US international cooperation

Science board's other voice

Washington

The National Science Board, the governing body of the National Science Foundation (NSF), has just issued a stirring but gently worded plea for continued scientific contacts between the United States and other countries, including the communist bloc. The board also called on NSF director, Mr John B. Slaughter, to "play a significant role, with the Department of State and the Executive Office of the President, in development and implementation of international science policy".

The board thus authorized Slaughter (who plans to leave his post at the end of the year) to become involved in decisions on international science that are now usually made by the State Department and the White House without consultation with NSF. Although NSF manages several major international science programmes, such as the Deep Sea Drilling Project and the US Antarctic Program, historically NSF has had little influence over diplomatic and policy decisions, such as that made by the President after the imposition of martial law in Poland last December to terminate bilateral US–Soviet scientific agreements as they came up for renewal. The decision effectively ended most US–Soviet scientific contact.

The National Science Board, which is second only to the White House Science Advisory Committee in authority and prestige, has only rarely played a role in these decisions. "The board's options are quite limited" explained one member involved in drafting the recent statement. On the one hand, he explained, it advises NSF and is part of the executive branch of government. In this capacity it recognizes that there are situations in which the government might legitimately want to classify scientific data. On the other hand, the board is made up of, and reflects the thinking of, US university scientists, who believe that science fares best when it has plenty of international freedom.

The statement reflected this difficulty, noting that "restrictions which diminish that openness are likely to have serious costs to science and, ultimately, to national security. Such costs should be carefully considered . . . before implementing any actions that would compromise the traditionally open environment that has served us so well in the past."

The board's plea for internationalism comes just a month after the Department of Defense blocked the reading of about 100 papers at a San Diego conference (see this issue, p.383, and *Nature* 23 September, p.289) — the most recent example of the Reagan Administration's campaign against the flow of scientific information to communist countries.

● The number of US participants in international scientific congresses has been declining, even as US science has become more dependent on work done abroad, as the table and figure show. Moreover, the latest data, for 1980, shown in the table, exclude information on the growing list of international congresses at which no US scientists participated.

US participation in international scientific congresses

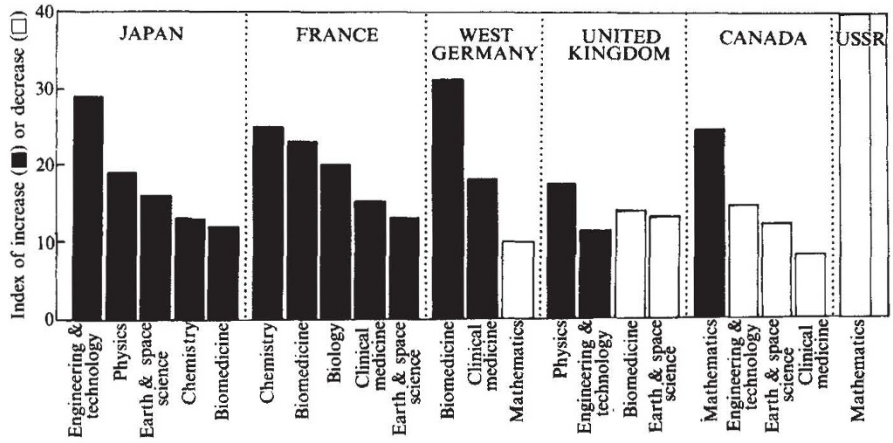
Year	No. of congresses	Total participants	No. of US participants
1960–62	23	33,082	9,033 (27%)
1963–65	28	37,964	10,012 (26%)
1966–68	42	59,748	12,297 (21%)
1969–71	38	55,711	12,956 (23%)
1972–74	73	73,819	18,630 (25%)
1975–77	52	59,658	12,767 (22%)
1978–80	37	55,358	7,975 (14%)

Source: *Science Indicators-1980* and NSF unpublished data for 1980.

At the same time, US scientists are depending more and more on foreign scientific work in selected fields, as indicated by citation data shown in the figure. The board's action, therefore, comes at a time when US scientists are relying more than ever on their foreign colleagues — but are seeing less and less of them.

Deborah Shapley

Changes in US use of foreign scientific literature, 1973–79



Planetary science

Shopping list

Planetary scientists in Europe have been getting together. Under the umbrella of the space science committee of the European Science Foundation (ESF), they have recently published a report which recommends that the European Space Agency and national organizations take action to strengthen their subject.

Europe's planetologists seem somewhat surprised at their own level of expertise, given that they have had fewer opportunities than their Soviet or US colleagues to participate in deep space missions. Their report is an attempt to ensure that they at least maintain their international status. But the Executive Council of ESF, which has yet to decide how to advocate the report's recommendations to ESA and national governments, may have a tough task. Funding agencies, now everywhere short of cash, will be asking what level of priority to assign to planetary science compared with other branches of space science and astronomy.

The planetologists, however, seem aware that straightforward requests for more missions will fall on stony ground. Hence, they recommend that ESA, for example conduct more preliminary studies of missions, thus ensuring that final decisions on which to argue are well-founded. Money might also be saved, says the report, if the spacecraft design for Giotto, the European mission to Halley's comet, is adopted wherever possible in deep space missions.

Planetary science could also be strengthened from the ground, says the report. There should be better access to optical and radio telescopes and long-basetime interferometry. New instruments should be developed through greater collaboration between research laboratories and manufacturing industry and cooperation between space scientists should be encouraged to "take full advantage of facilities such as the space telescope".

ESF itself may have the power to act on two of the report's recommendations: that studentships be set up for young planetologists in centres of excellence and that a system of travel grants be available for European planetary scientists to visit each others' laboratories.

But the most significant outcome of the European planetary scientists' recent get-together may be apparent after a meeting with their US counterparts next October. Under discussion will be joint missions probably too costly for one agency to carry out alone. Ideas, which are still very preliminary, include missions to Venus and Mars and a mission to Saturn and the outer planets. The plan is to make a choice within the next year in time for launch in 1991.

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