

that scientific accomplishments of significance were achieved under this program and that the time, effort, and funds devoted to the activity were very profitably spent. Beyond this, the high degree of enthusiasm which these scholars, almost without exception, expressed concerning their extra-curricular experiences with people, practices, and institutions in this country indicates that a substantial added dividend is being obtained in the currency of international good-will and understanding. Comparison of the above data with corresponding figures for U. S. scholars going abroad under Fulbright grants shows that physics suffers somewhat percentage-wise in the latter case. The 28 foreign physicists mentioned previously constituted about 7½ percent of the total of such visiting scholars for 1951-52. Of some 250 U. S. lecturers and research scholars at the post-doctoral level who went abroad that year with complete Fulbright support, physicists made up barely 4 percent. They came from eight different universities and research agencies in this country and lectured or studied in seven foreign countries. This percentage of Fulbright-supported, U. S. physicists going abroad has stayed about the same in 1952-53, with the institutions of origin increasing to ten and the countries visited dropping to six.

It should be emphasized with regard to the foreign scholar phase of the Fulbright program that invitations from American institutions are vital to its successful operation. Only to the extent that such opportunities are provided will the number of foreign participants increase and the program as a whole be truly reciprocal. The Committee under whose administration this part of the Fulbright work falls has available a list of foreign scholars who have indicated their desire to teach in American universities or colleges during the academic year 1953-54. Each person so listed is considered by the U. S. Educational Foundation (or Commission) in his own country to be fluent in English and qualified by teaching experience and professional training for a lecturing appointment in a U. S. university. A number have international reputations in their fields of specialization.

Copies of this list, together with complete information regarding the mechanics of obtaining the services of the foreign scholar described therein, can be obtained from the Committee on International Exchange of Persons, Conference Board of Associated Research Councils, 2101 Constitution Avenue, N.W., Washington 25, D. C.

Dwight E. Gray
Library of Congress

AEC Semiannual Report

Weapons Tests and Public Safety

The Thirteenth Semiannual Report of the Atomic Energy Commission, released in January under the title, *Assuring Public Safety in Continental Weapons Tests*, summarizes the principal activities of the AEC during the last half of 1952 and includes a section of forty-

nine pages given over to a discussion of atomic detonations and relevant safety measures carried out at the Commission's test site near Las Vegas, Nevada.

Quantitative aspects of the AEC program are reviewed in the form of a condensed financial statement and in the usual series of appendices devoted to AEC organization, isotope distribution, publications lists, and other miscellaneous information.

The Commission's total assets at the end of the 1952 fiscal year amounted to about \$4.7 billion, of which \$3.5 billion was invested in plant facilities. Appropriations authorized by Congress last summer, however, represent the largest amount yet set aside for the AEC's production program, and it is estimated that when the construction for which funds have been appropriated is complete, the nation's capital investment in atomic energy will be about \$7.5 billion. The net cost of AEC operations during the 1952 fiscal year amounted to \$682 million, of which almost two-thirds was spent on the development and production of weapons and of fissionable materials. About five percent of the total operating costs were listed for physical research, with the amount spent on research in physics being \$17.6 million.

For the 1953 fiscal year, according to the report, approximately \$24.9 million was allocated to the support of basic physical research. About two-thirds of this went to AEC laboratories and about one-third to universities and private research institutions. Of the latter category, \$2.7 million went into contracts administered through a joint program with the Office of Naval Research. Applied research and development in the physical sciences required an additional \$14 million, most of which was allocated to the national laboratories of the AEC.

In connection with the section of the report which deals with tests and public safety, it is pointed out that twenty atomic explosions had already taken place at the Nevada proving ground by the end of 1952. While nearly all of the physical damage produced by the detonations has been confined to the 640 square miles of desert which make up the site, sufficient public and scientific apprehension has been evident as to the possibility of blast and radiation dangers beyond this area to warrant a full review of the extensive public safety program carried on by the Commission. The report undertakes to "explain the precautions taken against hazard to the public from blast or fall-out," and goes on to describe the nation-wide system of monitoring fall-out radioactivity and to assess the possible effect of recorded fall-out levels upon the public health.

The safety record has been impressive, considering the number of test detonations: fall-out radioactivity has in all cases been below tolerance levels, accumulation of radioactive material in the soil has not occurred, and no one has been injured by blast (although plaster has been cracked and windows broken in areas adjacent to the proving ground). The decision to use a continental location whenever possible, in preference to the more remote site at Eniwetok Atoll, was made primarily for reasons of convenience and economy and

has been well justified in practice, according to the Commission. Location of a proving ground within the United States, furthermore, has made it possible for civil defense personnel to take part in the tests, thus increasing the potential usefulness of the entire civil defense program.

The full report can be obtained (50 cents per copy) from the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C.

National Science Foundation

Federal Research and Development Survey

According to information compiled by the National Science Foundation in connection with its continuing studies of the research and development activities of the federal government, \$1839 million was spent by federal agencies on scientific research and development during the fiscal year 1952. The corresponding estimate for the 1953 fiscal year is \$2189 million, and amounts included in the President's budget of January 9th for these purposes total \$2327 million for fiscal year 1954.

Funds administered by the Department of Defense accounted for about seventy-two percent of the 1952 total, compared with fourteen percent for the Atomic Energy Commission and four percent for both the National Advisory Committee for Aeronautics and the Federal Security Agency. The remaining funds were expended by twenty other agencies. Similar ratios are indicated in the estimates for fiscal years 1953 and 1954.

Obligations for increasing existing federal research facilities or construction of new laboratories amounted to \$307 million for 1952, of which \$198 million was for the Department of Defense, \$60 million for the AEC, and \$31 million for the NACA.

The table at the bottom of this page summarizes all information assembled by NSF on obligations and expenditures for research and development for the three fiscal years. Reporting agencies include the Agriculture, Commerce, Defense, Interior, Labor, Post Office, State,

and Treasury Departments, the Atomic Energy Commission, Federal Civil Defense Administration, Federal Communications Commission, Federal Security Agency, Government Services Administration, Housing and Home Finance Agency, Interstate Commerce Commission, National Advisory Committee for Aeronautics, National Science Foundation, National Security Resources Board, Office of Defense Mobilization, Reconstruction Finance Corporation, Smithsonian Institution, Tariff Commission, Tennessee Valley Authority, and Veterans Administration.

Graduate Students in Science

Survey Says More Could Be Accepted

A nation-wide survey of graduate students in the natural sciences, recently completed for the National Science Foundation by the Office of Scientific Personnel of the National Research Council, indicates that graduate schools in this country could accept nearly 8000 more students for doctoral studies and about 11,400 more students for work towards masters' degrees in science.

The survey of the graduate science population and the training potential of the nation's graduate-science institutions, covering the academic year 1951, finds that 7800 of the 16,250 first-year graduate students have the necessary qualifications to earn doctoral degrees, but predicts that nearly three out of five of these "doctoral-potential" students probably will not complete their studies to the doctorate. Twenty-nine percent more first-year graduate students can now be accepted by American universities and graduate schools, according to the survey, which indicates that the large college graduating classes of 1949 and 1950 will result in a peak of new doctorates in 1953, with a probable decline beginning in 1954. There were altogether about 39,800 graduate students receiving training in the natural sciences during 1951.

The ten fields reporting the largest number of graduate students in 1951 were chemistry (6872), psychology

Estimated Obligations and Expenditures (in millions of dollars) of the Federal Agencies for Scientific Research and Development in Fiscal Years 1952, 1953, and 1954, as compiled by the National Science Foundation.

Agency	Obligations			Expenditures		
	1952 (Actual)	1953 (Estimate)	1954 (Estimate)	1952 (Actual)	1953 (Estimate)	1954 (Estimate)
Department of Defense	1705	1850	1805	1315	1600	1700
Atomic Energy Commission	229	262	281	250	292	288
National Advisory Committee for Aeronautics	82	95	71	67	76	95
Department of Agriculture	56	66	61	57	60	69
Federal Security Agency	53	67	78	65	74	65
Department of Interior	36	36	39	33	37	39
Department of Commerce	31	23	39	28	24	39
Other agencies	25	28	37	24	26	32
Total, all agencies	2216	2427	2411	1839	2189	2327

Note: Column items may not add to totals due to rounding.