Unsung Force in Science Exchanges

Brussels

One of the oldest and most extensive programs promoting exchanges among European researchers is run by an organization that is neither European nor, strictly speaking, scientific: the North Atlantic Treaty Organization (NATO). Since 1958, NATO has been supporting a range of nonmilitary scientific exchanges as part of its charter to strengthen peaceful relations among its member countries.

NATO's involvement in nonmilitary science is not widely known—even in the scientific community—but officials in the science program point out that the organization directly finances more exchanges than any other body. More than 250,000 scientists have participated in its programs over the past 30 years. Although about 60% of these exchanges have involved transatlantic links of one sort or another, NATO clearly plays a major role in forging links between European scientists.

Its civilian science programs were begun in part as a response to concerns in the West that followed the launching of the Soviet Sputnik satellite. The motivation was clearly political—to strengthen the scientific base of members in the military alliance—but the programs themselves have been managed outside NATO's usual structure. For example, unlike other senior NATO committees, the Science Committee, which provides overall direction for the science program, consists of scientists appointed from each member country rather than government officials. For 22 years, the American member was I. I. Rabi; since 1980, the post has been filled by former presidential science adviser Edward E. David, Jr.

NATO's most important science program, accounting for about half the $23-million science budget, provides fellowships for individual scientists to work in another country for periods of up to 1 year. About 1200 fellows are supported each year, about 500 of whom move from one European country to another.

The organization also directly promotes international collaborative ventures by providing travel and living expenses for members of research teams working on joint projects to visit each others' laboratories. About 1200 scientists and engineers took part in this program last year, with visits lasting 1 to 4 weeks.

In addition, it provides a major source of support for international scientific meetings, sponsoring some 60 to 70 Advanced Study Institutes for postdoctoral students and 20 to 30 workshops each year. In each case, the meetings must involve scientists from several different NATO member countries.

More recently, NATO launched what it calls the Science for Stability program, a venture with the inherently political purpose of using scientific projects to help promote stability in NATO's three poorest, but strategically important, member countries: Greece, Portugal, and Turkey. The aim is to fund projects that could potentially contribute to economic development. So far, some 20 projects have been supported. ■ **C.N.**

Euroscience Lexicon

The following are the major European collaborative projects and organizations:

BRITE (Basic Research in Industrial Technologies in Europe).
Established in 1985 by the European Economic Community to support and encourage collaboration on pre-competitive industrial research. Based in Brussels. Approximate annual budget: $200 million ($104 million from the EEC).

CERN (European Laboratory for Particle Physics).
Established in 1954 to carry out and coordinate research in particle physics. Located in Geneva, it has 14 member states and an approximate annual budget of $490 million.

EEC Commission (Commission of the European Communities).
Established in 1957 as the executive branch of the European Economic Community. Located in Brussels. It stimulates collaboration in applied research among the EEC's 12 member states. Approximate annual science budget: $1.4 billion.

EMBL (European Molecular Biology Laboratory).
Established in 1974 in Heidelberg, West Germany, with outstations in Grenoble, France, and Hamburg, West Germany. It has 14 member states and an annual budget of about $27 million.

ESA (European Space Agency).
Established in 1975 through merger of European Space Research Organisation and European Launcher Development Organisation. Headquarters is in Paris. It has 13 member states and an annual budget of $1.2 billion.

ESF (European Science Foundation).
Established in 1974 to enhance cooperation in basic research among European scientists. Located in Strasbourg, France. Members are 48 government funding agencies and scientific academies. Approximate annual budget is $1.7 million.

ESO (European Southern Observatory).
Established in 1962 to carry out astronomical research in the Southern Hemisphere. Headquarters are in Munich, West Germany. It has eight member states and an annual budget of $26.4 million.

ESPRIT (European Strategic Program for Research and Development in Information Technology).
Established in 1984 by the EEC to stimulate and fund joint research in information technology. Located in Brussels. Approximate annual budget is $340 million ($170 million from EEC budget).

Eureka
Established in 1985 to stimulate collaborative research in commercially important technologies. Located in Brussels. It has 18 members and coordinates projects lasting 2 to 10 years at a cost of $4.0 billion.

JET (Joint European Torus).
Established in 1977 at Culham, England, to obtain and study plasma in conditions approaching those of a fusion reactor. It has 12 member countries and an annual budget of about $110 million (80% from the EEC).

North Atlantic Treaty Organization (NATO) Science Program.
Established in 1958 to strengthen nonmilitary scientific cooperation among NATO members. Located in Brussels, it has an annual budget of about $23 million.

RACE (Research and Development in Advanced Communication Technologies for Europe).
Established in 1987 by the EEC to stimulate research in telecommunications. Located in Brussels it has an approximate annual budget of $250 million ($125 million from EEC budget).