Britain Increases Science Spending

Concerned about the brain drain of scientists to the U.S. and elsewhere, Britain's government is expanding support of research

Growing concerns about a new brain drain among British scientists, many of whom are being increasingly prompted by low salaries and a deteriorating research environment to seek jobs in countries such as the United States, has helped persuade the British government to increase the science budget by the most significant amount since the beginning of the decade.

The government has announced that, as part of its revised public spending plans for the year 1986–87, it intends to add $21 million to Britain's five scientific research councils above the $850 million which it had previously promised. The original figure would have meant no real increase over the current year, consistent with the government's policy of level funding for science since 1980–81.

The 2.5 percent growth is still relatively modest. Indeed, it will barely cover anticipated increases in the research councils' costs. However, the new money is being taken as a promising sign that the government has at last begun to accept warnings about the irreversible damage that its previous cuts have been having on British science.

"If I was feeling optimistic, I would say that there has been a turn in the tide," David Phillips of Oxford University, the chairman of the Advisory Board for the Research Councils (ABRC), said last week. "At least we are not being subject to positive cuts any longer."

The government's decision came shortly after all ministers had received the conclusions of a report prepared by the ABRC arguing that Britain was in danger of losing its best scientific talent to other countries in a number of important fields—particularly those related to "strategic" research areas such as biotechnology and microelectronics.

The report had been specially commissioned from the ABRC by Secretary of State for Education and Science Keith Joseph, in order to put some flesh on comments that the board made earlier in the year on the declining state of British science.

The board had pointed out, for example, that cuts previously imposed by the British government on the value of the science budget will have forced the research councils to reduce the number of directly employed staff by 20 percent—or more than 2000—between 1981–82 and 1987–88.

It also claimed that, although the overall science budget had been allowed to grow slightly faster than the official rate of inflation, in practice various factors (including the falling value of the pound) resulted in a real 5 percent reduction of the resources available to the research councils.

In the past, such quantitative arguments have made relatively little impact on government ministers. The general feeling was that cutting excess fat from the scientific community—as from the rest of the public sector—would make it leaner but fitter, despite warnings from the opposition Labor Party during a heated parliamentary debate in June that centuries of scientific tradition were being destroyed by the government's "parsimony, misunderstanding, abuse and hostility."

> The brain drain includes not only talented students and postdocs but also outstanding senior scientists.

However, the potential for long-term, irreversible damage has now been dramatically highlighted by the latest report on the brain drain.

The report is based on questionnaires distributed to 40 leading research groups throughout Britain, asking for details of their recent experience. According to the ABRC, "departments are in general gravely concerned about increasing losses overseas, not only of their most talented students and postdoctoral research workers but also of outstanding senior scientists."

Pointing out that it has always been accepted for newly qualified Ph.D.'s to gain research experience overseas—usually in the United States—the ABRC says that it is now generally felt that they are increasingly unlikely to return. "Several respondents made the point that once British postdoctoral scientists have been working in the U.S.A. for a few years, they are very difficult to attract back."

The reasons given for British scientists leaving include relatively traditional factors such as more employment opportunities, better pay and prospects, and better research facilities. In addition, however, the board was told of frustration with the difficulties of getting research grants approved in the United Kingdom, the greater receptiveness of U.S. industry to novel and untried ideas (compared to British companies which, in general, "do not know how to recruit, use, or reward Ph.D. talent"), and "aggressive recruiting on the part of U.S. universities and industry."

Individual scientists consulted by the ABRC confirm these conclusions. According to William Brammer, for example, professor of biochemistry at the University of Leicester, "Salaries have fallen so far behind that we can no longer keep our own graduate students; they all want to go abroad. And we are finding it very difficult to fill our postdoctoral vacancies."

Brammer points out that a recently qualified Ph.D. can expect a salary of about $12,500 in a British university, but about twice this amount from an American university or a high-technology company.

However, he adds that the problem does not lie in salary differences alone. Many research workers who might still be tempted to return to the United Kingdom are put off by the lack of long-term prospects for adequate funding, and what he describes as the "abysmal" support for research now provided by British universities, including out-dated equipment and a lack of technical support.

It is these problems that the government is now hoping to address with its commitment to the extra $21 million for the science budget. Perhaps coincidentally, this is exactly the figure that the ABRC said in its earlier report needed to be added to the budget if the real decline of the last 5 years is to be halted.

The government has also promised more money for improving university research facilities. Although overall funding for universities is still being reduced—their total grant of $1.8 billion will still mean a real decline of 1.6 percent next year—an extra $14 million is being allocated in each of the next 2 years for new equipment in selected universities, and $5 million will be provided over 3 years for developing computer links between all higher education institutions.

Further support for university scien-

tists is also coming from the Ministry of Defense. Last month, the ministry announced that it was increasing from $14 million to $21 million the support that it provides to university research groups under a new collaborative research grants scheme set up with the research councils.

Norman Lamont, the minister of state for defense procurement, said that the government's desire to encourage closer links between universities and the defense establishment arose from the fact that "in many fields the same basic research is needed to underpin both defense and civil technology."

The new budget figures suggest to British research workers that, after several years of hard lobbying—most recently rewarded by growing criticism of the government's policies for science from several prominent back-bench Conservative members of Parliament—the scientists' arguments have at last begun to get through to Prime Minister Margaret Thatcher and her financial advisers.—**DAVID DICKSON**

Pork Barrel Issues Simmer

The Senate has approved $22.1 million for four university construction projects related to science. But two major academic associations say that the projects have not undergone proper peer review and have urged members of the House to block final approval when the proposal goes to conference this month.

The groups, the National Association of State Universities and Land-Grant Colleges and, in particular, the Association of American Universities, have been active in trying to plug the spurt of pork barreling involving academic research funds during the past two years. As federal money has dried up, schools are bypassing normal channels to obtain funding and are hiring Washington lobbyists to represent them.

The four grants represent some of the most recent examples in which schools have directly appealed to legislators for funding. Even though the grants are for construction, not research per se, the associations are concerned, says Robert Rosenzweig, president of the Association of American Universities.

The grants are part of a $12 billion appropriations package put together by the Senate subcommittee on commerce, justice, state, and the judiciary. In the largest project among the four, Northeastern University in Boston would be awarded $13.5 million. The money, in addition to another $30 million put up by the university and state and local funds, would be used to revitalize an economically depressed area of the city. The plans include the construction of a science library and an office building to house new high technology companies that school and government authorities hope to attract. The federal appropriation was made at the request of Senator Edward Kennedy (D–Mass.).

The bill also apportions $11 million for the Rochester Institute of Technology to build a center devoted to microelectronic engineering and imaging sciences; $4 million for a fiber optics research center to be used by the University of South Carolina; and $3.5 million for an engineering facility at the University of Nevada at Las Vegas. The funds for the schools were individually requested by Senator Alfonse d'Amato (R–N.Y.), who recently won $12 million for computer science research at Syracuse University, a proposal that bypassed peer review; Senator Ernest Hollings (D–S.C.), who is ranking minority member of the subcommittee; and Senator Paul Laxalt (R–Nev.), who is subcommittee chairman.

This is the second time that the bill's economic aid program has been a vehicle for science-related funding. Last year, Boston University obtained about $20 million for the engineering school under the provision.

Rosenzweig does not object to schools obtaining money under the program, but contends that the schools should compete openly with others and undergo some form of peer review before Congress funds them. "I'm more concerned that this be dealt with in a regular way and not on an ad hoc basis," he said.

But because this money would be used for construction of science-related facilities, rather than research, Rosenzweig says the need for peer review in this instance is less compelling than in other circumstances. The Syracuse computer science project "is clearly research. There is no doubt that it ought to be professionally reviewed." The need for review for the other four projects is "less clear-cut," but it is still important for a peer review group to determine whether the science to be conducted at these facilities "is high quality." Awarding grants without the benefit of peer review—even for construction—whittles away at a system that has evolved to ensure high quality research, Rosenzweig argues.

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Nonetheless, "We're not going to war over this one," he said. The two academic associations have sent letters to members of the House and Senate not to approve the grants, but are leaving further lobbying to their individual members.

Charles Coffin, director of government relations at Northeastern, said that his school's project has "nothing to do with research. It does not take away money from other educational programs." Coffin said, "To quote John Silber of Boston University, 'one man's pork is another's old boy network.' This holier-than-thou attitude about peer review is disingenuous."

An aide to Kennedy said that the federal funding requested is for an economic project, not only an educational one. "It's justified," the aide said. "You look for the most appropriate [legislative] vehicle" and this bill is it.

In the past couple of years, Congress has appropriated more than $100 million for projects that have not undergone peer review, at schools including Northwestern, Georgetown, Columbia, and Catholic universities.

—**MARJORIE SUN**