

## 'Science for Peace' offers hope to areas of political conflict

Paris. Daniel Cohen, the French geneticist, last week launched an ambitious initiative designed to promote scientific cooperation in conflict zones. The programme, which would involve building a network of large research centres focusing on biological and genetic research — and would require multi-million dollar funding — is aimed at contributing to political attempts to bring peace and stability to such regions.

To run the project, Cohen has set up a foundation known as "Science for Peace" under the auspices of the United Nations Educational Scientific and Cultural Organization (Unesco).

The foundation has already attracted substantial political support both in France and in countries likely to benefit from the scheme. In particular, the Israeli, Jordanian and Palestinian administrations have formally backed the plans, while negotiations have also begun with Egypt and Morocco. Indeed, political leaders including Shimon Peres of Israel and Yasser Arafat of the Palestine Liberation Organization will take part, with the use of satellite links, in a gala fund-raising concert in Paris later this month supported by Jacques Chirac.

The first of the planned centres would be based in Jordan, where FF3 billion (US\$600 million) would be spent over the next ten years creating a centre for research on drought-resistant crops, with a staff of 1,000 researchers. A second centre, based at Hammamet in Tunisia, would focus on the genetics of malaria and would employ 250 staff at a cost of FF1 billion (see *Nature* 371, 732; 1994).

Cohen plans to create other "technopoles" in Egypt, Israel, Morocco and Palestine, and eventually elsewhere in Africa, Asia and the Americas. But it is not yet clear whether the foundation will be able to attract sufficient resources to accomplish its ambitious plans. Cohen admits, for example, that the foundation has so far only attracted firm commitments for a "derisory" proportion of the FF4 billion needed for the centres in Jordan and Tunisia.

But Cohen argues that, having taken two years to win the required political support, fundraising can now begin in earnest. "Now that this is completed we can begin to look for financing," he says, adding that success of the gala concert will be "crucial". In particular, he is hoping to attract a share of the FF35 billion that will be distributed later this month by the European Commission for the development of the Mediterranean region, and plans to seek further funding from overseas aid programmes, wealthy individuals, and companies.

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## Cost-cutting and downsizing take their toll on US R&D

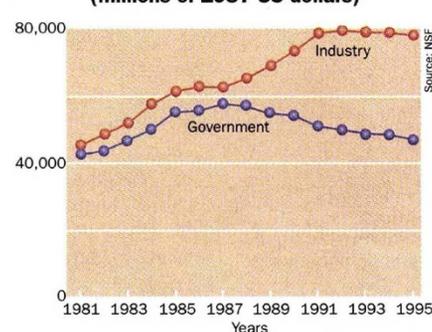
Washington. Total spending by the United States on research and development (R&D) is already in line to fall substantially this year, even before cuts proposed by the Republican Congress get the chance to bite, according to calculations by the National Science Foundation (NSF). In particular, the value of R&D funded by industry will fall by 1 per cent in real terms, and that funded by the federal government by 3 per cent, according to the NSF.

The overall fall means that US spending on R&D as a percentage of gross domestic product (GDP) — the most commonly used indicator of national R&D effort — will fall from 2.51 per cent last year to 2.4 per cent, having slipped steadily from a 1991 peak of 2.8 per cent (see figure, right). Last year, the Clinton administration said that increasing this figure to 3 per cent was "a reasonable long term goal" for science policy (see *Nature* 370, 317; 1994).

The science agency points out some of the main competitors of the United States have also seen a drop in this indicator. In Japan, for example, R&D as a proportion of GNP fell from 2.9 per cent to 2.7 per cent between 1990 and 1993, and in Germany from 2.9 per cent to 2.5 per cent between 1989 and 1993.

These falls, however, have coincided with economic recession, while the United States has experienced considerable economic growth since 1991. "These numbers suggest that we don't stand in a very strong position, even before we put into place the cuts

US spending on R&D by source of funds (millions of 1987 US dollars)



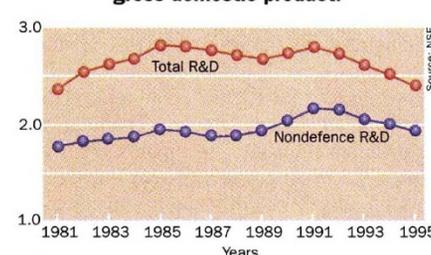
planned by Congress," says Al Teich, science policy director at the American Association for the Advancement of Science (AAAS). Teich attributes the slowdown in industrially supported R&D to the recent emphasis of US corporations on "cutting costs and downsizing".

The NSF estimates that US industry will spend \$101.6 billion this year on R&D, slightly more in current dollars than the \$99.6 billion spent in 1994, but 1 per cent less when inflation is taken into account.

The federal government will spend \$60.7 billion, compared with \$61 billion last year — a relatively small cash drop, but a sizeable reduction of 3 per cent in real terms.

Figures for recent years indicate different trends in support for R&D from government and industry. Government support peaked in 1987, and has since fallen by 20 per cent in real terms (see figure, below

US spending on R&D as a proportion of gross domestic product.



left). Industry support continued to grow strongly until 1992 — lending credence in some quarters to the idea that it might eventually displace scarce public funding. Since 1992, however, industrial support has also fallen off, despite the strength of the US economy.

According to John Jankowski, programme director of R&D statistics at NSF, the levelling out of research support in industry over the past few years reflects changes in aerospace and parts of the electronics industry, with corporations matching reductions in defence spending with cuts in their own commitment to R&D.

Until recently, basic research spending — most of which is funded by the federal government — has been more resilient than spending on applied research and development. But basic research also fell slightly in both 1994 and 1995, reflecting the fact that, while basic research in universities continues to expand, that financed and carried out in industry has shrunk by 20 per cent from its 1991 peak.

The new figures, which have been released by the NSF's directorate of social sciences, will form the basis for the next major statistical report, Science and Engineering Indicators, 1995, which the NSF's governing body, the National Science Board, will deliver to President Bill Clinton early next year.

The NSF, which has been gathering such statistics since 1953, uses surveys of government departments, universities, companies and other research performers. The Industrial Research Institute helps to collect the information from industry. Expenditures for the current year were extrapolated from information available in June.

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