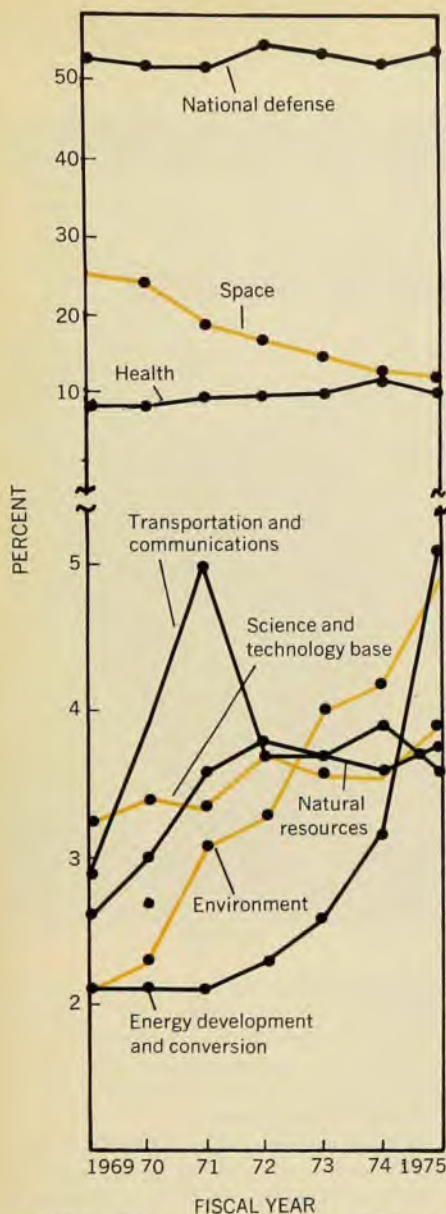




Federal R&D priorities are shown for major research areas. Research programs were placed into categories by determining their primary mission. Data provided by the NSF.

Within energy development and conversion programs, the report notes that, in FY 1969, almost 90% of the money went to nuclear work, which received less than 60% in FY 1975 (although this smaller proportion represents twice the amount of money spent in FY 1969 when \$286 million was allotted). The most impressive increase among nuclear-energy programs during FY 1969-75 is for controlled thermonuclear research, now with more than three times the obligations as at the beginning of the period. Fossil-fuel research has been promoted heavily in the later part of the FY 1969-75 period and it now forms 22% of energy R&D obligations compared with 6% in FY 1969.

Other R&D areas. The programs that comprise the science and technology base grouping (including NSF Scientific

Research Project Support and AEC physical research) have grown gradually during the period with a dramatic 18% increase between FY 1974 and FY 1975. The NSF Science Education Improvement program has shown considerable growth since FY 1969, when it received 7.6% of education R&D obligations. For FY 1975 the allocation is 12.2%. Funding for NSF's International Cooperative Scientific Activities, classed under International Cooperation and Development (0.2% of federal R&D obligations), has grown from \$500 000 to \$8.1 million during FY 1969-75.

An Analysis of Federal R&D Funding by Function, FY 1969-1975 (NSF 74-313) provides a different and, for many purposes, a more useful view of federal R&D priorities. Copies are available for \$2.25 from the US Government Printing Office, Washington, D.C. 20402. —RAS

Five-year air-sampling program covers the world

Commercial jumbojets will serve as atmospheric research vehicles as they participate in NASA's Global Air Sampling Program. The five-year program, scheduled to reach its peak in 1976, will involve several regular passenger aircraft carrying instruments that initially will monitor suspended particulates, carbon monoxide, ozone and water vapor in the layer 20 000 to 40 000 feet above sea level. By Summer 1975, instruments for measuring NO_x, carbon dioxide and condensation nuclei will be added.

Data, collected under contract with NASA's Lewis Research Center, will enable researchers to assess perturbations in the Earth's natural atmosphere. It is hoped, for example, that this information will reveal how much dust is being added by aircraft and whether jet vapor trails contribute to cloud cover. Widely separate airline routes will enable researchers to receive data for both the southern and northern hemispheres and will include coverage of the Arctic region.

Arecibo radiotelescope improvements completed

Work to upgrade the 1000-foot diameter radio/radar telescope at the Arecibo Observatory has been completed, resulting in a 2000-fold improvement in the telescope's sensitivity and a ten-fold expansion of the frequency range available for radioastronomy observations. The three-year, \$8.8-million project was carried out at the Observatory, which is a part of the National Astronomy and Ionosphere Center, Arecibo, Puerto Rico. The center is operated by Cor-

nell University under contract with the National Science Foundation. The telescope cost \$9.3 million when it was originally constructed in 1963:

Changes in the instrument include replacing the wire mesh of the reflector bowl with aluminum panels and adding a 450-kilowatt transmitter to the existing ones. The new system will function as the strongest radio signal leaving Earth, strong enough to be detected anywhere in the Milky Way by instruments similar to the Arecibo telescope.

AEC declassifies work on micropellet fusion

The Atomic Energy Commission has declassified aspects of its laser-fusion research to permit the release of information on theoretical and experimental studies of microscopic fuel pellets. These pellets are filled with heavy hydrogen and used as targets. Specifically, the directive will allow publication of multiple-dimension calculations of the targets and their design and performance.

The declassification action was taken after a detailed study by AEC staff in consultation with AEC and industry experts.

Stricter limits urged on radioactive shipments

The Joint Congressional Committee on Atomic Energy has released a report that recommends stricter monitoring and regulation for air shipments of radioactive materials. The report, *Transport of Radioactive Materials by Passenger Aircraft* is the first of a series of studies commissioned by the Committee in May. John T. Conway, executive assistant to the chairman of the board of Consolidated Edison Company presided over the study panel.

Recommendations for passenger-aircraft transport include:

- ▶ lowering the maximum allowable radiation detectable at three feet from the package and within the passenger and crew compartments from ten millirem per hour to one-tenth as much.

- ▶ reduction, by a factor of ten, of the quantities of radionuclides carried in currently specified types of packages and stricter limits on radioactive materials with half lives between 30 days and 10⁸ years.

- ▶ prohibition against carrying dangerous radionuclides such as Pu²³⁹ and Cf²⁵² in quantities in excess of 10⁻⁵ curies except where required by national security.

Copies of the report are available from the US Government Printing Office, Washington, D.C. 20402 for \$0.45.