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Expenditures for Academic R&D Maintain Steady Growth

Total academic expenditures for separately budgeted research and development (R&D) activities in the sciences and engineering (S&E) reached \$16.3 billion in fiscal year (FY) 1990—an increase of nine percent over those for 1989. When adjusted for inflation, academic R&D spending rose five percent over FY 1989 levels, keeping pace with the five-percent average annual growth rate reported during the previous nine-year period.

The federal government provided 59 percent of the academic S&E research dollars in FY 1990, a share that steadily declined after FY 1980 when it was 68 percent. Federal funding increased three percent in FY 1990 after adjustment for inflation.

Academic R&D support from nonfederal sponsors increased at the most rapid rate, averaging 13 percent from 1980 to 1990. Support from industry (which accounts for only 7 percent of the total) increased an average of 17 percent per year during the same period.

The largest nonfederal source of academic R&D funds is the universities' own funds, which rose at an average annual rate of 14 percent between FY 1980 and FY 1990. Underrecovery of indirect costs and cost sharing together account for one-half of universities' contributions toward research activities. The other half of the institutions' own funds comprises separately budgeted projects financed from discretionary or unrestricted university accounts.

Other sources of support, which comprise contributions from nonprofit foundations and voluntary health agencies as well as other organizations, increased at an average annual rate of 12 percent from FY 1980 to FY 1990. State and local

governments increased R&D support by ten percent per year during this same period.

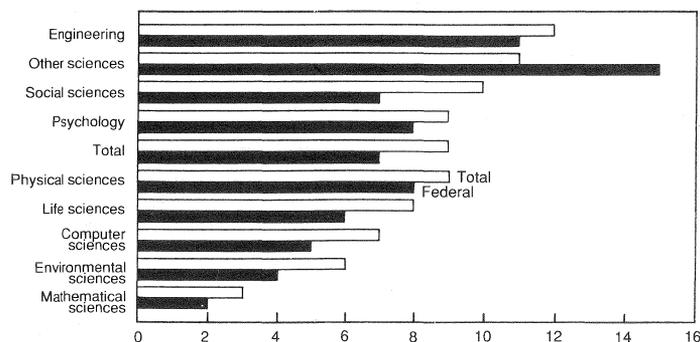
Total academic R&D spending in eight of the nine major S&E fields outpaced the economy-wide four-percent inflation rate from 1989 to 1990. The fastest growth occurred in the engineering disciplines—up 12 percent, followed by the other sciences (i.e., multidisciplinary areas) and social sciences with increases of 11 and 10 percent, respectively. The mathematical sciences growth rate leveled off at three percent after several years of rapid increase.

Universities and colleges have historically performed about one-half the basic research conducted in the United States. In FY 1990, academic institutions spent \$10.4 billion for basic research activities—more than three-fifths of the \$16.3 billion academic R&D total. From FY 1989 to FY 1990 academic spending for basic research rose seven percent (three percent in real dollars).

The data reported above are from the FY 1990 Survey of Scientific and Engineering Expenditures at Universities and Colleges, which includes all schools that grant graduate science or engineering degrees and/or perform activities for which at least \$50,000 had been funded from separately budgeted R&D expenditures. Data were collected from a sample of 460 institutions of higher education out of a survey universe of 595 schools in the United States and outlying areas. The sample comprises all doctorate-granting institutions, all historically black colleges and universities with any R&D expenditures, and a random sample of all other institutions. Survey responses were received from more than 98 percent of these institutions.

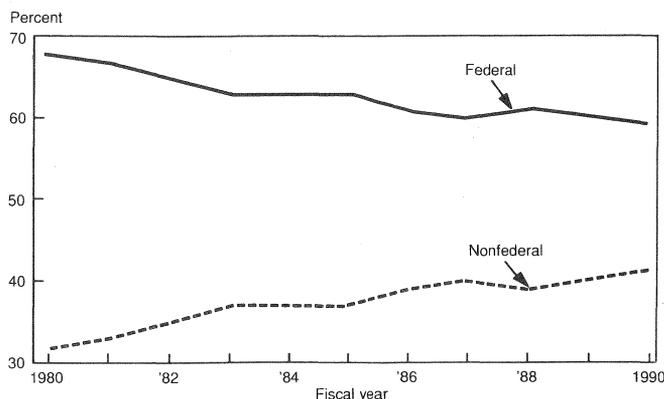
M. Marge Machen

Percent change in R&D expenditures at universities and colleges, by field: FY 1989 to FY 1990



SOURCE: National Science Foundation/SRS, FY 1990 Survey of Scientific and Engineering Expenditures at Universities and Colleges

Federal and nonfederal proportions of R&D expenditures at universities and colleges



SOURCE: National Science Foundation/SRS, FY 1990 Survey of Scientific and Engineering Expenditures at Universities and Colleges