for financial restraint, gave last week's committee hearing a sharply different view. He advocated a ten-year "compact" between government, industry and universities to establish new national goals for the support of science. This would include commitment to an annual real growth of between 1 and 2 per cent in the scientific research budget; an additional 1 per cent growth to support special "targets of opportunity" in different fields; and a real growth of 1 per cent, equivalent to about $50 million a year in the contribution made by industry to university research.

To a large extent, however, the differences in the statements from Dr Keyworth and Dr Press were a reflection more of their different constituencies than of disagreements on substance. Both agreed that there should be a reduction in federal support for "demonstration projects" that should properly be taken over by the private sector. And Dr Press spoke of Dr Keyworth's "courage" in making uncomfortable decisions about what research projects should be cut.

Responding to a question about press reports that he had recommended the elimination of all new planetary exploration missions by the National Aeronautics and Space Administration (NASA) over the next decade — a proposal being discussed this week by President Reagan and NASA administrator James Beggs — Dr Keyworth emphasized the many scientific gains to be made from space shuttle missions, and suggested that this was one area in which direct scientific comparisons might be made.

Expanding on a theme of several of his earlier speeches, Dr Keyworth told the committee that there were several reasons why the United States could not expect to be preeminent in all scientific fields. He also warned against the tendency to avoid tough decisions about which projects should be cut by applying cuts uniformly across all fields. "I believe the discipline of making such hard choices will ultimately benefit science, just as the occasional pruning of a tree can promote, rather than retard, its heal." **David Dickson**

Spain has the money but not the people

Science in Spain seems to be embarked on a period of rather heady growth. Money under the direct control of the Spanish science research council, the Consejo Superior de Investigaciones Científicas (CSIC), will triple next year if decisions taken by the lower house of the Spanish parliament are confirmed by Senate. This comes on top of a doubling last year of the centrally administered "funds for research", from which CSIC draws the largest single portion. One sign of how the wind is blowing is the story of a Spanish chemist, recently returned from the United States, in a poorly-equipped CSIC laboratory. In the past few weeks he has found himself spending money "eight or nine hours a day" bringing his laboratory up to scratch; and he has not even had to submit a formal grant application.

CSIC plays a major role in science in Spain, maintaining 23 institutes in the humanities and 77 in natural sciences and employing 1,600 scientists plus 4,400 supporting staff. But the Consejo is not the only beneficiary of increased spending. Parliament has also agreed to create two new research funds, on which universities (and others) will be able to draw: one to be controlled by the Ministry of Industry, and one by the Ministry of Health, together increasing the government research budget by about a quarter.

The regional distribution of support is also becoming a shade more equitable. Whereas some 85 per cent of the central funds for research have usually been spent in Madrid, parliament this year has insisted that 25 per cent be spent in the regions; and the autonomous government of Catalonia is also expected to increase its fledgling research budget next year, from 100 million pesetas (around £500,000) to 200–250 million pesetas.

In total, over the past two years Spanish spending on research and development has nearly doubled as a fraction of gross national product from around 0.3 per cent to 0.5 per cent now — still way below the developed world average of something over 2 per cent but an increase which is already proving difficult to manage.

The problem is people. The truly effective Spanish research community is very small, and there is a government freeze on new appointments. This is having two serious effects, which some feel must be corrected quickly or the new money will be merely wasted.

First, there are not enough highly qualified scientists to act as critical referees in all fields in which Spain would wish to do research; although arrangements have been made for refereeing all proposals, in practice the judging has proved to be imperfect and partisan. An international refereeing system is proposed by those who would survive it; the others — inevitably the majority — resist.

Second, there are too few posts becoming vacant to employ the rising tide of experienced Spanish scientists who wish to return from other countries and make use of the new money. So paradoxically the coffers are open, but there are good

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scientists unemployed.

The man who may change all this is the new minister for universities and research, Professor Federico Major, recently returned from Paris after a spell as Deputy Director-General of UNESCO. Major, a 47-year-old developmental neurobiologist, has kept in touch with science despite a long career in politics. He is a personal friend of King Juan Carlos, and yet is right wing (he was minister of universities under Franco) and so may be able to ride the strong conservative opposition in Spain. He has to steer through a new law for the universities (now entering its seventh draft). And he appears to have been impressed, during his time in Paris, by the new French commitment to science as a means of economic development. He is already talking of a "law for science" which would define a budget and a programme for a stretch of a few years, so clearing all political hurdles in one jump. This is exactly the strategy of the French minister for science. It will be interesting to watch how far Professor Major will mimic him.

Robert Walgate

UK biotechnology

Blood money

A British publicly-funded organization for encouraging innovation in industry has made its second major investment in the fledgling biotechnology industry. The British Technology Group (BTG — an amalgamation of the former National Research Development Corporation and the National Enterprise Board) announced this week that it is investing £2 million in Speywood Laboratories Limited of Nottingham for the development of new techniques for blood protein manufacture. Prutec Limited, a subsidiary of the Prudential Assurance Company, will be matching BTG's investment.

BTG's other biotechnology venture is Celltech, the company it established last year with three finance houses and the Medical Research Council to develop recombinant DNA techniques for manufacturing medical products, including monoclonal antibodies. The group's latest venture is to develop a new fractionation technique for manufacturing blood proteins, an area in which Celltech is not involved.

Speywood, a small company set up seven years ago, will use the £4 million roughly to double the size of its factory and research laboratories. Its initial aim is to improve its polyelectrolyte process for fractionating blood cryoprecipitates, which allows the separation of a greater variety of blood proteins than the traditional Cohn process for fractionating whole-blood plasma. The company has already used the new technique for isolating a pure form of factor VIII from pigs' blood for use in particularly sensitive human patients. Clinical trials are expected next year. It now plans to expand factor VIII production and extend the technique to factor IX, factor VWF (for treatment of von Willebrand's disease) and fibronectin.

Speywood is the only commercial company now producing blood products in Britain, the bulk of production being controlled by the health department through its Blood Products Laboratory at Elstree, and Speywood's plans for expansion are likely to be welcomed by the National Health Service, which has to import a large proportion of its supplies.

Speywood's longer-term goal, however, is to develop and use recombinant DNA techniques for manufacturing blood proteins such as factors VIII and IX, fibronectin, α_1 antitrypsin and albumin.

David Heath, managing director of Speywood, welcomes investment from BTG and Prutec not only for the money but also because it gives the company access to expertise on recombinant DNA technologies in universities (BTG acts as a "broker" between industry and the universities). He hopes that the £4 million will launch the company into an expansion plan costing about £19 million over the next five years. Later on, he will be looking for further investment, but BTG is for the time being non-committal, preferring to see how the company shapes up before committing itself further. **Judy Redfearn**

Telecommunications

French hanging on

Brussels

French doubts about the wisdom of opening up some public purchasing contracts in telecommunications to its partners in the European Economic Community held up agreement last Monday on a set of recommendations designed to stimulate the growth of the European market in telecommunications.

Although the recommendations would not be binding, they constitute a first step towards achieving community-wide services and a community-wide market for terminal and other kinds of equipment. The telecommunications administrations of the various member countries have, of course, been cooperating for a long time but the supply of equipment for national networks has tended to remain in national hands. Following the meeting of the Council of Telecommunications Ministers in December 1977, the European Commission established a working group on future networks which has recommended urgent action in the field of digital networks. But the different policies being pursued and conflicting commercial considerations continue to hamper progress.

The first recommendation is for consultation with a view to ensuring that new services are introduced within the community only when they are mutually compatible. Second, the telecommunications administrations of member countries should not discriminate between domestic and other EEC suppliers of telematic terminal equipment by means of type approval procedures taking longer than six months, or which are more complex and costly to comply with than those employed elsewhere. But it was the third recommendation which caused the greatest problems. This specified that for the period 1981–83, telecommunications agencies should seek tenders from suppliers who manufacture in other community countries for at least 10 per cent of their annual orders.

The French quibbled about the phrasing "suppliers who manufacture", partly because, as one diplomat put it, "they don't want to go ahead with the recommendations anyway". But the French also want to avoid loopholes that will open up their market to non-EEC countries. The worries of the Germans, the other main objectors to the recommendations, were, however, removed. The Bundespost's ambitious videotext programme is being accompanied by a new law to extend its monopoly in new information systems and terminals such as modems, although this move will be examined by the European Commission's directorate on competition.

Jasper Becker

Pleasant surprise

The shortfall in admissions of overseas students to British universities has not been as great as anticipated. According to the University Grants Committee (UGC) admissions of overseas undergraduates in 1981–82 totalled 4,918 compared with 5,017 in 1980–81, a shortfall of about 2 per cent. Postgraduate admissions were 7,414, only 0.5 per cent less than in 1980–81.

These figures, however, come on top of reductions in 1980–81 compared with 1979–80. The sharpest reductions then were in students from the United States and Malaysia which sent 1,105 and 3,988 undergraduates respectively, compared with 1,450 and 4,188 in 1979–80. Most other countries cut back by two to five per cent. The exceptions were West Germany, Hong Kong and Nigeria which sent more students than in 1979–80. The largest contributors of overseas students are still Malaysia, Hong Kong and the United States, between them sending more than half of Britain's total overseas enrolments.

As yet UGC has no figures for individual universities or for the countries of origin of new entrants for 1981–82, but the unexpectedly small decline should mean that some universities, at least, have not suffered as severe a loss of in income from overseas students' fees as had been feared. The effect may be to lessen the impact of the government's cut in the university grant. **Judy Redfearn**

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