engineering disciplines, and in a covering letter to the report, Robert M. White, president of the engineering academy, noted that "Without a complementary move to provide such support, cross-disciplinary research would be sapped at its roots."

Suh says the fears are groundless. "The rumor mill is churning out lots of wrong information," he says. It is true that new initiatives are claiming a growing share of the engineering directorate's budget, but even so, support for individual researchers has risen from $82.9 million in fiscal year 1983 to $95.4 million in 1985, he notes. "So far it hasn't been the case [that individual research awards have been squeezed], and I don't intend to make it the case."

Members of the fluid mechanics delegation say they came away from their 17 December meeting with Suh greatly reassured. In essence, he told them that the engineering centers program would not be allowed to grow at the expense of existing programs, and that he hoped to secure sufficient growth in the engineering directorate's overall budget to accommodate the new initiative.

Indeed, securing major growth in the directorate's budget is Suh's chief priority. The foundation's expenditure on engineering is "totally inadequate," Suh told *Science*, noting that it has sufficient funds to produce, on average, only one Ph.D. per engineering field per state per year. He says he hopes to see the total budget climb to $500 million by the end of the decade, a level that he still regards as "peanuts," but which would provide room for the centers and other initiatives he is planning. Those are the kinds of projections that make NSF's clients in the basic sciences nervous about their slice of the foundation's pie.

In particular, Suh says he would like to increase support for projects involving multiple investigators, expand the Presidential Young Investigator Awards program—a program begun last year that provides a flexible support to young researchers—and encourage more research in fields such as design that do not now have a strong science base.

He has already begun to put his stamp on the engineering directorate by withholding 10 percent of the directorate's budget for this year for possible reprogramming into priority areas. He has told program managers that the money will be available for high-risk, high-return projects.

As for the grumbling in the community, Suh says "It is what you expect when you do things differently."

—COLIN NORMAN

Europeans Adopt R&D Plan

Brussels. Research ministers from the ten member countries of the European Economic Community (EEC) agreed on 19 December to a major shift in the focus of their joint research efforts away from topics such as nuclear power and radiation protection—which have dominated these efforts since the community was established in the 1950's—toward technological fields that are likely to strengthen Europe's ability to compete commercially with the United States and Japan.

The shift is embodied in a 5-year, $1-billion package of research projects which was approved by the ministers largely at the urging of the outspoken commissioner for industry and research, Etienne Davignon, who has just reached the end of his 4-year term of office.

Davignon was largely responsible for one of the most significant developments in European technology policy in recent years, the EEC's strategic program in information technology (ESPRIT). The program, which will cost $1.3 billion over 5 years, will be jointly financed by the commission and European companies and is a direct response to the challenge from U.S. and Japanese computer industries. Full funding for the second year's operation of ESPRIT was approved at last week's meeting.

The broader research package represents an attempt to apply the same approach to a variety of precompetitive research projects in fields ranging from materials processing to biotechnology. The biggest new element in the package, for example, is a program known as basic research in industrial technologies for Europe (BRITE), which aims to get research workers together from universities, research institutes, and industrial laboratories to work on topics of industrial interest in more than one EEC member country.

The ministers agreed to allocate $100 million of the community's research budget to BRITE over the next 4 years. Fields in which joint research projects will be sponsored include laser technology, catalysis and particle technology, membrane science, polymer chemistry, and computer-aided design. According to Cyril Silver, head of the EEC's new technology division who is responsible for the BRITE program, the aim is to adapt to a European setting many of the ideas that have been explored in the United States in the past few years on ways of stimulating innovation in strategically important fields without requiring massive government-directed intervention.

Other new initiatives included in the package are a $45-million 4-year program to support efforts in biotechnology, primarily for research and training activities in national institutions, and a $50-million program aimed at stimulating greater cooperation between research groups in different EEC countries.

Working within severe budgetary limitations, the ministers were forced to cut back on some of their existing research activities to make way for the new programs. Research into the safety of nuclear reactors, for example, which was previously a separate project, is now to be made the responsibility of the EEC's Joint Research Center at Ispra in Italy, but without any extra funding being provided to the center.

The largest single cut will come in the fusion program, by far the biggest item in the total package. The commission had asked for $790 million over the next 5 years, but the ministers cut this back to $690 million, which will mean a reduction in the EEC's overall fusion effort. About half of this sum will be spent in the next 2 years alone, allowing full operation of the Joint European Torus (JET) at Culham in the United Kingdom. The cuts will be absorbed by stretching out the technology research programs that are directed by the next step after JET.

The overall package of $1 billion over a 4- to 5-year period was considerably smaller than the commission of the EEC had originally asked for, largely as a result of pressure from the British and German governments. However, the ministers agreed that almost half of this sum will be spent in the first 2 years; a review will be carried out at the end of this period to assess whether increased support is justified.—DAVID DICKSON