Federal Support of Research in the Life Sciences

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In a recent article in *Science* (*1*), summary data were presented on the nature and the size of federal grant and contract activities in the life sciences for 1952 and 1954. The National Science Foundation has now published a study for fiscal year 1955 (*2*).

Summary data are here presented (*3*) for the three years' studies in order to point out the trends which have developed in this component of the federal research program during the period for which information is available.

Total Federal Support to Science

In fiscal year 1955, the federal research and development program totaled $2291 million (*4*). Of this, $206 million, or 9 percent, represented the life-sciences component; $82.5 million (Table 1) or 4 percent of the total research and development program, or 40 percent of the total life-sciences component, was earmarked for grant and contract activities. The $82.5 million represents a growth of 28 percent over the $64.5 million of fiscal year 1954 and of 77 percent over the $46.6 million of calendar year 1952. The number of projects grew from 6400 in calendar year 1952 to 8100 in fiscal year 1954, and to 9500 in fiscal year 1955. Two thousand grants and contracts were terminated between the fiscal years 1954 and 1955, totaling $14.6 million; 3300 were activated, totaling $32.0 million. This change does not necessarily reflect a true turnover. Agencies of the Federal Government which have grant authority award grants for varying periods of time, up to 5 years. At the termination of the grant period, the project under way may be reconsidered for continued support.

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Distribution by Agency

The data for the distribution of federal contract and grant funds in the life sciences, by agency, for the years 1952, 1954, and 1955 are reported in Fig. 1. Agencies such as the Office of Naval Research and the Army research groups have shown little growth for the years reported. All others have shown a fairly substantial percentage increase, especially between 1954 and 1955. In terms of relative growth, the National Science Foundation showed the greatest increase for the years reported, practically doubling its support each succeeding year. The agencies that show the greatest absolute growth for the last 2 years reported are the Department of Agriculture ($4 million) and the National Institutes of Health of the Department of Health, Education, and Welfare ($8 million). The total increase for all federal agencies for this period was $18 million; $12 million, or 66 percent, of this total increase was attributable to the activities of these two agencies.

Support to the life sciences in 1955 came, to a large degree, from the "special mission"-oriented agencies of the Federal Government. Support by the defense-oriented agencies (Atomic Energy Commission, Army, Navy, and Air Force) increased from $20.7 million, in fiscal year 1954, to $24.1 million, in fiscal year 1955; that by the agriculture-

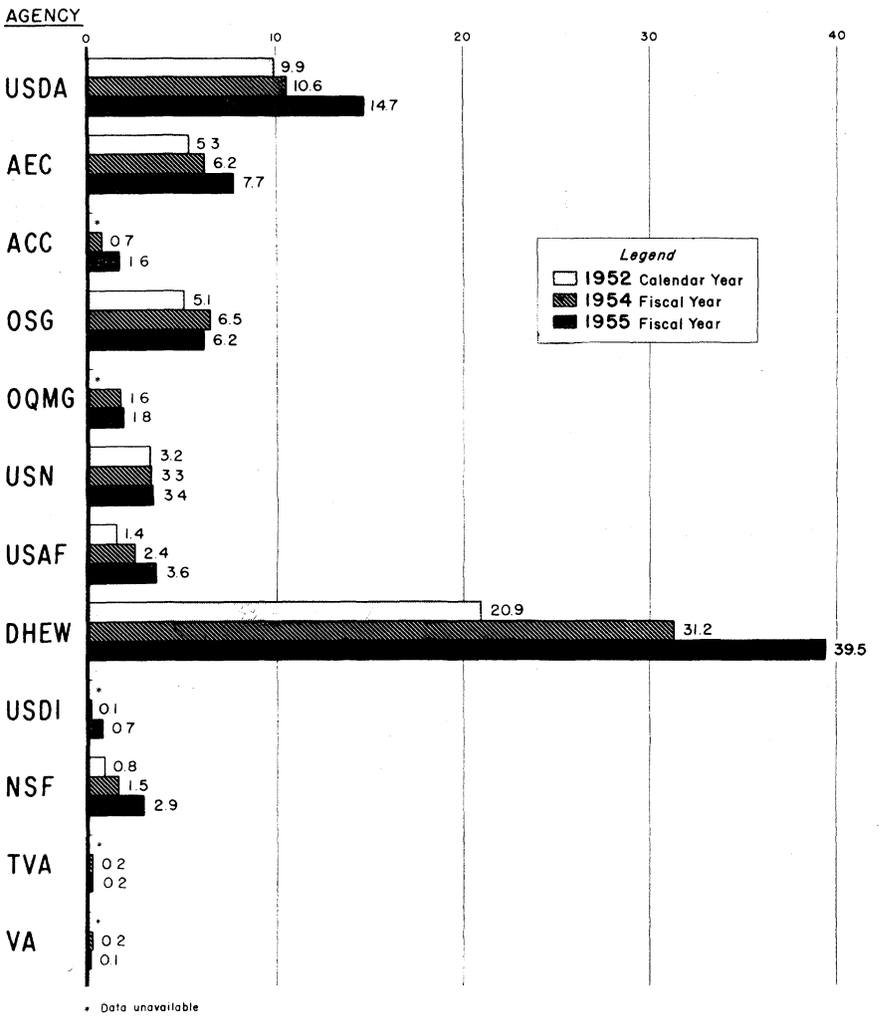

Fig. 1. Annual rate of support in millions of dollars, by agencies, for federal grants and contracts for unclassified research in the life sciences for 1952, 1954, and 1955.

Table 1. Number and annual rate of federal grants and contracts for unclassified research in the life sciences by years.

Period	No. of projects	Annual rate (thousands of dollars)
Calendar 1952	6400	46,628.0
Fiscal 1954	8144	64,532.9
Fiscal 1955	9496	82,544.0

oriented agencies (Department of Agriculture and Tennessee Valley Authority) increased from $10.8 million to $14.9 million; and that by the health-oriented agencies (Department of Health, Education and Welfare and Veterans Administration) increased from $31.2 to $39.5 million. The absolute dollar increase for these "special mission"-oriented agencies between the fiscal years 1954 and 1955 was $16.6 million out of the total increase of $18.0 million.

Table 2. Distribution, by broad classification, of support for federal grants and contracts for unclassified research in the life sciences for 1952, 1954, and 1955.

Item	Calendar 1952		Fiscal 1954		Fiscal 1955	
	Annual rate (thousands of dollars)	Percentage of total funds	Annual rate (thousands of dollars)	Percentage of total funds	Annual rate (thousands of dollars)	Percentage of total funds
Basic biological science	18,356.0	39.4	26,291.8	40.7	30,330.6	36.7
Applied medical science	16,117.0	34.6	23,721.5	36.7	25,081.7	30.4
Applied agricultural science	7,646.0	16.4	8,126.5	12.6	11,440.1	13.9
General support of science	4,509.0	9.7	6,393.1	9.9	15,691.6	19.0*
Total	46,628.0	100.1	64,532.9	99.9	82,544.0	100.0

* Includes $6.5 million for "Training," most of which was in health sciences.

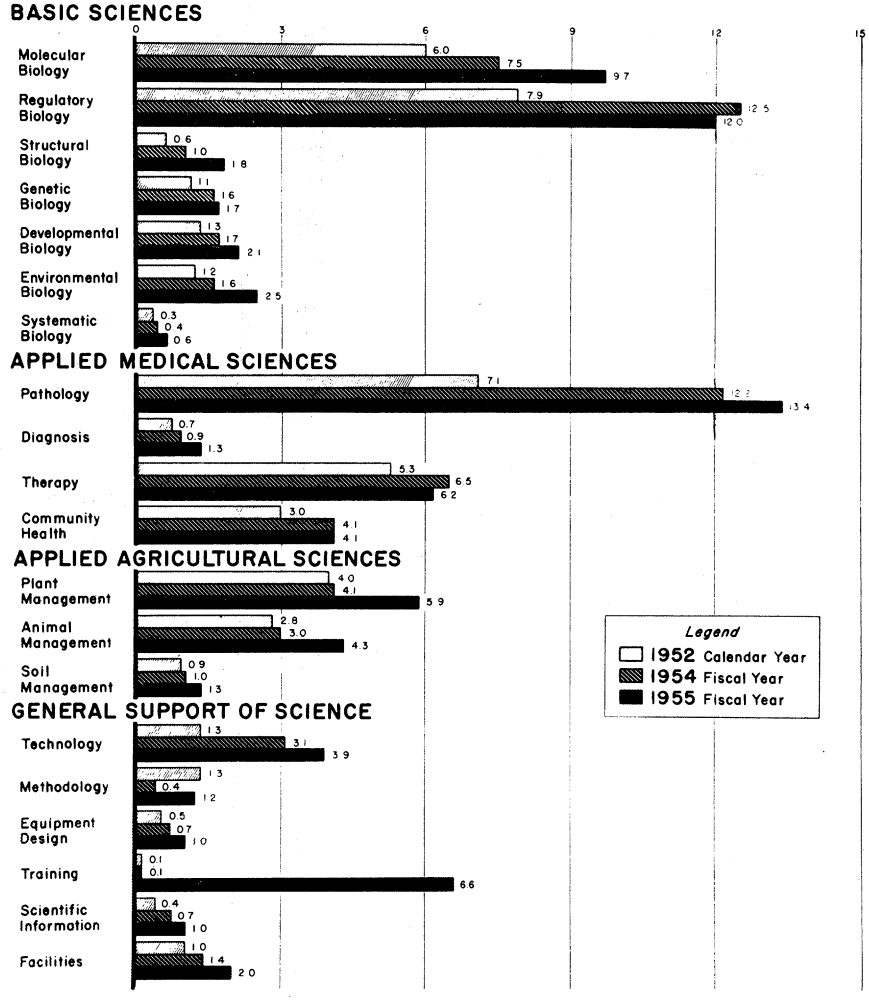

Fig. 2. Annual rate of support in millions of dollars, by category, for federal grants and contracts for unclassified research in the life sciences for 1952, 1954, and 1955.

Distribution by Category

The data for the distribution of federal grant and contract funds in the life sciences, by category (*1*), are presented in Fig. 2. All categories with the exception of "Methodology," "Regulatory biology," "Therapy," and "Community health" show a progressive increase since 1952. The fall-off in "Methodology" in 1954 may represent an artifact, reflecting a redefinition for this category in that year. The decrease in funds available to "Regulatory biology" and "Therapy" between 1954 and 1955 primarily reflects a reduction in programing in these categories by the National Institutes of Health.

The sizable increase for "Training" which appeared between 1954 and 1955 actually occurred in 1954, although considerable growth had already occurred prior to that time but was not reported (*2*). The majority of the funds in this category came from the National Institutes of Health.

Summary

Federal support of contract and grant research in the life sciences continued to grow during the period 1952–55 and showed an increase of 28 percent between the years 1954 and 1955. The basic biological science component (Table 2) increased from $18 to $26 million between 1952 and 1954 and to $30 million in 1955. Although a greater dollar amount is now available for basic research in the life sciences, the amount available in 1955 was proportionately a smaller part of the total than was the amount available in 1954. In 1955, $52 million was expended for activities which were not categorized as basic research. The needs and motivations of the major granting federal agencies are, and continue to be, primarily problem- and program-oriented.

References and Notes

1. W. V. Consolazio and M. C. Green, *Science* 124, 522 (1956).
2. National Science Foundation, *Federal Grants and Contracts for Unclassified Research in the Life Sciences, Fiscal Year 1955* (NSF, Washington, D.C., 1956).
3. The data presented in this article are from official findings of the National Science Foundation. However, the conclusions, whether stated or implied, are those of the authors and do not necessarily reflect the views of the National Science Foundation.
4. National Science Foundation, *Federal Funds for Science V: The Federal Research and Development Budget, Fiscal Years 1955, 1956, and 1957* (NSF, Washington, D.C., 1956).