

The original documents are located in Box 29, folder “8/9/75 HR4723 National Science Foundation Appropriations Authorization (2)” of the White House Records Office: Legislation Case Files at the Gerald R. Ford Presidential Library.

Copyright Notice

The copyright law of the United States (Title 17, United States Code) governs the making of photocopies or other reproductions of copyrighted material. Gerald R. Ford donated to the United States of America his copyrights in all of his unpublished writings in National Archives collections. Works prepared by U.S. Government employees as part of their official duties are in the public domain. The copyrights to materials written by other individuals or organizations are presumed to remain with them. If you think any of the information displayed in the PDF is subject to a valid copyright claim, please contact the Gerald R. Ford Presidential Library.

Exact duplicates within this folder were not digitized.

94TH CONGRESS } HOUSE OF REPRESENTATIVES } REPORT
1st Session } } No. 94-66

AUTHORIZING APPROPRIATIONS TO THE NATIONAL SCIENCE FOUNDATION

MARCH 14, 1975.—Committed to the Committee of the Whole House on the State
of the Union and ordered to be printed

Mr. TEAGUE, from the Committee on Science and Technology,
submitted the following

REPORT

[To accompany H.R. 4723]

The Committee on Science and Technology, to whom was referred the bill (H.R. 4723) to authorize appropriations for activities of the National Science Foundation, and for other purposes, having considered the same, report favorably thereon without amendment and recommend that the bill do pass.

PURPOSE OF THE BILL

The purpose of the bill is to authorize appropriations to the National Science Foundation for fiscal year 1976 in the amount of \$751.4 million out of money in the Treasury not otherwise appropriated and \$4.0 million in foreign currencies which the Treasury Department determines to be excess to the normal requirements of the United States.



This lengthy publication was not digitized. Please contact the Gerald R. Ford Presidential Library or the government documents department of a local library to obtain a copy of this item.

AUTHORIZING APPROPRIATIONS TO THE NATIONAL SCIENCE FOUNDATION

MARCH 20, 1975.—Committed to the Committee of the Whole House on the State
of the Union and ordered to be printed

Mr. TEAGUE, from the Committee on Science and Technology,
submitted the following

REPORT

[To accompany H.R. 4723]

The Committee on Science and Technology, to whom was referred the bill (H.R. 4723) to authorize appropriations for activities of the National Science Foundation, and for other purposes, having considered the same, report favorably thereon without amendment and recommend that the bill do pass.

PURPOSE OF THE BILL

The purpose of the bill is to authorize appropriations to the National Science Foundation for fiscal year 1976 in the amount of \$751.4 million out of money in the Treasury not otherwise appropriated and \$4.0 million in foreign currencies which the Treasury Department determines to be excess to the normal requirements of the United States.



This lengthy publication was not digitized. Please contact the Gerald R. Ford Presidential Library or the government documents department of a local library to obtain a copy of this item.

Calendar No. 106

94TH CONGRESS }
1st Session }

SENATE

{ REPORT
{ No. 94-111

NATIONAL SCIENCE FOUNDATION AUTHORIZATION ACT, 1976

MAY 9 (legislative day, APRIL 21), 1975.—Ordered to be printed
Filed under authority of the order of the Senate of May 8 (legislative day,
April 21), 1975

Mr. KENNEDY, from the Committee on Labor and Public Welfare,
submitted the following

REPORT

[To accompany S. 1539]

The Committee on Labor and Public Welfare, to which was referred the bill (S. 1539) to authorize appropriations for activities of the National Science Foundation, and for other purposes, having considered the same, reports favorably thereon with amendments and recommends that the bill as amended do pass.

I. SUMMARY

The purpose of S. 1539, as amended by the Committee, is to authorize appropriations to the National Science Foundation for fiscal year 1976 in the amount of \$822,600,000, and in foreign currencies which the Treasury Department determines to be excess to the normal requirements of the United States, \$4,000,000 for fiscal year 1976.

II. BACKGROUND

The National Science Foundation is the only Federal agency with a direct mandate to strengthen science and science education. It performs a critically important and unique function. We are looking to scientists for guidance in finding solutions to air and water pollution control problems; for improved designs for mass transportation systems; for more effective utilization and delivery of health services; and for methods of allocating scarce resources as fairly and effectively as possible.

To carry out these responsibilities the National Science Foundation has been directed by the Congress to:

Strengthen U.S. scientific research in the mathematical, physical, medical engineering, biological, social, and other sciences.

Focus U.S. science resources on selected current national problems.

Strengthen science education programs at all levels.

Stimulate international scientific cooperation between United States and foreign scientists.

Assist in providing the Nation with highly trained scientists and engineers through a program of fellowships for science and engineering.

Insure that science information is readily available to U.S. scientists and engineers.

Appraise the impact of research upon industrial development and the general welfare.

Gather and publish scientific and technical data pertinent to national science policy decisionmaking.

An expanding base of scientific knowledge is of critical importance to the Nation's future and to efforts to find ways to deal with a wide range of domestic and international problems. The products of research by U.S. scientists in all parts of the Nation not only have provided for the progress of science, but provide the knowledge base needed to increase understanding of the principles that govern the physical, life and social sciences—understanding which is essential if we are to enhance the quality of life.

Deferrals from fiscal year 1975 to fiscal year 1976.

Deferrals from fiscal year 1975 to fiscal year 1976 total \$20 million. They affect the following National Science Foundation programs:

National and Special Research Programs;
National Research Centers;
Research Applied to National Needs;
Science Education Improvement; and
Institutional Improvement for Science.

The impact of these deferrals was felt throughout the scientific community by researchers, science educators, students and institutions who found their budgets, already stretched to the breaking point by the impact of inflation, subjected to yet another burden.

The deferred funds will become available in fiscal year 1976, and will increased by \$20 million the amount available for expenditure by the National Science Foundation.

Action by the Office of Management and Budget

The National Science Foundation submitted to the Office of Management and Budget a recommended program for fiscal year 1976 for the Foundation at a level of \$899.5 million.

This budget was prepared by the National Science Board whose membership includes 25 outstanding scientists and science educators and whose recommendations reflected their assessment of the level of funding required for the National Science Foundation for the coming fiscal year.

The Office of Management and Budget reduced this budget by \$155.6 million, an action which caused the National Science Foundation and the National Science Board to request the restoration of some portion of these cuts. Specifically requested was an additional \$3 million for Institutional Improvement for Science, an additional \$11 million for Science Education Improvement and an additional \$500,000 for Program Development and Management. The only increase approved by OMB was \$500,000 for Program Development and Management.

Subsequently, following discussions between the President and the Science Adviser to the President, an additional \$11 million was made available for basic research. No additional funds were made available for science education.

Consideration of the budget request

The President's budget included a request for \$755.4 million¹ for the National Science Foundation in fiscal year 1976. In addition, \$20 million in fiscal year 1975 deferrals will be available in fiscal year 1976.

The following bills authorizing appropriations for the National Science Foundation were considered by the Committee: S. 1539, introduced by Senator Kennedy; S. 1478 introduced by Senator Javits; and H.R. 4723, passed by the House of Representatives and referred to the Committee.

The Special Subcommittee on the National Science Foundation held hearings on these bills on March 14, 1975, and on April 21, 1975. The following officials of the National Science Foundation testified before the Subcommittee on March 14 in support of the National Science Foundation's fiscal year 1976 budget request:

Dr. Norman Hackerman, Chairman of the National Science Board;

Dr. H. Guyford Stever, Director of the National Science Foundation;

Dr. Edward Creutz, Assistant Director for Research;

Dr. Alfred Eggers, Assistant Director for Research Applications;

Dr. Robert Hughes, Assistant Director for National and International Programs; and

Dr. Lowell Paige, Assistant Director for Education.

William Carey, Executive Officer of the American Association for the Advancement of Science also testified on March 14.

Further hearings were held on April 21 and testimony was presented by:

The Honorable Robert E. Bauman, Member of Congress;

The Honorable Gary A. Myers, Member of Congress;

Dr. Steven Muller, President of Johns Hopkins University;

Dr. Stanley Ahmann, Executive Director of the Education Commission of the States;

Professor Murray Braden, Macalester College, St. Paul, Minnesota, on behalf of Associated Colleges of the Midwest;

Ms. Claire Olson, on behalf of the American Association of Community and Junior Colleges;

¹ Includes \$4.0 million under the Special Foreign Currency Program.

Professor Frank von Hippel, Center for Environmental Studies, Princeton, New Jersey;

Dr. José V. Martinez, on behalf of the Society for the Advancement of Chicanos in Science and the Society of Hispanic Professional Engineers;

Mr. Miles Fisher, on behalf of the National Association for Equal Opportunity in Higher Education; and

Dr. Onalee McGraw, Citizens United for Responsible Education and Coordinator for National Coalition for children.

At an Executive Meeting of the Special Subcommittee on the National Science Foundation on April 30, 1975, Senator Paul Laxalt, ranking minority member of the special subcommittee, offered several amendments to S. 1539 which were unanimously adopted. S. 1539 as amended was then unanimously reported to the full Committee on Labor and Public Welfare.

On May 6, 1975, the Committee on Labor and Public Welfare unanimously ordered S. 1539 as amended reported favorably to the Senate.

III. NATIONAL SCIENCE FOUNDATION FISCAL YEAR 1976 BUDGET REQUEST BY PROGRAM ACTIVITY

(In millions of dollars)

NSF budget activities	Fiscal year 1975			Fiscal year 1976			Difference fiscal year 1976-75	
	(1) Fiscal year 1974 actual	(2) Program funded by Congress	(3) Current plan Net of deferrals and ERDA transfer	(4) New obligational authority	(5) Plus fiscal year 1975 deferrals	(6) Total program (cols 4+5)	(7) New obligational authority (cols 4-3)	(8) Total program including deferrals (cols 6-3)
Scientific research project support.....	289.8	341.3	340.6	390.0	.....	390.0	+39.4	+39.4
National and special research programs.....	85.6	87.2	86.5	115.5	.....	115.5	+29.9	+29.9
National research centers.....	43.2	57.0	56.4	60.2	.....	60.2	+17.0	+17.0
International cooperative scientific activities.....	5.1	6.0	5.0	6.2	.....	6.2	+1.1	+1.1
Research applied to national needs.....	75.1	142.1	82.7	71.5	8.0	79.5	-11.2	-3.7
Integration of basic and applied research.....	11.5	2.0	2.0	3.0	.....	3.0	+1.5	+1.5
Institutional science and research utilization.....	19.0	13.2	13.2	14.8	5.5	20.3	+1.5	+1.5
Graduate student support.....	67.9	63.2	61.2	50.9	4.0	54.9	-11.2	-7.2
Research and policy studies.....	2.6	2.9	2.9	2.7	.....	2.7	-2.7	-2.7
Planning and policy studies.....	3.9	6.0	6.0	4.0	.....	4.0	-2.0	-2.0
Science advisory activities.....	31.7	38.1	38.7	41.7	.....	41.7	+3.0	+3.0
Program development and management.....	.....	.....	.....	.....	.....	.....	.....	.....
Subtotal, salaries and expenses appropriation.....	640.0	763.9	692.2	751.4	20.0	771.4	+19.2	+19.2
Special foreign currency appropriation.....	5.7	4.9	4.9	4.0	.....	4.0	-1.9	-1.9
Total, NSF.....	645.7	768.8	697.1	755.4	20.0	775.4	+19.3	+19.3

A brief description and selected highlights of the Foundation's programs included in the Administration's budget request for fiscal year 1976 are provided in the following paragraphs:

Scientific research project support

	<i>Millions</i>
Actual fiscal year 1974.....	\$289.8
Estimate, fiscal year 1975.....	340.6
Estimate, fiscal year 1976.....	380.0

Scientific research project support accounts for nearly 50 percent of the total NSF budget and is the principle program for support of basic research in the science disciplines. It includes research in all fields of science—physical, environmental, biological, materials and social sciences, and engineering. The research is conducted mainly through academic institutions and nonprofit research institutions with a small but increasing participation by industrial firms and other for-profit institutions.

This program stimulates the development of new scientific knowledge and helps prepare the Nation for emerging problems of the future. It is also a key factor in insuring that U.S. science maintains its position at the frontier of world research.

Environmental Sciences.—Fundamental research in the Atmospheric and Earth Sciences and Oceanography is being increased to \$45.1 million or \$3.2 million over the fiscal year 1975 total of \$41.9 million. In the atmospheric sciences emphasis is being given to cloud physics, mesoscale weather, forecasting theory, and efforts conducted under the International Magnetospheric Study to advance the understanding of the earth's outermost atmosphere.

In the Earth Sciences, the Foundation provides support for the International Geodynamics Program, an organized effort of 46 nations to explore and test the plate tectonics theory to better understand earthquakes and volcanoes, the formation of ore deposits, and mountain building mechanisms. In Oceanography, the budget provides for increased studies of physical and chemical processes in coastal areas and of ocean basins, including the analysis of cores obtained through the Foundation's Deep Sea Drilling Project.

Biological Sciences.—The budget includes increased support for the Biochemistry and Physiology subactivity, which increases from \$37.7 million in fiscal year 1975 to \$41.8 million in fiscal year 1976. This increase provides for expanded research support for neurobiology, the biochemistry and physiology of plants, with particular emphasis on photosynthesis, nitrogen fixation, and enzyme mechanisms. Research in plant science is expected to contribute significantly to efforts to find solutions to food and energy problems over the long term. Other research areas planned for increased support include Cellular Biology and Ecology and Population Biology. In Cellular Biology, support is provided for studies on plant development and cell culture, and regulation of gene expression. Support is also provided for cell and tissue culture facilities. Knowledge of cell biology is particularly significant in understanding and controlling disease and is also pertinent to research in the areas of food and energy. Increased support for Ecology and Population Biology will deal with fundamental processes taking place in ecosystems to stress. Instrumentation needed for advanced research in the Biological Sciences will also be given special emphasis in fiscal year 1976.

Mathematical and Physical Sciences.—Support for fundamental research in the Mathematical and Physical Sciences in fiscal year 1976 totals \$118.5 million or \$15 million over the fiscal year 1975 total of \$103.5 million.

Expanded support is provided for Physics research, including intermediate energy physics, and the development and acquisition of advanced physics instrumentation. The budget also makes provision for research support that will make it possible to achieve increased utilization of national accelerators to exploit new physics research opportunities.

Increased support for Chemistry research includes the provision of frontier type instrumentation; expanded research in catalysis and in other energy-related chemistry areas; and studies of chemical separation, liquids, and the chemical/biological interface.

In Astronomy, the focus is on studies of binary stars, mechanisms of solar births and deaths, and the development of millimeter wave instrumentation.

Research in mathematics will be intensified in such areas as complex function theory, differential geometry, dynamical systems, functional analysis, and finite groups. Research will also be increased in control and optimization theory, and in the application of mathematics to biological and social phenomena.

Social Sciences.—In the social sciences, increased emphasis is given to the study of economic theory and measurement techniques to analyze energy, resources, productivity, and international economic problems including research on the multiple aspects of the inflationary process and the international aspects of changing resource scarcity. Expanded support is also planned for research employing increasingly sophisticated mathematical models of social change to provide improved understanding of the social impact of technology, and limitations in raw materials and food supplies. Support for research in the Social Sciences totals \$28.9 million in fiscal year 1976, an increase of \$2.6 million over the fiscal year 1975 total.

Engineering.—Increased emphasis is being placed on engineering concepts which provide new information on the reduction or elimination of energy-intensive steps in industrial processing. Food engineering is another area of focused research support aimed at providing basic engineering information on various aspects of production, materials properties and processing techniques. Fundamental thermal and diffusional properties will be examined as well as freezing, dehydration and other processing techniques. Other areas of expanded support include material resource technology, fluid mechanics, mining processing techniques, wind engineering, bio-engineering, and automation. Engineering research support totals \$39.1 million in fiscal year 1976, an increase of \$4.0 million over the fiscal year 1975 total.

Materials Research.—Expanded materials research efforts in fiscal year 1976 involve intensified studies of the fundamental properties of materials to increase understanding of the behavior of materials in complex environments of technological importance, as well as studies on materials-limited technologies. Support for Materials Research totals \$47.3 million in fiscal year 1976, an increase of \$4.0 million over the fiscal year 1975 total.

Computer Research.—Emphasis in fiscal year 1976 is on fundamental studies in theoretical computer science, computer system fault tolerance, increased quality of software, and technical aspects of privacy and security. Computer research support totals \$13.0 million in fiscal year 1976, an increase of \$1.5 million over the fiscal year 1975 total.

<i>National and special research programs</i>		<i>Millions</i>
Actual, fiscal year 1974.....	-----	\$85.6
Estimate, fiscal year 1975.....	-----	86.5
Estimate, fiscal year 1976.....	-----	115.5
Plus fiscal year 1975 deferrals.....	-----	.5
Total available, fiscal year 1976.....	-----	116.0

The National and Special Research Programs (NSRP) activity includes major research efforts that are heavily involved in research on global and environmental issues such as air/sea interaction, global weather, and ocean circulation patterns and/or research that requires extensive coordinated efforts and logistic support on a national or international scale. Some of the programs in this budget activity, such as the U.S. Antarctic Research Program, the Arctic Research Program, the Ocean Sediment Coring Program, and the International Decade of Ocean Exploration, involve extensive international coordination and cooperation in the planning and conduct of research, as well as extensive interaction with other Federal agencies.

An amount of \$4.0 million is proposed for a Climate Dynamics program, which is being organized as a separate subsactivity in fiscal year 1975, including elements of existing programs, and is a focused effort to improve understanding of global climate processes as a basis for predicting climate variations and assessing their impact on agriculture and other matters important to man.

No new ship construction funds are included in the budget for fiscal year 1976. \$4.0 million was included in the fiscal year 1975 budget for this purpose. This results in a reduction of about \$4.0 million in fiscal year 1976. Three new ships which are currently under construction will be coming into the inventory and will significantly upgrade the academic research fleet.

The Global Atmospheric Research Program (GARP) will be funded at the same \$4.0 million level as in fiscal year 1975. Research emphasis in GARP will be on analysis of data generated by investigations of the troposphere and stratosphere through research projects of the GARP Atlantic Tropical Experiment and the Air Mass Transformation Experiment.

Support for the International Decade of Ocean Exploration (IDOE) will be increased by \$1.0 million to permit the Foundation to give greater emphasis to environmental forecasting and seabed assessment efforts which are important in national environmental and resource management problems.

An additional \$3.6 million is proposed for the Ocean Sediment Coring Program to permit initiation of the International Phase of Ocean Drilling (IPOS). Increased participation by other nations is expected, through contributions of funds, facilities, and scientists.

The budget provides an additional \$1.9 million for preliminary work on the Arctic Offshore Program to develop needed data on environmental problems associated with Alaskan Arctic continental shelf resource development and transportation.

An amount of \$18 million is included for a nonrecurring requirement, the procurement of two LC-130R replacement aircraft for the U.S. Antarctic Research Program (USARP). Also, an additional \$3.9 million is included for the U.S. Antarctic Research Program, primarily for increased cost of support operations.

<i>National research centers</i>		<i>Millions</i>
Actual, fiscal year 1974.....	-----	\$43.2
Estimate, fiscal year 1975.....	-----	50.4
Estimate, fiscal year 1976.....	-----	60.2
Plus fiscal year 1975 deferrals.....	-----	2.0
Total available, fiscal year 1976.....	-----	62.2

A total of \$62.2 million is included for support of the five NSF-sponsored research centers. The Centers provide advanced and unique facilities which are available on a competitive basis to visiting scientists. Scientific and support staff are maintained at the Centers to provide the necessary expertise to support the research programs of visiting scientists, to develop advanced instrumentation, and to participate in the conduct of advanced research programs. The centers are operated and managed by nonprofit organizations or universities under contract to the Foundation.

An amount of \$3.9 million is included for the National Astronomy and Ionosphere Center (NAIC) at Arecibo, Puerto Rico. The Arecibo telescope will have a sensitivity and resolution 1,000 times greater than that available prior to the recently completed resurfacing of the 1,000 foot antenna and the installation of new radar equipment.

An increase of \$900,000 to a level of \$8.5 million will permit the Kitt Peak National Observatory (KPNO) to increase its research and development of an advanced electrooptic detector system to optimize the light-gathering power of its existing telescopes and to cover rising costs associated with full operation of the new four-meter (158 inch) telescope.

Fiscal year 1976 will see the first full-year operation of a four-meter telescope at Cerro Tololo Inter-American Observatory (CTIO) in Chile. This new instrument is the largest telescope in the Southern Hemisphere.

Preliminary operations and testing by the National Radio Astronomy Observatory (NRAO) of the Very Large Array (VLA) will begin toward the end of fiscal year 1976, when two antennas, one antenna transporter, 0.8 miles of wye trackage, and central systems will be available for initial tests.

The National Center for Atmospheric Research (NCAR) will continue emphasis on computer-based weather prediction experiments using data from the GARP Atlantic Tropical Experiment (GATE). Work on global weather prediction models will be extended in fiscal year 1976. Funding in the amount of \$3,150,000 is budgeted for expansion of the computer facility, including initial payment on the lease of an advanced computer at NCAR.

Construction of additional space to house the new computer will require about \$1.2 million in fiscal year 1976.

International Cooperative Scientific Activities

	<i>Millions</i>
Actual, fiscal year 1974.....	\$6.3
Estimate, fiscal year 1975.....	8.0
Estimate, fiscal year 1976.....	8.0

In fiscal year 1976, the Foundation plans to support U.S. participation in cooperative research and exchange programs in 20 countries: Argentina, Australia, Brazil, Bulgaria, Czechoslovakia, France, Hungary, India, Japan, Mexico, New Zealand, Poland, Republic of China, Romania, Peoples Republic of China, Saudi Arabia, Egypt, Yugoslavia, and the U.S.S.R. In addition, the regional approach, initiated in fiscal year 1974 for Latin America, will be expanded to include the Middle East and Far East but without execution of formal agreements. In fiscal year 1976, the Foundation also expects to play a significant role in the scientific and technical aspects of broad cooperative programs with Saudi Arabia, Egypt, Italy and India.

Research applied to national needs

	<i>Millions</i>
Actual, fiscal year 1974.....	\$75.1
Estimate, fiscal year 1975.....	82.7
Estimate, fiscal year 1976.....	71.5
Plus fiscal year 1975 deferrals.....	8.0
Total available.....	79.5

An amount of \$71.5 million, in new obligational authority is included in the budget for the RANN program. This amount plus \$8.0 million in fiscal year 1975 deferrals brings the total amount available for RANN in fiscal year 1976 to \$79.5M to support four major program areas: Energy; Environment; Productivity; and Exploratory Research and Problem Assessment.

The Foundation's program of Research Applied to National Needs (RANN) focuses U.S. scientific and technical resources on selected problems of national importance for the purpose of contributing to timely practical solutions. RANN serves as a bridge between the Foundation's basic research programs and the development, demonstration, and operational programs of Federal mission agencies, State and local governments, and industry.

Energy.—All major research projects moving toward development and demonstrations in solar and geothermal energy were transferred to the Energy Research and Development Administration (ERDA) in January fiscal year 1975. The NSF RANN program will focus its remaining energy research efforts on innovative systems and component research in energy resources, as well as in energy conversion, storage, and transportation and energy systems, drawing especially on the unique scientific expertise of universities.

Environment.—Emphasis under the Environment program subactivity will be placed on the Trace Contaminants Program element to expand research on the growing impact of organic chemicals on environment and health; on weather modification research to permit more extensive field experimentation in hail

suppression; and on continued investigation on inadvertent weather modification in dense urban areas. In addition, earthquake engineering efforts on the vulnerability of industrial structures, dams, and underground conduits, deferred from fiscal year 1975, will be continued in fiscal year 1976.

Productivity.—The Productivity subactivity of the Foundation's RANN program consists of three elements: Public Sector Technology; Public Policy and Economic Productivity; and Public Policy and Human Resources. Support for all three of these program elements will be increased in fiscal year 1976 in recognition of a serious decline in the rate of U.S. productivity growth along with simultaneous inflation and recession. The Foundation will support systematic research on human factors, organizational and managerial behavior, capital, technology, and their interactions. Emphasis will also be given to studies of the Nation's economic regulatory structure, since it provides the general framework and incentives for economic activity, to evaluate the social benefits and costs of alternatives. The fiscal year 1976 RANN program includes increased research efforts in both public technology and public regulation and economic policy. Special consideration will be given to systems analysis and the role of new technology to improve service productivity, as well as to the effectiveness of the Nation's regulatory structure and the need for better measurement technology for input and output.

Exploratory research and problem assessment.—The Technology Assessment Program will be increased in fiscal year 1976 to meet the needs for additional applied and basic research in this area as expressed by other Federal agencies and the Board of the Office of Technology Assessment. Added funding is also budgeted for the Exploratory Research and Technological Opportunities element to strengthen the focus on selected problems of resource scarcity and to explore the potential for significant scientific breakthroughs in advanced industrial processing.

Intergovernmental science and research utilization

	<i>Millions</i>
Actual, fiscal year 1974.....	\$11.5
Estimate, fiscal year 1975.....	2.0
Estimate, fiscal year 1976.....	3.0

The Intergovernmental Science and Research Utilization (ISRU) activity combines the Foundation's Intergovernmental Science Program and the Experimental R&D Incentives Program into a comprehensive effort designed to increase scientific capabilities in the utilization of science and technology in the public and private sectors.

An amount of \$1.0 million is included in the budget for the Intergovernmental Science portion of the ISRU activity. In the State government area, fiscal year 1976 emphasis will be placed upon evaluations and comparisons of the model organizations already funded. Some additional demonstrations to increase legislative science capabilities are also planned. Local government science and technology demonstrations will be re-oriented and expanded to a regional approach in order to promote the transfer of results between similarly

structured cities. A new thrust will be developed in the area of academic public service to respond to growing expressions in State and local government and academic communities for improved means for using the academic community in decisionmaking and for communicating government needs to universities and colleges.

Funding for the Experimental R&D Incentives Program will be increased from a level of \$1 million in fiscal year 1975 to \$2 million in fiscal year 1976. (The Foundation is reprogramming an additional \$600,000 to this program to comply with fiscal year 1975 Congressional guidance.) The program will focus on rigorous large-scale evaluation of experiments conducted in previous years and on selected public and private sector utilization in dissemination activities connected with the RANN program. The increased funding will also provide for expansion of the evaluations and for the design of computer systems to better match RANN output with user requirements.

Institutional improvement for science

	<i>Millions</i>
Actual, fiscal year 1974.....	\$10.0
Estimate, fiscal year 1975.....	0
Estimate, fiscal year 1976.....	0
Plus fiscal year 1975 deferrals.....	5.5
Total available, fiscal year 1976.....	5.5

The Institutional Improvement for Science Program is designed to provide funds for discretionary and flexible use by college and university administrators to help sustain quality and balance in academic science. No new funding is requested for this program for fiscal year 1976. However, an amount of \$5,500,000 of funding provided for use in fiscal year 1975 was included in the President's deferral message and is planned for obligation in this program in fiscal year 1976. The entire amount of \$5.5 million will be used for the Institutional Grants for Science subactivity which provides funds for flexible use for science needs. Of the \$5.5 million, \$3.0 million is earmarked for institutions receiving \$1.0 million or less in Federal research funds.

Graduate student support

	<i>Millions</i>
Actual, fiscal year 1974.....	\$13.0
Estimate, fiscal year 1975.....	13.2
Estimate, fiscal year 1976.....	14.8

The National Science Foundation will again provide support for approximately 500 new graduate fellowships in fiscal year 1976. These competitive three-year fellowships are designed to insure that a cadre of the brightest science students will have an opportunity to pursue science careers in disciplines of their choice. The Foundation will support about 1,565 graduate fellowships and traineeships, including 500 new awards to be made. The Foundation has been designated as lead Federal agency for science manpower training in energy-related fields, and the fiscal year 1976 program includes support for energy related graduate traineeships and postdoctoral fellowships in order to help meet the Nation's emerging needs for scientific and professional manpower with specialized training and experience in energy-related fields. An increase of \$1.6 million is budgeted for fiscal year 1976 to permit an increase of the stipend and cost of education allowances to be awarded

in the Foundation's Graduate Fellowship and Graduate Traineeship programs.

	<i>Millions</i>
<i>Science education improvement</i>	
Actual, fiscal year 1974.....	\$67.7
Estimate, fiscal year 1975.....	61.2
Estimate, fiscal year 1976.....	50.0
Plus fiscal year 1975 deferrals.....	4.0
Total available, fiscal year 1976.....	54.0

Funds in the amount of \$54 million are included for the Science Education Improvement Activity, including \$50 million of new funds and \$4 million of fiscal year 1975 funds which have been deferred and will be used in fiscal year 1976. This activity provides support for programs that are designed to increase educational efficiency, help provide the essential number and variety of trained scientists and engineers, and provide science training that will enable the non-scientist to function effectively, both as a worker and as a citizen, in our science and technology intensive society. The plan for fiscal year 1976 reflects a decrease of \$7,150,000 compared to the budget for fiscal year 1975. This reduction reflects overall budgetary priorities. To accomplish this reduction, two programs, Faculty Fellowships and Foreign Energy Scholars, have been eliminated and funding has been reduced in a number of other program elements.

Planning and policy studies

	<i>Millions</i>
Actual, fiscal year 1974.....	\$2.6
Estimate, fiscal year 1975.....	2.9
Estimate, fiscal year 1976.....	2.7

An amount of \$2.7 million is budgeted for NSF Planning and Policy Studies. A decrease of \$250,000 results from overall budgetary constraints and will necessitate a curtailment of energy resources assessment. The Science Resources Studies program activity will continue surveys, studies, and projections of R&D manpower, R&D economics, academic science, energy R&D, and indicators of the health of science. In addition, Science Planning and Policy Analysis and Program Evaluation Studies will provide inputs to planning of NSF goals and priorities, and will support evaluations of selected NSF programs and development of advanced evaluation methodologies.

Science advisory activities

	<i>Millions</i>
Actual, fiscal year 1974.....	\$3.5
Estimate, fiscal year 1975.....	6.0
Estimate, fiscal year 1976.....	4.0

Two of the Foundation's programs, Science and Technology Policy Supporting Studies and Energy R&D Policy Research, directly support the Director of the National Science Foundation in his role as the President's Science Advisor. Funding in the amount of \$4 million is budgeted for these activities in fiscal year 1976, or \$2 million less than in fiscal year 1975. The Science and Technology Policy Supporting Studies program provides the analytical basis for policy formulation in support of the Director's role as Science Advisor and Chairman for the Federal Council for Science and Technology (FCST). An

increase of \$500,000 proposed for fiscal year 1976 reflects increased emphasis on policy studies in areas of materials, world food and renewable resources, domestic policy alternatives, and international technology transfer initiatives. The decrease in Energy R&D Policy Research reflects the assumption by the Energy R&D Administration (ERDA) of some energy R&D policy research activities formerly supported under this program.

Program development and management

	<i>Millions</i>
Actual, fiscal year 1974.....	\$31.7
Estimate, fiscal year 1975.....	38.7
Estimate, fiscal year 1976.....	41.7

The Program Development and Management (PD&M) activity, which provides for the operation, support, management, and direction of all NSF programs and activities, is budgeted at \$41,700,000 for fiscal year 1976. This includes salaries and operational expenses of all NSF employees and the staffing and operational support for the Director of the Foundation in his role as the President's Science Advisor and Chairman of the Council for Science and Technology. An increase of \$3 million over the fiscal year 1975 level will support substantially the same level of operation as in fiscal year 1975. The increase is required to accommodate increased personnel compensation and benefits resulting from the October 1974 pay increase, full year costs of additional rental space acquired during fiscal year 1975, and rising costs of other operating activities.

Special foreign currency program

	<i>Millions</i>
Actual, fiscal year 1974.....	\$5.7
Estimate, fiscal year 1975.....	4.9
Estimate, fiscal year 1976.....	4.0

The Special Foreign Currency Program utilizes U.S.-owned excess currencies in certain foreign countries to support cooperative scientific projects, seminars, and travel of U.S. and foreign scientists involved in mutually beneficial efforts. The activities utilize U.S.-owned non-convertible foreign currencies generated through agricultural assistance programs and other activities. There are currently seven "Special Foreign Currency" countries: Burma, Egypt, Guinea, India, Pakistan, Poland, and Tunisia. The Foundation makes grants to U.S. and foreign institutions, payable in the currency of the country, for (1) cooperative research projects and other scientific activities and (2) the procurement of translations of foreign scientific and technological information. The level of support for special foreign currency activities will decrease by about \$855 thousand in fiscal year 1976 due to depletion of U.S.-owned foreign currency in Yugoslavia and Morocco and a decrease in funds available in Poland.

IV. ACTION BY THE COMMITTEE ON LABOR AND PUBLIC WELFARE

The purpose of S. 1359 as amended by the Committee is to authorize appropriations to the National Science Foundation for fiscal year 1976 in the amount of \$826.6 million, including \$4 million in Foreign Currencies which the Treasury determines to be excess to the normal

requirements of the United States. Additionally, \$20 million in funds deferred during fiscal year 1975 are to be made available for fiscal year 1976. Thus, the Foundation will have available \$846.6 million for obligation in fiscal year 1976, an increase of \$71.2 million over the Administration request. The following action was taken by the Committee:

Scientific research project support

The budget request submitted by the Administration included \$380 million for Scientific Research Project Support.

Support for basic research conducted primarily in the nation's colleges and universities has never been more important. The effects of inflation are causing institution after institution to incur deficits even after sharp cutbacks in their programs. The sharp drop in federal support for graduate students in the past 5 years, the steadily eroding proportion of Federal expenditures available to support academic science, and the impact of inflationary costs on labor-intensive university research have combined to pose a demonstrable threat to the stability of basic research in our colleges and universities.

Basic research is fundamental to the advancement of knowledge. It makes possible the applications which have had those great advances in technology which currently underpin our economy. Without a continual supply of new knowledge our ability to grow economically and competent in international markets will be severely diminished.

The Federal Government plays a significant role in supporting basic research, with outlays in 1972 accounting for 62 percent of our total national research outlay. But of significance, in constant dollars, Federal expenditures for basic research have declined by more than 7 percent from 1968 to 1972; current estimates indicate that this decline is continuing. In 1968, total Federal expenditures for university performed basic research were \$1.037 billion, with universities expending \$509 million of their own funds for that purpose. By 1972, the comparable Federal figure was \$964 million with an increase in institutional expenditures for basic research to \$653 million. Current inflationary pressures are causing institutions to reduce, not increase, their expenditures for basic research.

The consequences to the Nation's scientific effort and to the health of the research institutions are significant. The National Board on Graduate Education pointed to the problems ahead for university research effort in its January 1974 report, *Federal Policy Alternatives Toward Graduate Education*:

* * * recent reductions in levels of research support coming at a time of inflationary increases in costs have placed many universities in a tight financial squeeze and have endangered the levels of achievement of the 1960's. A clear danger signal is evident. Problems that may become exceedingly critical have begun to appear, and if further significant reductions in research support take place these problems will become acute. American universities have a unique research capability which has emerged largely as a consequence of the partnership between the Federal Government and the universities. This unique quality, which is one of the keystones of national achievement, should not be impaired.

In an earlier report, in 1973, the National Board on Graduate Education also expressed concern about the long term effects of the erosion of support for basic science:

The real and present danger is that the urgency of current problems will lead to an underestimate of the seriousness of problems to be encountered one to five decades in the future, and to an incorrect assessment of the value of basic research and of the level at which it should be supported. The absence of growth (in real terms) of federal expenditures for basic research in colleges and universities since 1968 is an ominous development.

The Committee approved \$389 million for Scientific Research Project Support, an increase of \$9 million over the Administration's budget request.

National and special research programs

The budget request submitted by the Administration included \$107 million for National and Special Research Programs.

The Committee has repeatedly called attention to the importance of updating the academic research fleet. Three ships previously authorized by the Committee in the 150-159 foot class will enter service during fiscal year 1976. The Committee is pleased that this will bring the average age of this portion of the academic research fleet down from 20 years to 12 years. The average age of ships in the coastal category, however, is now 17.5 years and is expected to reach 19.5 years in 1977. This is of special concern to the Committee because of the increased need for research in coastal waters and on the Continental Shelf. An up-to-date research fleet is required for this effort, and the Committee has added \$4 million to the Administration's budget request to be used for the construction of research ships in this category.

The other programs authorized by the Committee include major research efforts which relate to specific geographic areas or which are of such magnitude that extensive coordination of planning, funding, evaluation and logistic support are essential to ensure maximum effectiveness and efficiency in program performance.

The Committee has approved a total of \$113.5 million for National and Special Research Programs, an increase of \$6.5 million over the Administration's budget request.

Science information activities

The budget request submitted by the Administration included \$5 million for Science Information Activities.

The Committee has been concerned over the continuing problems caused by cutbacks in funding for the Office of Science Information Service in the National Science Foundation. Severe dislocations have been caused in the orderly development of information handling systems. Many of the most difficult problems facing the United States today—particularly those broadly described as energy and environment as well as those related to health—depend for their solutions upon effective use of scientific and technical information. Such informational capabilities do not presently exist although other national governments (notably the West German, Japanese and Soviet governments) are making much larger national commitments to the development of information-transfer systems. Scientific and technological

information should be looked at as a national resource and be utilized to its fullest effective potential.

In the United States, the National Science Foundation is the only Federal agency which has supported systematic development of information services and coordination of those services across the full range of U.S. national interests. The proposed fiscal year 1976 budget for the Office of Science Information Services, while larger than the budget for fiscal year 1975, is still less than 75 percent of fiscal year 1974 expenditures and is less than adequate to meet perceived national needs.

Therefore, the Committee approved \$7 million for this item, an increase of \$2 million over the Administration request. The Committee also placed a floor under this \$7 million authorization.

Research applied to national needs

The budget request submitted by the Administration included \$71.5 million for Research Applied to National Needs.

This program focuses U.S. scientific and technical resources on selected problems of national importance for the purpose of contributing to timely, practical solutions. It serves as a bridge between the Foundation's basic research programs and the development, demonstration and operational programs of federal agencies, State and local governments, and industry.

Urgent problems are being addressed by this program, notably in the fields of energy, environment and productivity. Each of these issues figures prominently in the continued well-being and strength of the Nation. The Committee expects the program, following the transfer of a major portion of its solar and geothermal energy research to the Energy Research and Development Administration, to focus on advanced energy concepts—those of high risk but with significant, long range future potential.

To provide an improved scientific base for managing and protecting our environment, both natural and man-made, the Committee has proved an increase of \$1 million over the budget request for this program. It has placed a floor of \$25 million under environmental programs, which includes \$5.5 million for earthquake engineering.

The Committee has also included a provision requiring that at least ten percent of the funds available for Research Applied to National Needs must be awarded to small businesses which have developed outstanding scientific and technical capabilities and which have too often been overlooked as a resource in meeting this Nation's scientific and technical needs.

The Committee approved \$81 million for Research Applied to National Needs, an increase of \$9.5 million over the budget request.

Intergovernmental science and research utilization

The budget request submitted by the Administration included \$3 million for Intergovernmental Science and Research Utilization.

This program is a comprehensive effort designed to increase scientific capability and the utilization of science and technology in the public and private sectors. A survey of the extent of the Federal commitment to fostering applications of its research programs conducted by the National Academy of Engineering, found that while billions are being spent on research itself, a total of only \$43 million is being spent by the Federal Government in applying the results of research generated by that support.

The Committee, as well as representatives of State and local governments, has found the Intergovernmental Science program to be highly effective despite the fact that for 4 years the program's budget has been limited to only \$1 million per year. The Committee believes that with increased funding the program will be able to support more effectively coordinated research, development and technology applications for local and State governments. The Committee directs that the needs and priorities and structure of the expanded program it is authorizing be established with full participation of its users—the elected and administrative officials of local and State governments.

The Committee has approved \$12 million for Intergovernmental Science and Research Utilization and has placed a floor of \$10 million under the Intergovernmental Science Program. The total amount authorized is \$12 million, or \$9 million above the budget request of the Administration.

Institutional improvement for science

The budget request submitted by the Administration did not include funding for Institutional Improvement for Science.

This program has been in existence since 1961 and has been used effectively by colleges and universities in recognizing, developing, and supporting promising, scientific research activities. The Committee feels that the program, which has been cost-effective and productive, should be continued.

Most Federal research grants and contracts to colleges and universities are for specifically designated tasks. None of the funds under those grants and contracts can be used to support exploratory research or for younger investigators who are clearly capable, but not yet ready to enter into national competition. The Institutional Improvement for Science Program has made this kind of flexible, funding available, and colleges and universities have invested these funds in exploratory research which in the coming generation will pay high dividends.

The eroding financial position of academic institutions has as an important component a sharp decrease in the availability of discretionary funds in all areas. So the effect of general financial stringency is not only to reduce expenditures but also to very sharply curtail the ability to act quickly and flexibly to meet short falls and to take advantage of research opportunities.

The Committee has, therefore, authorized \$15,000,000 for Institutional Improvement for Science, and established this amount as a floor for the program. The Committee expects that grants will be awarded to institutions of promise and to those of demonstrated quality in the utilization of Federal science research awards. The Committee expects that the funds authorized will be used to provide research-initiation support for younger faculty members; to provide central science services and facilities of a broad interdepartmental nature; to continue support for research projects during periods when other sources of outside funding are scarce; and to back up commitments during periods of delay in state and federal appropriations proceedings.

Graduate student support

The budget request submitted by the Administration included \$14.8 million for Graduate Student Support.

The decline in Federal support for graduate students has been dramatic over the past half-dozen years. In 1968, students receiving federally supported fellowships and traineeships numbered 51,400; by 1974, that number had dropped drastically to an estimated 6,600. In 1967, there were 11,000 federally supported first-year graduate fellowships; by 1972, there were 2,000. In 1968, NSF obligated \$45 million for fellowships and traineeships; under the budget request for fiscal year 1976 only 500 new NSF awards are provided for.

This has taken place despite the fact that this Nation faces the prospect of a shortage of well-trained scientists and engineers in the years ahead. A 1973 survey of 60,000 of the 245,000 doctoral scientists and engineers in the United States by the National Research Council found that only 1.1 percent were not employed and were seeking employment, a figure corroborated by the National Academy of Sciences report *Doctoral Scientists and Engineers in the United States, 1973 Profile*, which found a 1.2 percent unemployment rate.

In planning for the decades ahead it is important for and in the interest of the nation to enable talented students to pursue careers in science and engineering. The NSF graduate fellowships program has encouraged these students to seek advanced training in graduate schools all over the country. Competition for these awards has been intense, and in 1974 the NSF provided fellowships to only 525 of 5,763 applicants, a ratio of 1 to 11. Many competent and promising candidates were, then, diverted from pursuing careers in science and technology which ultimately can be counted a national loss of significant proportions.

Therefore, the Committee has approved \$17 million for Graduate Student Support, an increase of \$2.2 million over the Administration's request. The Committee has placed a floor under this amount. It expects these funds to be used to increase the number of fellowships and traineeships, to increase the amount of the individual stipends to \$3,900 and to increase the amount of educational allowances to at least \$4,500 so that awards will conform more realistically to rising costs.

Science education improvement

The budget request submitted by the Administration included \$50 million for Science Education Improvement.

Despite the Committee's continuing efforts to increase funding for this program, it has once again been assigned a low priority in the budget request by the Administration. The 11 percent reduction proposed in the budget request for fiscal 1976 threatens the ability of the National Science Foundation to meet the need for continuing improvements in science education in this nation.

Of special importance under this program are activities to increase the participation of ethnic minorities and women in the pursuit of scientific and technical careers. The charts below illustrate the extent of that need.

REPRESENTATION OF MINORITY STUDENTS IN EACH GRADUATE FIELD, FALL, 1973¹

Field of study ²	Total enrollment in each graduate field		Percent minority in each field				
	Number	Percent	Black	Spanish-surnamed	American Indian	Asian American	Minority subtotal
Arts and humanities.....	53,920	100.0	2.8	1.5	0.3	0.9	5.5
Education.....	96,568	100.0	7.2	1.2	.4	.6	9.4
Engineering.....	31,273	100.0	1.2	.8	.1	3.3	5.4
Health professions.....	13,238	100.0	5.5	1.2	.6	2.0	9.3
Life sciences.....	27,641	100.0	1.5	.9	.2	1.9	4.5
Biology.....	(5,027)	100.0	(2.6)	(.7)	(.1)	(1.7)	(5.1)
Biochemistry.....	(1,084)	100.0	(1.2)	(.6)	(.3)	(3.2)	(5.3)
Microbiology.....	(1,801)	100.0	(1.8)	(.9)	(.3)	(3.2)	(6.2)
Physiology.....	(1,110)	100.0	(1.5)	(.9)	(.3)	(2.0)	(4.7)
Other.....	(15,504)	100.0	(1.2)	(.9)	(.2)	(1.6)	(3.9)
Mathematical sciences.....	12,446	100.0	2.6	.6	.2	2.1	5.4
Physical sciences.....	21,629	100.0	1.4	.7	.2	2.6	4.9
Chemistry.....	(8,040)	100.0	(1.6)	(.7)	(.2)	(3.2)	(5.7)
Physics.....	(5,559)	100.0	(1.2)	(.6)	(.2)	(3.0)	(5.0)
Other.....	(6,560)	100.0	(1.2)	(.7)	(.2)	(1.5)	(3.6)
Basic social sciences.....	35,583	100.0	4.1	1.2	.3	1.1	6.7
Economics.....	(5,766)	100.0	(1.9)	(.8)	(.3)	(1.6)	(4.6)
Psychology.....	(10,318)	100.0	(4.2)	(1.2)	(.3)	(.8)	(6.5)
Sociology.....	(4,566)	100.0	(5.8)	(2.0)	(.2)	(1.3)	(9.3)
Other basic social sciences.....	(12,969)	100.0	(4.6)	(1.8)	(.4)	(1.0)	(7.3)
All other fields.....	80,666	100.0	5.1	1.0	.3	1.2	7.6
Total, all fields.....	372,964	100.0	4.4	1.1	.3	1.4	7.2

¹ Based on data from the 154 Ph.D. granting institutions able to provide minority enrollment data within field of study.
² Figures for subfields (in parentheses) sum to less than their respective field totals because some institutions reported data for the total field category but not for subfields.

Source: "Enrollment of Minority Graduate Students at Ph.D. Granting Institutions" by Elaine H. El-Khawas and Joan L. Kinzer, American Council on Education, August 1974.

NUMBER AND PERCENT OF PH. D. DEGREES AWARDED BY FIELD AND SEX, FISCAL YEARS 1971-73

Field and fiscal year	Ph.D. degrees awarded				
	Total	Men		Women	
		Number	Percent	Number	Percent
All fields—Total:					
1971.....	31,772	27,187	85.6	4,585	14.4
1972.....	33,001	27,719	84.0	5,282	16.0
1973.....	33,727	27,645	82.0	6,082	18.0
Physical sciences:					
1971.....	4,494	4,250	94.6	244	5.4
1972.....	4,226	3,957	93.6	269	6.4
1973.....	4,016	3,759	93.6	257	6.4
Engineering:					
1971.....	3,495	3,479	99.5	16	.5
1972.....	3,475	3,454	99.4	21	.6
1973.....	3,338	3,293	98.7	45	1.3
Mathematics:					
1971.....	1,236	1,140	92.2	96	7.8
1972.....	1,281	1,185	92.5	96	7.5
1973.....	1,222	1,103	90.3	119	9.7
Life sciences:					
1971.....	5,051	4,337	85.9	714	14.1
1972.....	4,984	4,253	85.3	731	14.7
1973.....	5,068	4,197	82.8	871	17.2
Economics and statistics (includes econometrics):					
1971.....	951	892	93.8	59	6.2
1972.....	980	917	93.6	63	6.4
1973.....	1,000	937	93.7	63	6.3
Social sciences (other):					
1971.....	4,204	3,347	79.6	857	20.4
1972.....	4,610	3,624	78.6	986	21.4
1973.....	4,911	3,731	76.0	1,180	24.0
English (American and English language and literature):					
1971.....	1,243	860	69.2	383	30.8
1972.....	1,363	888	65.2	475	34.8
1973.....	1,412	895	63.4	517	36.6
Arts and humanities (other):					
1971.....	3,123	2,446	78.3	677	21.7
1972.....	3,338	2,542	76.2	796	23.8
1973.....	3,952	2,922	73.9	1,030	26.1

NUMBER AND PERCENT OF PH. D. DEGREES AWARDED BY FIELD AND SEX, FISCAL YEARS 1971-73—Continued

Field and fiscal year	Ph.D. degrees awarded				
	Total	Men		Women	
		Number	Percent	Number	Percent
Education:					
1971.....	6,403	5,061	79.0	1,342	21.0
1972.....	7,079	5,435	76.8	1,644	23.2
1973.....	7,248	5,464	75.4	1,784	24.6
Professional fields:					
1971.....	1,402	1,227	87.5	175	12.5
1972.....	1,506	1,322	87.8	184	12.2
1973.....	1,461	1,261	86.3	200	13.7
Other and unspecified:					
1971.....	170	148	87.1	22	12.9
1972.....	159	142	89.3	17	10.7
1973.....	99	83	83.8	16	16.2

Source: National Research Council, National Academy of Sciences.

Therefore the Committee has increased the authorization for the Ethnic Minorities and Women in Science Program from \$4.5 million of \$9.6 million and has established that amount as a floor under this authorization.

The Committee has also increased the authorization for elementary and secondary school programs from \$15.3 million to \$21.9 million and placed a floor for expenditures at that level under this authorization. This action has been taken because of the Committee's concern that the science knowledge of the nation's children is declining seriously. A recent nationwide study of science achievement among students all over America, conducted by the National Assessment of Education Progress, found a significant decline in science attainment at the pre-college level, which represents an overall loss of half a year of learning experience per pupil when compared to the achievement measured by a similar study in 1969-70.

Our scientific research and technological capabilities are critical for meeting today's and tomorrow's problems. The means by which we can sustain our future efforts are based on science education activities at all levels—from postdoctoral research fellow to encouragement of the curious child. Therefore, the Committee has approved \$70 million for this reduction activity, an increase of \$20 million over the budget request, and has placed a floor under this authorization.

Planning and policy studies

The budget request submitted by the Administration included \$2.7 million for Planning and Policy Studies.

The Committee has authorized an additional \$1.5 million for programs related to the ethical and human value implications of science and technology, to be added to the \$400,000 requested in the Administration's budget.

In today's society it is essential to identify and analyze at the earliest possible time the ethical and human value aspects of new developments in the physical and biological sciences and in technology. The NSF must expand its program in this area giving it the attention it requires.

For several years, the Foundation has supported research, education and public understanding projects dealing with the ethical and human value implications of science and technology. For fiscal year

1976, the Administration requested \$400,000 for this program. The Committee believes that its importance demands increased funding and has consequently approved an additional \$1.5 million, for a total of \$1.9 million. The Committee anticipates that with increased funding the program will expand its projects in the following areas:

(1) The impact of new developments in the physical and biological sciences and in technology on the values of society, including ethical dilemmas generated by the scientific and technological enterprise.

(2) The impact of societal values on the development of the physical and biological sciences and technology, including ethical and value issues in the setting of national and international research priorities.

(3) The value issues which arise within the physical and biological sciences and in technology, including ethical problems encountered by scientists and engineers in their professional capacities.

In reviewing the needs which exist and in the selection of projects for support, the Committee urges the National Science Foundation to call upon individuals and groups with expertise in the ethical as well as scientific components of research. Through the support of projects which will assist in the clarification of issues, definition of terms, clarification (and, if possible, resolution) of disagreements relevant to ethical and value issues, and by placing these issues in their full social, historical and scientific contexts, the Committee hopes that NSF will be able to bring these problems to the attention of both the scientific community and the general public and thereby contribute to their solution.

The Committee has approved a total of \$4.2 million for Planning and Policy Studies, an increase of \$1.5 million over the Administration's budget request.

Science for citizens program

The Committee has authorized a new program, Science for Citizens. The Committee intends that the program will be conducted under National and Special Research Programs and that it will include the ongoing Public Understanding of Science Program authorized under Science Education Improvement.

The Committee recognizes that the program must be carried out in a manner which does not infringe on the independence of the grantees, a prerequisite for public interest science, and that the funds must be used to support high quality work. Therefore, a limited pilot program is authorized which is designed to:

(1) improve public understanding of public policy issues involving science and technology;

(2) facilitate the participation of experienced scientists and engineers in public activities aimed at the resolution of public policy issues having significant scientific and technical aspects;

(3) facilitate the participation of undergraduate and graduate students in the scientific and technical components of community and citizen group activities aimed at the resolution of public policy issues;

(4) enable nonprofit citizens public interest groups to acquire the technical expertise they need to deal with the scientific and technical aspects of public policy issues; and

(5) provide grants and contracts to academic and other nonprofit organizations to conduct research designed to improve the effectiveness of the programs outlined above.

The Committee expects that funds authorized for Science Education Improvement and for National and Special Research Programs will be used to initiate this new program.

Alan T. Waterman Award for research

The Committee has authorized the National Science Foundation to establish the Alan T. Waterman Award for research for advanced study in the mathematical, physical, medical, biological, engineering, social and other sciences. The purpose of this award is to honor Dr. Alan T. Waterman, the first Director of the National Science Foundation; by annually providing a small group of the most outstanding young scientists and engineers with recognition of their achievements.

The award, which will consist of a suitable medal and a grant not to exceed \$50,000 per year for up to 3 years, will permit promising young scientists to further their research and study at an institution of their choice. NSF will be permitted to make up to three awards in any one year. The Committee hopes that by encouraging the work of younger scientists the Nation will benefit from increased scientific capability.

Candidates for the Alan T. Waterman Award can be nominated from any source, including individuals and public and private organizations. Selection of the recipients of the Alan T. Waterman Award will be made by a multi-disciplinary committee jointly appointed by the Director of the NSF and the Chairman of the National Science Board. The selection committee should be comprised of members broadly representative of the various sciences and the society as a whole.

The actual criteria for the selection of awardees will be developed by the National Science Board. However, the Committee believes that among the elements to be considered should be the requirement that have already made significant contributions to the sciences or engineering through research.

Public participation

The Committee has directed the National Science Foundation to prepare a comprehensive plan to facilitate the participation of members of the public in the formulation, development and conduct of the Foundation's programs, policies and priorities. National Science Foundation activities have become of increasing interest to citizens not previously involved in or immediately affected by scientific research policies and priorities. A commitment is now required to involve representatives of the general public in these activities. The Committee expects that the recommendations included in the plan it has requested will lead to a substantial improvement in public participation in the activities of the National Science Foundation, either through administrative action by the Foundation or, if indicated, through legislation.

V. COMMITTEE VIEWS

Curriculum development and implementation

Notwithstanding current controversies, this Committee does not seek to pass on the merits of any specific NSF effort to develop or implement science curricula at the elementary level. It does, however, very strongly disapprove of any attempt by NSF to subsidize the marketing or promotion of such curricula. The Committee wishes to make clear that it does not intend that any NSF developed curricula be rendered a competitive advantage over curricula developed by the private sector. NSF may properly disseminate information with respect to curricula and their availability to local school districts, but it should not attempt to in any way influence local districts as to the choice of such curricula.

Peer review

It is the firmly held conviction of the Committee that the peer review system is vital to the success of the National Science Foundation's mission—the support of research which is of the highest quality and which addressed priority national research needs.

Each year the Foundation receives thousands of research proposals. In the consideration of the merits of those proposals it must call for the views of qualified and independent members of the scientific community with expertise in the specific area of research for which funding has been requested.

The integrity of this process, which is the most effective means we know of to evaluate research proposals in a wide variety of fields, is absolutely essential to furthering this nation's advancement in science; it is vital in ensuring that the federal government receives a full return on the money it invests in scientific research; and it is vital to winning the support and the trust of the research community and the public.

The NSF must spare no effort in ensuring that the pool of proposal reviewers it calls on is broadly representative of the scientific community. The Committee emphasizes that the system must be an open one, which must encourage the continuing entry of new and diverse reviewers. The reviews of the proposals themselves must be thoroughly, thoughtfully, and carefully prepared, address all aspects of the proposed research, and must be made available to the proposer. The comments and recommendations of the reviewers must be fully considered, evaluated and presented in the decision making process involved in each grant award.

The Committee urges the Foundation to address these concerns. It is confident that the continued and strengthened application of these criteria will lead to an even more effective contribution by science and scientists to the national well being.

The Committee also directs the Foundation to inform it on a timely basis of steps taken or planned to strengthen the peer review system.

Representation of minorities and women

The Committee has observed that minorities and women are not adequately represented in management and policymaking positions in the National Science Foundation. It recognizes that the pool of eligible individuals is not large, but believes that a comprehensive recruitment effort can lead to a significant improvement in the present

situation. Such an effort has done a great deal to improve the participation of minorities and women in positions below the policymaking level.

The Committee urges the Foundation to begin an intensive search for qualified women, blacks, Chicanos, American Indians and members of other minorities to fill executive level positions. It recommends that groups which have been active in seeking greater recognition of the scientific and technical capabilities of minorities and women be called up to assist in this effort. It also calls on the Foundation to improve the representation of women and minorities on advisory committees, review panels and in all other areas where the scientific community provides assistance to the Foundation.

It is the Committee's view that greater participation by minorities and women in management and policy positions in the National Science Foundation will contribute significantly to the further inclusion and recognition of their talents in all aspects of science, and that as a result the Nation will benefit substantially.

VI. SECTION-BY-SECTION ANALYSIS

Section 1.—This section authorizes an appropriation for the National Science Foundation in the amount of \$822,600,000 for the fiscal year ending June 30, 1976. The amount authorized to be appropriated is distributed in specific amounts to 13 program categories.

Section 2.—This section stipulates that minima or floors shall be placed under the amount authorized to be appropriated in certain categories of section 1.

Subsection (1) provides that not less than \$15,000,000 authorized to be appropriated for the "Institutional Improvement for Science" category (8) of section 1 shall be available for that program;

Subsection (2) provides that not less than \$70,000,000 authorized to be appropriated for the "Science Education Improvement" category (10) of section 1 shall be available for that program;

Subsection (3) provides that of the amount authorized to be appropriated for intergovernmental Science and Research Utilization in category (7) of section 1, not less than \$10,000,000 shall be available for the "Intergovernmental Science Programs";

Subsection (4) provides that not less than \$7,000,000 authorized to be appropriated for the "Science Information Activities" category (4) of section 1 shall be available for that program;

Subsection (5) provides that of the amount authorized to be appropriated for Science Education Improvement in category (10) of section 1, not less than \$9,600,000 shall be available for the "Ethnic Minorities and Women in Science Program";

Subsection (6) provides that of the amount authorized to be appropriated for Science Education Improvement in category (10) of section 1, not less than \$21,900,000 shall be available for "Elementary and Secondary School Programs";

Subsection (7) provides that of the amount authorized to be appropriated for Research Applied to National Needs in category (6) of section 1, not less than \$25,000,000 shall be available for environmental research, including \$5,500,000 for earthquake engineering;

Subsection (8) provides that of the amount authorized to be appropriated for Planning and Policy Studies in category (11) of section 1, not less than \$1,500,000 shall be available for programs related to the ethical and human value implications of science and technology; and

Subsection (9) provides that of the amount authorized to be appropriated for Research Applied to National Needs in category (6) of section 1, not less than ten percent of such amount shall be expended to small business concerns.

Section 3.—This section authorizes and directs the National Science Foundation to establish and conduct a "Science for Citizens Program". This program is intended to improve public understanding of, and expertise in, science and technology policy issues affecting the public by facilitating the participation of the public, including in particular experienced scientists and engineers, undergraduate and graduate students, and nonprofit public citizen interest groups, in various relevant activities aimed at the resolution of public policy issues. To improve the effectiveness of the program and to accomplish its objectives, as outlined in paragraphs (1) through (4) of this section, the Foundation may provide grants and contracts to academic and other nonprofit organizations for the conduct of applied research.

Section 4.—This section authorizes the National Science Foundation to establish the "Alan T. Waterman Award" for research or advanced study in the various sciences. This Award is named in honor of the first Director of the National Science Foundation and authorizes the award of a suitable medal and a grant not to exceed \$50,000 per year for no more than 3 years to support a research or study by its recipient. The purpose of the award is to recognize and encourage the work of younger scientists whose capabilities and accomplishments to date show exceptional promise of significant future achievement. No more than three Awards may be made in any one fiscal year. It is intended that such grants shall be made to the institution of the recipient's choice to support further research or study by the recipient.

Section 5.—This section directs the Director of the National Science Foundation to prepare a comprehensive plan to facilitate the participation of the public in the formation, development, and conduct of the National Science Foundation's programs, policies and priorities. The resulting recommendations, plans and other findings are required to be submitted to the House Committee on Science and Technology and the Senate Committee on Labor and Public Welfare within 120 days following the effective date of this Act.

Section 6.—This section authorizes, in addition to the amount authorized to be appropriated in section 1, an appropriation of up to \$4,000,000 for expenses of the National Science Foundation outside the United States to be financed from foreign currencies which the Treasury Department determines to be in excess to the normal requirements of the United States.

Section 7.—This section provides \$5,000 for use by the Director of the National Science Foundation at his discretion. This money may be used for official consultation, representation and other extraordinary expenses.

Section 8.—This section provides that appropriations made pursuant to sections 1 and 4 of the Act shall remain available for obligation and expenditure for the period of time specified in the appropriations act.

Section 9.—This section prohibits the Foundation from transferring funds to or from a particular category in section 1 if the amount transferred exceeds ten percent of the total funds in that particular category, unless the appropriate House and Senate Committees are notified in writing and the Director waits 30 legislative days before taking final action, or these committees notify the Director of the National Science Foundation in writing that they have no objection to such transfer.

Section 10.—This section requires that the Director of the Foundation keep the House Science and Technology Committee and the Senate Labor and Public Welfare Committee fully and currently informed on all activities of the Foundation.

Section 11.—This section cites the title of the Act: "National Science Foundation Authorization Act, 1976."

VII. COST ESTIMATES PURSUANT TO SECTION 252(b) OF THE LEGISLATIVE REORGANIZATION ACT OF 1970

S. 1539, as amended, authorizes appropriations to the National Science Foundation for fiscal year 1975 in the amount of \$822.6 million, including \$4 million in foreign currencies which the Treasury Department determines to be excess to the normal requirement of the United States.

VIII. VOTE IN COMMITTEE

Pursuant to section 133(b) of the Legislative Reorganization Act of 1949, as amended, the following is a tabulation of votes in Committee: Motion to favorably report the bill to the Senate carried unanimously.

○

Calendar No. 107

94TH CONGRESS }
1st Session

SENATE

{ REPORT
No. 94-112

NATIONAL SCIENCE FOUNDATION AUTHORIZATION ACT, 1976

MAY 9 (legislative day, APRIL 21), 1975.—Ordered to be printed

Filed under authority of the order of the Senate of May 8 (legislative day,
April 21), 1975

Mr. KENNEDY, from the Committee on Labor and Public Welfare,
submitted the following

REPORT

[To accompany H.R. 4723]

The Committee on Labor and Public Welfare, to which was referred the bill (H.R. 4723) authorizing appropriations to the National Science Foundation for fiscal year 1976, having considered the same, reports thereon without recommendation.



NATIONAL SCIENCE FOUNDATION
AUTHORIZATION ACT, 1976

JULY 29, 1975.—Ordered to be printed

MR. KENNEDY, from the committee of conference,
submitted the following

CONFERENCE REPORT

[To accompany H.R. 4723]

The committee of conference on the disagreeing votes of the two Houses on the amendment of the Senate to the bill (H.R. 4723) National Science Foundation, Authorization Act, 1976, having met, after full and free conference, have agreed to recommend and do recommend to their respective Houses as follows:

That the House recede from its disagreement to the amendment of the Senate and agree to the same with an amendment as follows:

In lieu of the matter proposed to be inserted by the Senate amendment insert the following:

That there is hereby authorized to be appropriated to the National Science Foundation for the fiscal year ending June 30, 1976, for the following categories:

- (1) *Scientific Research Project Support, \$377,600,000.*
- (2) *National and Special Research Programs, \$109,800,000.*
- (3) *National Research Centers, \$60,200,000.*
- (4) *Research Applied to National Needs, \$70,500,000.*
- (5) *Science Education Innovation, \$39,800,000.*
- (6) *Science Education Support, \$35,300,000.*
- (7) *Graduate Student Support, \$16,400,000.*
- (8) *Science Information Activities, \$6,600,000.*
- (9) *International Cooperative Scientific Activities, \$8,000,000.*
- (10) *Intergovernmental Science and R. & D. Incentives Program, \$10,000,000.*
- (11) *Science Assessment, Policy, and Advisory Activities, \$11,100,000.*
- (12) *Program Development and Management, \$41,700,000.*

SEC. 2. (a) Notwithstanding any other provision of this or any other Act—

(1) of the total amount authorized under section 1, not less than \$9,800,000 shall be available for the purpose of "Science Education Innovation";

(2) of the total amount authorized under section 1, not less than \$5,300,000 shall be available for the purpose of "Science Education Support";

(3) of the total amount authorized under section 1, not less than \$16,400,000 shall be available for the purpose of "Graduate Student Support";

(4) of the total amount authorized under section 1, category (6), not less than \$3,000,000 shall be available for "Undergraduate Research Participation";

(5) of the total amount authorized under section 1, category (6), not less than \$2,500,000 shall be available for "Secondary School Student Science Projects";

(6) of the total amount authorized under section 1, category (6), not less than \$2,000,000 shall be available for "Science Faculty Fellowships";

(7) of the total amount authorized under section 1, not less than \$6,600,000 shall be available for "Science Information Activities";

(8) of the total amount authorized under section 1, category (4), not less than \$25,000,000 shall be available for environmental research, including \$5,500,000 for earthquake engineering;

(9) of the total amount authorized under section 1, category (4), not less than \$23,000,000 shall be available for "Applied Social Research" and for "Policy-Sciences Research" directed toward increasing the cost-effectiveness of policies and programs dealing with urban and human service problems at the Federal, State, and local government levels. Such fund shall not be available for use with respect to any program or activity if such use would result in a substantial duplication of any program or activity which is receiving other Federal financial assistance. Such funds may be used to identify, analyze, and contribute knowledge to improve productivity in the public sector; identify, analyze, and evaluate more effective, efficient, and equitable ways to deliver human services; and develop the data base and analytical techniques required for improving applied research on municipal systems and human service delivery;

(10) of the total amount authorized under section 1, category (4), not less than \$1,000,000 shall be available for the purpose of "Fire Research." The transfer of this program to the Fire Research Center of the National Bureau of Standards (15 U.S.C. 278 f.) during the fiscal year ending June 30, 1976, is authorized;

(11) of the total amount authorized under section 1, category (4), not less than 7.5 per centum of such amount shall be expended to small business concerns;

(12) of the total amount authorized under section 1, category (6), not less than \$7,000,000 shall be available for "Ethnic Minorities and Women in Science Program"; and not less than \$1,500,000 thereof shall be available to develop and test methods of increasing the flow of women into careers in science;

(13) of the total amount authorized under section 1, category (10), not less than \$8,000,000 shall be available for the "Intergovernmental Science Program";

(14) of the total amount authorized under section 1, category (11), not less than \$1,500,000 shall be available for programs related to the ethical and human value implications of science and technology; and

(15) the amount of \$5,500,000 for "Institutional Improvement for Science" which was authorized and appropriated to the National Science Foundation for the fiscal year ending June 30, 1975, and which remains unobligated as of the close of the fiscal year ending June 30, 1975, shall be merged with and added to the amount authorized under section 1, category (6) ("Science Education Support"), of this Act.

(b) After the date of enactment of this Act the Director of the National Science Foundation, shall require, as a condition of any award made by the National Science Foundation for the purpose of precollege science curriculum development activities, that the awardee, and any subcontractors involved in the distribution, marketing, or selling of such science curricula, shall include in any testing agreement, sales contract, or other comparable legal instrument a provision requiring that all instructional materials, including teacher's manuals, films, tapes, or other supplementary instructional materials developed or provided under such award, subcontract, or other legal instrument, will be made available within the school district using such materials for inspection by parents or guardians of children engaged in educational programs or projects of that school district. In addition, the Director of the National Science Foundation shall take such action as may be necessary and feasible to modify awards made for the purpose of precollege science curriculum development and implementation activities on or before the date of enactment of this Act to include such a provision in all possible cases.

(c) The National Science Foundation is authorized and directed to conduct a Research Initiation and Support program, referred to hereinafter as RIAS. RIAS shall have the purpose of strengthening programs of training and research for young scientists at the graduate and post-graduate levels at educational institutions. Awards under this program may include support for exploratory research by such young scientists, the acquisition of instruments, equipment, and facilities for research and training, and other programs and activities aimed at meeting departmental, interdepartmental, or institutionwide training and research needs, or a combination thereof. Awards under RIAS shall be made on a competitive basis and may cover periods not to exceed four years. Notwithstanding any provisions of this or any other Act, of the total amount authorized under section 1, category (6), not less than \$5,000,000 shall be available for RIAS.

(d) The National Science Foundation is authorized and directed to conduct a Comprehensive Assistance to Undergraduate Science Education program, referred to hereinafter as CAUSE. CAUSE shall have the purpose of strengthening the science education capabilities of predominantly undergraduate educational institutions and departments or groups of departments thereof through awards to four-year colleges, to two-year colleges, to the undergraduate component of advanced degree institutions, and to groups of such institutions. Notwithstanding any provisions of this or any

other Act, of the total amount authorized under section 1, category (6), not less than \$15,000,000 shall be available for CAUSE and not less than \$3,500,000 thereof shall be awarded to two-year institutions. Awards within each category of CAUSE shall be made on a competitive basis.

(e) As used in this Act, "Science Education Innovation" means projects aimed at the development of new approaches to the teaching of science to students, teachers, and professionals, including but not limited to new curricula, new technologies, new methods, and retraining or other efforts to make the existing scientific manpower pool better able to fulfill the Nation's manpower needs. As used in this Act, "Science Education Support" means projects aimed at building a capability to teach science, including but not limited to awards for equipment, conferences, and institutional development.

SEC. 3. The Director of the National Science Foundation is authorized and directed to prepare a comprehensive plan for the establishment and conduct of a "Science for Citizens Program". Such program shall be designed—

(1) to improve public understanding of public policy issues involving science and technology;

(2) to facilitate the participation of experienced scientists and engineers as well as graduate and undergraduate students in public activities, including community and citizen group activities, aimed at the resolution of public policy issues having significant scientific and technical aspects;

(3) to enable nonprofit citizens public interest groups to acquire necessary technical expertise to assist them in dealing with the scientific and technical aspects of public policy issues; and

(4) to provide grants and contracts to academic and other nonprofit organizations for the conduct of applied research designed to improve the effectiveness of the programs conducted under paragraphs (1), (2), and (3) of this section.

The comprehensive plan provided for in this section shall be submitted to the Committee on Science and Technology of the House of Representatives and the Committee on Labor and Public Welfare of the Senate within six months from the date of enactment of this Act.

SEC. 4. The Director of the National Science Foundation is authorized and directed to prepare a comprehensive plan to facilitate the participation of members of the public in the formulation, development, and conduct of the National Science Foundation's programs, policies, and priorities and to submit the resulting recommendations, plans, and other findings to the Committee on Science and Technology of the House of Representatives and the Committee on Labor and Public Welfare of the Senate within one hundred and twenty days from the date of enactment of this Act.

SEC. 5. In the conduct of the energy research and development activities under the "Research Applied to National Needs" category, the National Science Foundation shall coordinate all new project awards with the Administrator of the Energy Research and Development Administration or his designee.

SEC. 6. (a) The National Science Foundation is authorized to establish the Alan T. Waterman Award for research or advanced study in the mathematical, physical, medical, biological, engineering, social, or other sciences. The award authorized by this section shall consist of a suitable medal and a

grant not to exceed \$50,000 per year for a period not to exceed three years to support further research or study by the recipient.

(b) Awards under this section shall be made to recognize and encourage the work of younger scientists whose capabilities and accomplishments show exceptional promise of significant future achievement.

(c) No more than one award shall be made under this section in any one fiscal year.

SEC. 7. Appropriations made pursuant to this Act may be used, but not to exceed \$5,000, for official consultation, representation, or other extraordinary expenses upon the approval or authority of the Director of the National Science Foundation, and his determination shall be final and conclusive upon the accounting officers of the Government.

SEC. 8. In addition to such sums as are authorized by section 1, not to exceed \$4,000,000 is authorized to be appropriated for the fiscal year ending June 30, 1976, for expenses of the National Science Foundation incurred outside the United States to be paid for in foreign currencies which the Treasury Department determines to be excess to the normal requirements of the United States.

SEC. 9. Appropriations made pursuant to authority provided in sections 1 and 8 shall remain available for obligation, for expenditure, or for obligation and expenditure, for such period or periods as may be specified in the Acts making such appropriations.

SEC. 10. No funds may be transferred from any particular category listed in section 1 to any other category or categories listed in such section if the total of the funds so transferred from that particular category would exceed 10 per centum thereof, and no funds may be transferred to any particular category listed in section 1 from any other category or categories listed in such section if the total of the funds so transferred to that particular category would exceed 10 per centum thereof, unless—

(A) a period of thirty legislative days has passed after the Director of the National Science Foundation or his designee has transmitted to the Speaker of the House of Representatives and to the President of the Senate and to the Committee on Science and Technology of the House of Representatives and to the Committee on Labor and Public Welfare of the Senate a written report containing a full and complete statement concerning the nature of the transfer and the reason therefor, or

(B) each such committee before the expiration of such period has transmitted to the Director written notice to the effect that such committee has no objection to the proposed action.

SEC. 11. Notwithstanding any other provision of this or any other Act, the Director of the National Science Foundation shall keep the Committee on Science and Technology of the House of Representatives and the Committee on Labor and Public Welfare of the Senate fully and currently informed with respect to all of the activities of the National Science Foundation.

Sec. 12. This Act may be cited as the "National Science Foundation Authorization Act, 1976".

And the Senate agree to the same.

EDWARD M. KENNEDY,
CLAIBORNE PELL,
THOMAS EAGLETON,
ALAN CRANSTON,
WALTER F. MONDALE,
PAUL LAXALT,
ROBERT STAFFORD,
DICK SCHWEIKER,

Managers on the Part of the Senate.

OLIN TEAGUE,
J. W. SYMINGTON,
DON FUQUA,
WALTER FLOWERS,
MIKE McCORMACK,
C. A. MOSHER,
MARVIN L. ESCH,

Managers on the Part of the House.

JOINT EXPLANATORY STATEMENT OF THE COMMITTEE OF CONFERENCE

The managers on the part of the House and the Senate at the conference on the disagreeing votes of the two Houses on the amendment of the Senate to the bill (H.R. 4723) National Science Foundation Authorization Act, 1976, and for other purposes, submit the following joint statement to the House and the Senate in explanation of the effect of the action agreed upon by the managers and recommended in the accompanying conference report:

The amendment of the Senate struck out all after the enacting clause in the House bill and substituted new language. The committee of conference agreed to accept the Senate amendment with certain amendments and stipulations proposed by the conferees.

The National Science Foundation requested authorization in the amount of \$751,400,000 for fiscal year 1976, plus \$4,000,000 in excess foreign currencies. The House authorized the amounts requested. The respective Senate figures were \$322,600,000 and \$4,000,000 in excess foreign currencies.

The committee of conference recommends \$787,000,000, plus \$4,000,000 in excess foreign currencies. This figure is \$35,600,000 more than authorized by the House and \$35,600,000 less than authorized by the Senate for fiscal year 1976.

The specific actions taken by the conference are as follows:

SECTION 1—FUNDS

1. For Scientific Research Project Support, the budget request of the National Science Foundation was \$380,000,000. The House authorized \$366,300,000 and the Senate authorized \$389,000,000. The conferees agreed on \$377,600,000.

2. For National and Special Research Program the Foundation requested \$115,500,000. The House authorized \$101,500,000 and the Senate authorized \$113,500,000. The conferees agreed on \$109,800,000, which includes \$2,800,000 for the construction of coastal research vessels.

3. For National Research Centers, the House, the Senate and the conferees approved the Foundation request for \$60,200,000.

4. For Research Applied to National Needs the Foundation requested \$79,500,000. The House authorized \$60,000,000 and the Senate authorized \$81,000,000. The conferees agreed on \$70,500,000.

5. & 6. For Science Education Improvement the Foundation requested \$50,000,000. The House authorized \$39,800,000 for Science Education Innovation and \$34,700,000 for Science Education Support; the Senate authorized \$70,000,000 for Science Education Improvement and \$15,000,000 for Institutional Support. The conferees agreed on \$39,800,000 for Science Education Innovation and \$35,300,000 for

Science Education Support. No funds are recommended by the conferees for Institutional Support.

7. For Graduate Student Support the Foundation requested \$14,800,000. The House authorized \$15,800,000 and the Senate authorized \$17,000,000. The conferees agreed on \$16,400,000.

8. For Science Information Activities the Foundation requested \$6,000,000. The House authorized \$6,200,000 and the Senate authorized \$7,000,000. The conferees agreed on \$6,600,000.

9. For International Cooperative Activities the House, the Senate and the conferees approved the Foundation request for \$8,000,000.

10. For Intergovernmental Science and R&D Incentives the Foundation requested \$3,000,000. The House authorized \$8,000,000 and the Senate authorized \$12,000,000. The conferees agreed on \$10,000,000.

11. For National R&D Assessment, Planning and Policy Studies, Science Advisory Activities, and Ethical and Human Value Implications of Science and Technology the Foundation requested \$9,600,000. The House approved \$9,200,000 for Science Assessment, Policy and Advisory Activities and \$400,000 for Ethical and Human Value Implications of Science and Technology. The Senate approved the budget request and an additional \$1,500,000 for Ethical and Human Value Implications of Science and Technology. The conferees agreed on \$11,100,000 for Science Assessment, Policy and Advisory Activities, including the additional \$1,500,000 for Ethical and Human Value Implications of Science and Technology.

12. For Program Development and Management, the House, the Senate, and the conferees approved the Foundation request for \$41,700,000.

SECTION 2—FUNDING LEVELS AND PROGRAMS

Section 2(a)—Obligation Minima

The bill as passed by the House included minimum obligation levels for the following program activities:

- (1) Science Education Innovation, \$39,800,000.
- (2) Science Education Support, \$34,700,000, which included five sub-floor limitations. The latter were \$3,000,000 for Undergraduate Research Participation, \$2,500,000 for Secondary School Student Science Projects, and \$2,000,000 for Science Faculty Fellowships, and \$18,000,000 for CAUSE (including \$3,500,000 for two-year institutions).
- (3) Graduate Student Support, \$15,800,000.
- (4) Intergovernmental Science Program, \$6,000,000.
- (5) Research Applied to National Needs, \$23,000,000 for Applied Social Research and for Policy Sciences Research; and \$1,000,000 for Fire Research.

The Senate included minimum obligation levels for the following:

- (1) Institutional Improvement for Science, \$15,000,000.
- (2) Science Education Improvement, \$70,000,000, which included two sub-floor limitations. The latter were \$9,600,000 for Ethnic Minorities and Women in Science and \$21,900,000 for Elementary and Secondary School Programs.
- (3) Intergovernmental Science Program, \$10,000,000.

(4) Science Information Activities, \$7,000,000.

(5) Research Applied to National Needs, \$25,000,000 for environmental research, including \$5,500,000 for earthquake engineering.

(6) Ethical and Human Value Implications of Science and Technology, \$1,500,000.

(7) Research Applied to National Needs—not less than 10% of such funds shall be expended to small business concerns.

The Conferees agreed to the following minimum obligations levels:

(1) Science Education Innovation, \$39,800,000 floor.

(2) Science Education Support—\$35,300,000 floor with subfloors including \$3,000,000 floor for Undergraduate Research Participation, \$2,500,000 floor for Secondary School Student Science Projects, \$2,000,000 Science Faculty Fellowships, \$15,000,000 floor for CAUSE (including \$3,500,000 floor for two-year institutions), \$5,000,000 for RIAs and \$7,000,000 floor for Ethnic Minorities and Women in Science (including \$1,500,000 to develop and test methods of increasing the flow of women into science careers). The Conferees expect that the increase in the Ethnic Minorities and Women in Science program, together with carryover funds from fiscal year 1975, will enable the Foundation to increase funding of programs for ethnic minorities and to conduct more effective programs to encourage women to enter careers in science and technology.

(3) Graduate Student Support, \$16,400,000 floor.

(4) Science Information Activities, \$6,600,000 floor.

(5) Research Applied to National Needs—\$25,000,000 floor for environmental research including \$5,500,000 floor for earthquake engineering; \$23,000,000 floor for Applied Social Research and for Policy Sciences Research, with the proviso that such research should not substantially duplicate other federally funded research; and not less than 7.5% of available funds to be expended to small business concerns. The Conferees also agreed that the Foundation should make an effort to expend up to 10% to small business concerns and indicated that for fiscal year 1977 a set-aside at that level should be considered; and \$1,000,000 floor for fire research with a proviso authorizing the transfer of the NSF/RANN Fire Research program to the Fire Research Center of the National Bureau of Standards. The Fire Research Center was established under the Federal Fire Prevention and Control Act of 1974 as a focus for fire related research separate from the National Fire Prevention and Control Administration, and the conferees agreed that the NSF/RANN fire research program should be transferred to this Center.

(6) Intergovernmental Science Program, \$8,000,000 floor.

(7) Ethical and Human Value Implications of Science and Technology, \$1,500,000.

Section 2(b) Instructional Materials

The House bill included a section providing that instructional science curriculum materials developed under grants from the NSF must be made available for inspection in local school districts to the parents of children using such materials. The Senate bill included no comparable provision.

The Committee of Conference concluded that this provision confirms the principle parental access, at the local level to teaching materials used by their children. To insure that the provision will be most useful in practice the section was rewritten in a manner that will insure the incorporation of an appropriate clause in all future awards. For awards made in the past the NSF Director is requested to include the appropriate clause to the maximum possible extent.

Section 2(c) Graduate and Postgraduate Training and Research

The conferees agreed that graduate and postgraduate training and research programs at educational institutions require continued assistance from the Foundation. Concern was expressed, however, that in the past such assistance, under the Institutional Improvement for Science program was based on formula grants rather than on a demonstration of need, and that institutions were not required to submit, prior to the award of a grant, a statement of the purposes for which the grant would be used.

The program of Research Initiation And Support (RIAS) is designed to meet those concerns and to make available to educational institutions funds to support exploratory research by young scientists, and for the acquisition of instruments, equipment and facilities for research and training. Funding under RIAS will also be available for programs and activities to meet departmental, inter-departmental, and institution-wide training and research needs, or for a combination thereof.

A minimum obligation level of \$5,000,000 for RIAS is included in the bill, and the conferees expect that carryover funds available for Science Education Support will be used to fund this program, and that grants will be awarded on a competitive basis.

Section 2(d) Undergraduate Science Program (CAUSE)

The House bill includes a section which would establish a new Comprehensive Assistance to Undergraduate Education (CAUSE) program. The Senate bill included no comparable provision.

The Committee of Conference reviewed the purpose of this program and its potential role within the over-all NSF science education program. CAUSE was proposed in an effort to strengthen undergraduate science education and is intended to incorporate the best features of the highly successful College Science Improvement (COSIP) program conducted by the NSF. Both on its merit and as part of the compromise on the grant review provision the Committee of Conference concluded that CAUSE should be included in the proposed bill. However, the minimum obligation level was reduced from \$18.0 million to \$15.0 million. The separate minimum obligation level of \$3.5 million for two-year institutions was retained.

Section 2(e) Definitions

The House bill included a section defining the scope of the two new line items "Science Education Innovation" and "Science Education Support". The Senate bill did not include a corresponding provision.

The Committee of Conference, having accepted the division of the former "Science Education Improvement" line item into these two new line items, recommends the incorporation of these two definitions into the bill.

SECTION 3—SCIENCE FOR CITIZENS PROGRAM PLAN

The Senate bill includes a section which would establish a Science for Citizens Program. The House bill did not include a similar provision.

The conferees agreed to include a section directing the Foundation to prepare a comprehensive plan for the establishment and conduct of a Science for Citizens Program. This plan is to be prepared with full public participation including: concerned citizens groups; educational institutions; scientific societies; individuals and groups with expertise, experience or interest in improving the access of citizens to scientific and technical information; and individuals and groups with expertise, experience or interest in improving the participation of scientists in public policy debates.

The conferees expect that a number of public seminars and workshops will be held during the development of the comprehensive plan, and that announcements of these sessions will be widely publicized, including notice in the Federal Register at least 30 days prior to such sessions.

The conferees expect that the plan will be completed within six months and that it will provide the basis for the inclusion of a Science for Citizens Program in the Foundation's fiscal year 1976 budget.

SECTION 4—PUBLIC PARTICIPATION PLAN

The Senate bill included a section directing the Foundation to prepare a plan to facilitate the participation of members of the public in the formulation, development and conduct of the Foundation's programs, policies and priorities. The House bill did not include a similar provision.

The conferees agreed to adopt the Senate provision specifying that the plan will result in improved understanding by the public of the Foundation's science education and research programs, and in improved access by the public to information concerning those programs. The provision also stipulates that the plan will result in improved public participation in the formulation of the Foundation's programs, policies and priorities.

SECTION 5—COORDINATION OF ENERGY RESEARCH

The House bill includes a section providing that energy research and development activities conducted by the NSF under the RANN program shall be coordinated with the Energy Research and Development Administration. The Senate bill includes no comparable provision.

The Committee of Conference recommends the inclusion of this provision in the bill.

SECTION 6—ALAN T. WATERMAN AWARD

The Senate bill included a section providing for the award of the Alan T. Waterman Award for research or advanced study in the sciences. The House bill did not include a corresponding provision.

The Committee of Conference agreed to include this section, which is intended to mark the 25th anniversary of the National Science Foundation. The number of awards to be made annually was reduced from three to one.

SECTION 7—REPRESENTATION LIMITATION

Section 7 is identical to section 3 of the House bill and section 7 of the Senate bill.

SECTION 8—FOREIGN CURRENCIES LIMITATION

Section 8 is identical to section 4 of the House bill and section 6 of the Senate bill.

SECTION 9—APPROPRIATIONS AVAILABILITY

Section 9 is identical to section 5 of the House bill and section 8 of the Senate bill.

SECTION 10—LIMIT ON TRANSFER OF FUNDS

Section 10 is identical to section 6 of the House bill and section 9 of the Senate bill.

SECTION 11—FULLY AND CURRENTLY INFORMED CLAUSE

Section 11 is identical to section 7 of the House bill and section 10 of the Senate bill.

SECTION 12—TITLE OF ACT

Section 12 is identical to section 8 of the House bill and section 11 of the Senate bill.

CONGRESSIONAL REVIEW OF RESEARCH PROPOSALS

The House bill includes a section providing for Congressional review and approval of individual research awards. The Senate bill includes no comparable provision. Under this provision in the House bill the NSF would submit every 30 days to the committees of jurisdiction in the House and in the Senate a list of grants which the agency proposes to make. For each such proposed grant all facts and considerations bearing on the agency's decision to recommend the award would be submitted. Either House of the Congress could disapprove one or more grants on this list by simple resolution. Upon the expiration of 30 days the NSF would be free to award the remaining grants on the list.

The Conferees on the part of the House presented the reasons advanced for the inclusion of this section in the House bill. The chief reason was that in the past the NSF had awarded grants, some of which did not appear to promise a significant return in scientific knowledge when measured against the cost to the taxpayer, and some carrying grant titles which did not make clear the need for the proposed research.

The Committee of Conference considered several possible compromise versions of this provision for inclusion in the bill. The conferees place the utmost importance on the effective use of Federal research funds and on insuring that the Federal government receives a full return on its investment of tax dollars in research—a matter of particular urgency at a time of severe fiscal restraint. The conferees concluded that the role of the Congress must be to set policy and priorities and to conduct careful oversight, rather than to be involved in the day-to-day execution and administration of that policy. They decided that any version of this section providing for Congressional Review of all proposed NSF grants would involve the Congress in a function which is properly the function of the NSF and the National Science Board.

Furthermore, and most significantly, Congressional review of research proposals would require members of Congress to make judgments about research activities at the many frontiers of modern science, from astronomy to zoology, which the members, with rare exceptions, are in no way equipped to make.

Following a thorough exploration of the several alternatives for resolving the difference between the House and Senate bills on this question the Committee of Conference has decided to recommend a bill which does not include a grant review provision. The Conferees wish to emphasize, however, that this recommendation does not reflect any lack of strong interest in the specific research activities supported by the NSF. The Committee of Conference urges the two Committees of jurisdiction to continue and, if necessary, to intensify their oversight over all aspects of the NSF program with particular attention to the grant review and award process. The Conferees suggest that particular attention might well be directed to the question of using grant titles which reflect the broader intent and possible payoff of each research grant. The Committee of Conference notes that both the House and Senate versions of this bill include identical provisions directing the NSF to keep the two Committees of jurisdiction fully and currently informed with respect to all activities of the agency. This provision is designed not only to give the Congress early warning of developments affecting current and future policies, but it also permits the two committees to explore in detail how Congressional policies are carried out. Furthermore, the Conferees note that they are recommending the inclusion in the bill of a provision from the Senate bill which directs the Foundation to conduct a comprehensive study of how members of the public may participate in the formulation, development, and conduct of NSF's program, policy development, and priority setting.

The Committee of Conference did include in the bill a group of provisions which, if enacted, would significantly restructure NSF's Science Education program. These provisions were, for the most part, included in the House bill and not in the Senate bill.

The thrust of these provisions is that the Foundation's Science Education program should consist not only of activities aimed at developing improvements and innovations for use in science education. The Science Education program should also include science education activities providing for the introduction of such improvements and innovations and for the training of students and teachers.

These provisions include the division of the former single "Science Education Improvement" line item into two distinct line items for "Science Education Innovation" and "Science Education Support"; the inclusion of appropriate definitions for these two activities; the inclusion of the "Comprehensive Assistance to Undergraduate Education" (CAUSE) program, based on competitive awards; the elimination of the former "Institutional Support for Science" program which was included in the Senate bill and in which grants were made on a formula basis, and its replacement with a similar program in which grants would be awarded on a competitive basis and which would be entitled "Research Initiation and Support" (RIAS) program; the section providing that parents shall have access to NSF-developed curriculum materials in which their children are engaged; the elimination of the \$21.9 million obligation minimum for "Elementary and Secondary School Programs" from the Senate bill, and the inclusion of the three obligations minimal for "Undergraduate Research Projects" (\$3.0 million), "Secondary School Science Projects" (\$2.5 million), and "Science Faculty Fellowships" (\$2.0 million).

EDWARD M. KENNEDY,
 CLAIBORNE PELL,
 THOMAS EAGLETON,
 ALAN CRANSTON,
 WALTER F. MONDALE,
 PAUL LAKALT,
 ROBERT STAFFORD,
 DICK SCHWEIKER,

Managers on the Part of the Senate.

OLIN TEAGUE,
 J. W. STYNGTON,
 DON FUQUA,
 WALTER FLOWERS,
 MIKE McCORMACK,
 C. A. MOSHER,
 MARVIN L. ESCH,

Managers on the Part of the House.

○

NATIONAL SCIENCE FOUNDATION
AUTHORIZATION ACT, 1976

JULY 30, 1975.—Ordered to be printed

Mr. TRAGUE, from the committee of conference,
submitted the following

CONFERENCE REPORT

[To accompany H.R. 4723]

The committee of conference on the disagreeing votes of the two Houses on the amendment of the Senate to the bill (H.R. 4723) National Science Foundation, Authorization Act, 1976, having met, after full and free conference, have agreed to recommend and do recommend to their respective Houses as follows:

That the House recede from its disagreement to the amendment of the Senate and agree to the same with an amendment as follows:

In lieu of the matter proposed to be inserted by the Senate amendment insert the following:

That there is hereby authorized to be appropriated to the National Science Foundation for the fiscal year ending June 30, 1976, for the following categories:

- (1) *Scientific Research Project Support, \$377,600,000.*
- (2) *National and Special Research Programs, \$109,800,000.*
- (3) *National Research Centers, \$60,200,000.*
- (4) *Research Applied to National Needs, \$70,500,000.*
- (5) *Science Education Innovation, \$39,300,000.*
- (6) *Science Education Support, \$35,300,000.*
- (7) *Graduate Student Support, \$16,400,000.*
- (8) *Science Information Activities, \$6,600,000.*
- (9) *International Cooperative Scientific Activities, \$8,000,000.*
- (10) *Intergovernmental Science and R. & D. Incentives Program, \$10,000,000.*
- (11) *Science Assessment, Policy, and Advisory Activities, \$11,100,000.*
- (12) *Program Development and Management, \$41,700,000.*

EC. 2. (a) Notwithstanding any other provision of this or any other Act—

(1) of the total amount authorized under section 1, not less than \$39,800,000 shall be available for the purpose of "Science Education Innovation";

(2) of the total amount authorized under section 1, not less than \$35,300,000 shall be available for the purpose of "Science Education Support";

(3) of the total amount authorized under section 1, not less than \$16,400,000 shall be available for the purpose of "Graduate Student Support";

(4) of the total amount authorized under section 1, category (6), not less than \$3,000,000 shall be available for "Undergraduate Research Participation";

(5) of the total amount authorized under section 1, category (6), not less than \$2,500,000 shall be available for "Secondary School Student Science Projects";

(6) of the total amount authorized under section 1, category (6), not less than \$2,000,000 shall be available for "Science Faculty Fellowships";

(7) of the total amount authorized under section 1, not less than \$6,600,000 shall be available for "Science Information Activities";

(8) of the total amount authorized under section 1, category (4), not less than \$25,000,000 shall be available for environmental research, including \$5,500,000 for earthquake engineering;

(9) of the total amount authorized under section 1, category (4), not less than \$23,000,000 shall be available for "Applied Social Research" and for "Policy-Sciences Research" directed toward increasing the cost-effectiveness of policies and programs dealing with urban and human service problems at the Federal, State, and local government levels. Such fund shall not be available for use with respect to any program or activity if such use would result in a substantial duplication of any program or activity which is receiving other Federal financial assistance. Such funds may be used to identify, analyze, and contribute knowledge to improve productivity in the public sector; identify, analyze, and evaluate more effective, efficient, and equitable ways to deliver human services; and develop the data base and analytical techniques required for improving applied research on municipal systems and human service delivery;

(10) of the total amount authorized under section 1, category (4), not less than \$1,000,000 shall be available for the purpose of "Fire Research." The transfer of this program to the Fire Research Center of the National Bureau of Standards (15 U.S.C. 278 f.) during the fiscal year ending June 30, 1976, is authorized;

(11) of the total amount authorized under section 1, category (4), not less than 7.5 per centum of such amount shall be expended to small business concerns;

(12) of the total amount authorized under section 1, category (6), not less than \$7,000,000 shall be available for "Ethnic Minorities and Women in Science Program"; and not less than \$1,500,000 thereof shall be available to develop and test methods of increasing the flow of women into careers in science;

(13) of the total amount authorized under section 1, category (10), not less than \$3,000,000 shall be available for the "Intergovernmental Science Program";

(14) of the total amount authorized under section 1, category (11), not less than \$1,500,000 shall be available for programs related to the ethical and human value implications of science and technology; and

(15) the amount of \$5,500,000 for "Institutional Improvement for Science" which was authorized and appropriated to the National Science Foundation for the fiscal year ending June 30, 1975, and which remains unobligated as of the close of the fiscal year ending June 30, 1975, shall be merged with and added to the amount authorized under section 1, category (6) ("Science Education Support"), of this Act.

(b) After the date of enactment of this Act the Director of the National Science Foundation, shall require, as a condition of any award made by the National Science Foundation for the purpose of precollege science curriculum development activities, that the awardee, and any subcontractors involved in the distribution, marketing, or selling of such science curricula, shall include in any testing agreement, sales contract, or other comparable legal instrument a provision requiring that all instructional materials, including teacher's manuals, films, tapes, or other supplementary instructional materials developed or provided under such award, subcontract, or other legal instrument, will be made available within the school district using such materials for inspection by parents or guardians of children engaged in educational programs or projects of that school district. In addition, the Director of the National Science Foundation shall take such action as may be necessary and feasible to modify awards made for the purpose of precollege science curriculum development and implementation activities on or before the date of enactment of this Act to include such a provision in all possible cases.

(c) The National Science Foundation is authorized and directed to conduct a Research Initiation and Support program, referred to hereinafter as RIAS. RIAS shall have the purpose of strengthening programs of training and research for young scientists at the graduate and post-graduate levels at educational institutions. Awards under this program may include support for exploratory research by such young scientists, the acquisition of instruments, equipment, and facilities for research and training, and other programs and activities aimed at meeting departmental, interdepartmental, or institutionwide training and research needs, or a combination thereof. Awards under RIAS shall be made on a competitive basis and may cover periods not to exceed four years. Notwithstanding any provisions of this or any other Act, of the total amount authorized under section 1, category (6), not less than \$5,000,000 shall be available for RIAS.

(d) The National Science Foundation is authorized and directed to conduct a Comprehensive Assistance to Undergraduate Science Education program, referred to hereinafter as CAUSE. CAUSE shall have the purpose of strengthening the science education capabilities of predominantly undergraduate educational institutions and departments or groups of departments thereof through awards to four-year colleges, to two-year colleges, to the undergraduate component of advanced degree institutions, and to groups of such institutions. Notwithstanding any provisions of this or any

other Act, of the total amount authorized under section 1, category (6), not less than \$15,000,000 shall be available for CAUSE and not less than \$3,500,000 thereof shall be awarded to two-year institutions. Awards within each category of CAUSE shall be made on a competitive basis.

(e) As used in this Act, "Science Education Innovation" means projects aimed at the development of new approaches to the teaching of science to students, teachers, and professionals, including but not limited to new curricula, new technologies, new methods, and retraining or other efforts to make the existing scientific manpower pool better able to fulfill the Nation's manpower needs. As used in this Act, "Science Education Support" means projects aimed at building a capability to teach science, including but not limited to awards for equipment, conferences, and institutional development.

SEC. 3. The Director of the National Science Foundation is authorized and directed to prepare a comprehensive plan for the establishment and conduct of a "Science for Citizens Program". Such program shall be designed—

(1) to improve public understanding of public policy issues involving science and technology;

(2) to facilitate the participation of experienced scientists and engineers as well as graduate and undergraduate students in public activities, including community and citizen group activities, aimed at the resolution of public policy issues having significant scientific and technical aspects;

(3) to enable nonprofit citizens public interest groups to acquire necessary technical expertise to assist them in dealing with the scientific and technical aspects of public policy issues; and

(4) to provide grants and contracts to academic and other nonprofit organizations for the conduct of applied research designed to improve the effectiveness of the programs conducted under paragraphs (1), (2), and (3) of this section.

The comprehensive plan provided for in this section shall be submitted to the Committee on Science and Technology of the House of Representatives and the Committee on Labor and Public Welfare of the Senate within six months from the date of enactment of this Act.

SEC. 4. The Director of the National Science Foundation is authorized and directed to prepare a comprehensive plan to facilitate the participation of members of the public in the formulation, development, and conduct of the National Science Foundation's programs, policies, and priorities and to submit the resulting recommendations, plans, and other findings to the Committee on Science and Technology of the House of Representatives and the Committee on Labor and Public Welfare of the Senate within one hundred and twenty days from the date of enactment of this Act.

SEC. 5. In the conduct of the energy research and development activities under the "Research Applied to National Needs" category, the National Science Foundation shall coordinate all new project awards with the Administrator of the Energy Research and Development Administration or his designee.

SEC. 6. (a) The National Science Foundation is authorized to establish the Alan T. Waterman Award for research or advanced study in the mathematical, physical, medical, biological, engineering, social, or other sciences. The award authorized by this section shall consist of a suitable medal and a

grant not to exceed \$50,000 per year for a period not to exceed three years to support further research or study by the recipient.

(b) Awards under this section shall be made to recognize and encourage the work of younger scientists whose capabilities and accomplishments show exceptional promise of significant future achievement.

(c) No more than one award shall be made under this section in any one fiscal year.

SEC. 7. Appropriations made pursuant to this Act may be used, but not to exceed \$5,000, for official consultation, representation, or other extraordinary expenses upon the approval or authority of the Director of the National Science Foundation, and his determination shall be final and conclusive upon the accounting officers of the Government.

SEC. 8. In addition to such sums as are authorized by section 1, not to exceed \$4,000,000 is authorized to be appropriated for the fiscal year ending June 30, 1976, for expenses of the National Science Foundation incurred outside the United States to be paid for in foreign currencies which the Treasury Department determines to be excess to the normal requirements of the United States.

SEC. 9. Appropriations made pursuant to authority provided in sections 1 and 8 shall remain available for obligation, for expenditure, or for obligation and expenditure, for such period or periods as may be specified in the Acts making such appropriations.

SEC. 10. No funds may be transferred from any particular category listed in section 1 to any other category or categories listed in such section if the total of the funds so transferred from that particular category would exceed 10 per centum thereof, and no funds may be transferred to any particular category listed in section 1 from any other category or categories listed in such section if the total of the funds so transferred to that particular category would exceed 10 per centum thereof, unless—

(A) a period of thirty legislative days has passed after the Director of the National Science Foundation or his designee has transmitted to the Speaker of the House of Representatives and to the President of the Senate and to the Committee on Science and Technology of the House of Representatives and to the Committee on Labor and Public Welfare of the Senate a written report containing a full and complete statement concerning the nature of the transfer and the reason therefor, or

(B) each such committee before the expiration of such period has transmitted to the Director written notice to the effect that such committee has no objection to the proposed action.

SEC. 11. Notwithstanding any other provision of this or any other Act, the Director of the National Science Foundation shall keep the Committee on Science and Technology of the House of Representatives and the Committee on Labor and Public Welfare of the Senate fully and currently informed with respect to all of the activities of the National Science Foundation.

SEC. 12. This Act may be cited as the "National Science Foundation Authorization Act, 1976".

And the Senate agree to the same.

OLIN TEAGUE,
J. W. SYMINGTON,
DON FUQUA,
WALTER FLOWERS,
MIKE McCORMACK,
C. A. MOSHER,
MARVIN L. ESCH,

Managers on the Part of the House.

EDWARD M. KENNEDY,
CLAIBORNE PELL,
BILL EAGLETON,
ALAN CRANSTON,
WALTER F. MONDALE,
PAUL LAXALT,
ROBERT STAFFORD,
DICK SCHWEIKER,

Managers on the Part of the Senate.

JOINT EXPLANATORY STATEMENT OF THE COMMITTEE OF CONFERENCE

The managers on the part of the House and the Senate at the conference on the disagreeing votes of the two Houses on the amendment of the Senate to the bill (H.R. 4723) National Science Foundation Authorization Act, 1976, and for other purposes, submit the following joint statement to the House and the Senate in explanation of the effect of the action agreed upon by the managers and recommended in the accompanying conference report:

The amendment of the Senate struck out all after the enacting clause in the House bill and substituted new language. The committee of conference agreed to accept the Senate amendment with certain amendments and stipulations proposed by the conferees.

The National Science Foundation requested authorization in the amount of \$751,400,000 for fiscal year 1976, plus \$4,000,000 in excess foreign currencies. The House authorized the amounts requested. The respective Senate figures were \$822,600,000 and \$4,000,000 in excess foreign currencies.

The committee of conference recommends \$787,000,000, plus \$4,000,000 in excess foreign currencies. This figure is \$35,600,000 more than authorized by the House and \$35,600,000 less than authorized by the Senate for fiscal year 1976.

The specific actions taken by the conference are as follows:

SECTION 1—FUNDS

1. For Scientific Research Project Support, the budget request of the National Science Foundation was \$380,000,000. The House authorized \$366,300,000 and the Senate authorized \$389,000,000. The conferees agreed on \$377,600,000.

2. For National and Special Research Program the Foundation requested \$115,500,000. The House authorized \$101,500,000 and the Senate authorized \$113,500,000. The conferees agreed on \$109,800,000, which includes \$2,800,000 for the construction of coastal research vessels.

3. For National Research Centers, the House, the Senate and the conferees approved the Foundation request for \$60,200,000.

4. For Research Applied to National Needs the Foundation requested \$79,500,000. The House authorized \$60,000,000 and the Senate authorized \$81,000,000. The conferees agreed on \$70,500,000.

5. & 6. For Science Education Improvement the Foundation requested \$50,000,000. The House authorized \$39,800,000 for Science Education Innovation and \$34,700,000 for Science Education Support; the Senate authorized \$70,000,000 for Science Education Improvement and \$15,000,000 for Institutional Support. The conferees agreed on \$39,800,000 for Science Education Innovation and \$35,300,000 for

Science Education Support. No funds are recommended by the conferees for Institutional Support.

7. For Graduate Student Support the Foundation requested \$14,800,000. The House authorized \$15,800,000 and the Senate authorized \$17,000,000. The conferees agreed on \$16,400,000.

8. For Science Information Activities the Foundation requested \$6,000,000. The House authorized \$6,200,000 and the Senate authorized \$7,000,000. The conferees agreed on \$6,600,000.

9. For International Cooperative Activities the House, the Senate and the conferees approved the Foundation request for \$8,000,000.

10. For Intergovernmental Science and R&D Incentives the Foundation requested \$3,000,000. The House authorized \$8,000,000 and the Senate authorized \$12,000,000. The conferees agreed on \$10,000,000.

11. For National R&D Assessment, Planning and Policy Studies, Science Advisory Activities, and Ethical and Human Value Implications of Science and Technology the Foundation requested \$9,600,000. The House approved \$9,200,000 for Science Assessment, Policy and Advisory Activities and \$400,000 for Ethical and Human Value Implications of Science and Technology. The Senate approved the budget request and an additional \$1,500,000 for Ethical and Human Value Implications of Science and Technology. The conferees agreed on \$11,100,000 for Science Assessment, Policy and Advisory Activities, including the additional \$1,500,000 for Ethical and Human Value Implications of Science and Technology.

12. For Program Development and Management, the House, the Senate, and the conferees approved the Foundation request for \$41,700,000.

SECTION 2—FUNDING LEVELS AND PROGRAMS

Section 2(a)—Obligation Minima

The bill as passed by the House included minimum obligation levels for the following program activities:

- (1) Science Education Innovation, \$39,800,000.
- (2) Science Education Support, \$34,700,000, which included five sub-floor limitations. The latter were \$3,000,000 for Undergraduate Research Participation, \$2,500,000 for Secondary School Student Science Projects, and \$2,000,000 for Science Faculty Fellowships, and \$18,000,000 for CAUSE (including \$3,500,000 for two-year institutions).
- (3) Graduate Student Support, \$15,800,000.
- (4) Intergovernmental Science Program, \$6,000,000.
- (5) Research Applied to National Needs, \$23,000,000 for Applied Social Research and for Policy Sciences Research; and \$1,000,000 for Fire Research.

The Senate included minimum obligation levels for the following:

- (1) Institutional Improvement for Science, \$15,000,000.
- (2) Science Education Improvement, \$70,000,000, which included two sub-floor limitations. The latter were \$9,600,000 for Ethnic Minorities and Women in Science and \$21,900,000 for Elementary and Secondary School Programs.
- (3) Intergovernmental Science Program, \$10,000,000.

(4) Science Information Activities, \$7,000,000.

(5) Research Applied to National Needs, \$25,000,000 for environmental research, including \$5,500,000 for earthquake engineering.

(6) Ethical and Human Value Implications of Science and Technology, \$1,500,000.

(7) Research Applied to National Needs—not less than 10% of such funds shall be expended to small business concerns.

The Conferees agreed to the following minimum obligations levels:

- (1) Science Education Innovation, \$39,800,000 floor.
- (2) Science Education Support—\$35,300,000 floor with subfloors including \$3,000,000 floor for Undergraduate Research Participation, \$2,500,000 floor for Secondary School Student Science Projects, \$2,000,000 Science Faculty Fellowships, \$15,000,000 floor for CAUSE (including \$3,500,000 floor for two-year institutions), \$5,000,000 for RIAS and \$7,000,000 floor for Ethnic Minorities and Women in Science (including \$1,500,000 to develop and test methods of increasing the flow of women into science careers). The Conferees expect that the increase in the Ethnic Minorities and Women in Science program, together with carryover funds from fiscal year 1975, will enable the Foundation to increase funding of programs for ethnic minorities and to conduct more effective programs to encourage women to enter careers in science and technology.

(3) Graduate Student Support, \$16,400,000 floor.

(4) Science Information Activities, \$6,600,000 floor.

(5) Research Applied to National Needs—\$25,000,000 floor for environmental research including \$5,500,000 floor for earthquake engineering; \$23,000,000 floor for Applied Social Research and for Policy Sciences Research, with the proviso that such research should not substantially duplicate other federally funded research; and not less than 7.5% of available funds to be expended to small business concerns. The Conferees also agreed that the Foundation should make an effort to expend up to 10% to small business concerns and indicated that for fiscal year 1977 a set-aside at that level should be considered; and \$1,000,000 floor for fire research with a proviso authorizing the transfer of the NSF/RANN Fire Research program to the Fire Research Center of the National Bureau of Standards. The Fire Research Center was established under the Federal Fire Prevention and Control Act of 1974 as a focus for fire related research separate from the National Fire Prevention and Control Administration, and the conferees agreed that the NSF/RANN fire research program should be transferred to this Center.

(6) Intergovernmental Science Program, \$8,000,000 floor.

(7) Ethical and Human Value Implications of Science and Technology, \$1,500,000.

Section 2(b) Instructional Materials

The House bill included a section providing that instructional science curriculum materials developed under grants from the NSF must be made available for inspection in local school districts to the parents of children using such materials. The Senate bill included no comparable provision.

The Committee of Conference concluded that this provision confirms the principle parental access, at the local level to teaching materials used by their children. To insure that the provision will be most useful in practice the section was rewritten in a manner that will insure the incorporation of an appropriate clause in all future awards. For awards made in the past the NSF Director is requested to include the appropriate clause to the maximum possible extent.

Section 2(c) Graduate and Postgraduate Training and Research

The conferees agreed that graduate and postgraduate training and research programs at educational institutions require continued assistance from the Foundation. Concern was expressed, however, that in the past such assistance, under the Institutional Improvement for Science program was based on formula grants rather than on a demonstration of need, and that institutions were not required to submit, prior to the award of a grant, a statement of the purposes for which the grant would be used.

The program of Research Initiation And Support (RIAS) is designed to meet those concerns and to make available to educational institutions funds to support exploratory research by young scientists, and for the acquisition of instruments, equipment and facilities for research and training. Funding under RIAS will also be available for programs and activities to meet departmental, inter-departmental, and institution-wide training and research needs, or for a combination thereof.

A minimum obligation level of \$5,000,000 for RIAS is included in the bill, and the conferees expect that carryover funds available for Science Education Support will be used to fund this program, and that grants will be awarded on a competitive basis.

Section 2(d) Undergraduate Science Program (CAUSE)

The House bill includes a section which would establish a new Comprehensive Assistance to Undergraduate Education (CAUSE) program. The Senate bill included no comparable provision.

The Committee of Conference reviewed the purpose of this program and its potential role within the over-all NSF science education program. CAUSE was proposed in an effort to strengthen undergraduate science education and is intended to incorporate the best features of the highly successful College Science Improvement (COSIP) program conducted by the NSF. Both on its merit and as part of the compromise on the grant review provision the Committee of Conference concluded that CAUSE should be included in the proposed bill. However, the minimum obligation level was reduced from \$18.0 million to \$15.0 million. The separate minimum obligation level of \$3.5 million for two-year institutions was retained.

Section 2(e) Definitions

The House bill included a section defining the scope of the two new line items "Science Education Innovation" and "Science Education Support". The Senate bill did not include a corresponding provision.

The Committee of Conference, having accepted the division of the former "Science Education Improvement" line item into these two new line items, recommends the incorporation of these two definitions into the bill.

SECTION 3—SCIENCE FOR CITIZENS PROGRAM PLAN

The Senate bill includes a section which would establish a Science for Citizens Program. The House bill did not include a similar provision.

The conferees agreed to include a section directing the Foundation to prepare a comprehensive plan for the establishment and conduct of a Science for Citizens Program. This plan is to be prepared with full public participation including: concerned citizens groups; educational institutions; scientific societies; individuals and groups with expertise, experience or interest in improving the access of citizens to scientific and technical information; and individuals and groups with expertise, experience or interest in improving the participation of scientists in public policy debates.

The Conferees expect that a number of public seminars and workshops will be held during the development of the comprehensive plan, and that announcements of these sessions will be widely publicized, including notice in the Federal Register at least 30 days prior to such sessions.

The conferees expect that the plan will be completed within six months and that it will provide the basis for the inclusion of a Science for Citizens Program in the Foundation's fiscal year 1976 budget.

SECTION 4—PUBLIC PARTICIPATION PLAN

The Senate bill included a section directing the Foundation to prepare a plan to facilitate the participation of members of the public in the formulation, development and conduct of the Foundation's programs, policies and priorities. The House bill did not include a similar provision.

The conferees agreed to adopt the Senate provision specifying that the plan will result in improved understanding by the public of the Foundation's science education and research programs, and in improved access by the public to information concerning those programs. The provision also stipulates that the plan will result in improved public participation in the formulation of the Foundation's programs, policies and priorities.

SECTION 5—COORDINATION OF ENERGY RESEARCH

The House bill includes a section providing that energy research and development activities conducted by the NSF under the RANN program shall be coordinated with the Energy Research and Development Administration. The Senate bill includes no comparable provision.

The Committee of Conference recommends the inclusion of this provision in the bill.

SECTION 6—ALAN T. WATERMAN AWARD

The Senate bill included a section providing for the award of the Alan T. Waterman Award for research or advanced study in the sciences. The House bill did not include a corresponding provision.

The Committee of Conference agreed to include this section, which is intended to mark the 25th anniversary of the National Science Foundation. The number of awards to be made annually was reduced from three to one.

SECTION 7—REPRESENTATION LIMITATION

Section 7 is identical to section 3 of the House bill and section 7 of the Senate bill.

SECTION 8—FOREIGN CURRENCIES LIMITATION

Section 8 is identical to section 4 of the House bill and section 6 of the Senate bill.

SECTION 9—APPROPRIATIONS AVAILABILITY

Section 9 is identical to section 5 of the House bill and section 8 of the Senate bill.

SECTION 10—LIMIT ON TRANSFER OF FUNDS

Section 10 is identical to section 6 of the House bill and section 9 of the Senate bill.

SECTION 11—FULLY AND CURRENTLY INFORMED CLAUSE

Section 11 is identical to section 7 of the House bill and section 10 of the Senate bill.

SECTION 12—TITLE OF ACT

Section 12 is identical to section 8 of the House bill and section 11 of the Senate bill.

CONGRESSIONAL REVIEW OF RESEARCH PROPOSALS

The House bill includes a section providing for Congressional review and approval of individual research awards. The Senate bill includes no comparable provision. Under this provision in the House bill the NSF would submit every 30 days to the committees of jurisdiction in the House and in the Senate a list of grants which the agency proposes to make. For each such proposed grant all facts and considerations bearing on the agency's decision to recommend the award would be submitted. Either House of the Congress could disapprove one or more grants on this list by simple resolution. Upon the expiration of 30 days the NSF would be free to award the remaining grants on the list.

The Conferees on the part of the House presented the reasons advanced for the inclusion of this section in the House bill. The chief reason was that in the past the NSF had awarded grants, some of which did not appear to promise a significant return in scientific knowledge when measured against the cost to the taxpayer, and some carrying grant titles which did not make clear the need for the proposed research.

The Committee of Conference considered several possible compromise versions of this provision for inclusion in the bill. The conferees place the utmost importance on the effective use of Federal research funds and on insuring that the Federal government receives a full return on its investment of tax dollars in research—a matter of particular urgency at a time of severe fiscal restraint. The conferees concluded that the role of the Congress must be to set policy and priorities and to conduct careful oversight, rather than to be involved in the day-to-day execution and administration of that policy. They decided that any version of this section providing for Congressional Review of all proposed NSF grants would involve the Congress in a function which is properly the function of the NSF and the National Science Board.

Furthermore, and most significantly, Congressional review of research proposals would require members of Congress to make judgments about research activities at the many frontiers of modern science, from astronomy to zoology, which the members, with rare exceptions, are in no way equipped to make.

Following a thorough exploration of the several alternatives for resolving the difference between the House and Senate bills on this question the Committee of Conference has decided to recommend a bill which does not include a grant review provision. The Conferees wish to emphasize, however, that this recommendation does not reflect any lack of strong interest in the specific research activities supported by the NSF. The Committee of Conference urges the two Committees of jurisdiction to continue and, if necessary, to intensify their oversight over all aspects of the NSF program with particular attention to the grant review and award process. The Conferees suggest that particular attention might well be directed to the question of using grant titles which reflect the broader intent and possible payoff of each research grant. The Committee of Conference notes that both the House and Senate versions of this bill include identical provisions directing the NSF to keep the two Committees of jurisdiction fully and currently informed with respect to all activities of the agency. This provision is designed not only to give the Congress early warning of developments affecting current and future policies, but it also permits the two committees to explore in detail how Congressional policies are carried out. Furthermore, the Conferees note that they are recommending the inclusion in the bill of a provision from the Senate bill which directs the Foundation to conduct a comprehensive study of how members of the public may participate in the formulation, development, and conduct of NSF's program, policy development, and priority setting.

The Committee of Conference did include in the bill a group of provisions which, if enacted, would significantly restructure NSF's Science Education program. These provisions were, for the most part, included in the House bill and not in the Senate bill.

The thrust of these provisions is that the Foundation's Science Education program should consist not only of activities aimed at developing improvements and innovations for use in science education. The Science Education program should also include science education activities providing for the introduction of such improvements and innovations and for the training of students and teachers.

These provisions include the division of the former single "Science Education Improvement" line item into two distinct line items for "Science Education Innovation" and "Science Education Support"; the inclusion of appropriate definitions for these two activities; the inclusion of the "Comprehensive Assistance to Undergraduate Education" (CAUSE) program, based on competitive awards; the elimination of the former "Institutional Support for Science" program which was included in the Senate bill and in which grants were made on a formula basis, and its replacement with a similar program in which grants would be awarded on a competitive basis and which would be entitled "Research Initiation and Support" (RIAS) program; the section providing that parents shall have access to NSF-developed curriculum materials in which their children are engaged; the elimination of the \$21.9 million obligation minimum for "Elementary and Secondary School Programs" from the Senate bill, and the inclusion of the three obligations minimal for "Undergraduate Research Projects" (\$3.0 million), "Secondary School Science Projects" (\$2.5 million), and "Science Faculty Fellowships" (\$2.0 million).

OLIN TEAGUE,
J. W. SYMINGTON,
DON FUQUA,
WALTER FLOWERS,
MIKE McCORMACK,
C. A. MOSHER,
MARVIN L. ESCH,

Managers on the Part of the House.

EDWARD M. KENNEDY,
CLAIBORNE PELL,
BILL EAGLETON,
ALAN CRANSTON,
WALTER F. MONDALE,
PAUL LAXALT,
ROBERT STAFFORD,
DICK SCHWEIKER,

Managers on the Part of the Senate.

○

Ninety-fourth Congress of the United States of America

AT THE FIRST SESSION

*Begun and held at the City of Washington on Tuesday, the fourteenth day of January,
one thousand nine hundred and seventy-five*

An Act

Authorizing appropriations to the National Science Foundation for
fiscal year 1976.

*Be it enacted by the Senate and House of Representatives of the
United States of America in Congress assembled, That there is hereby
authorized to be appropriated to the National Science Foundation for
the fiscal year ending June 30, 1976, for the following categories:*

- (1) Scientific Research Project Support, \$377,600,000.
- (2) National and Special Research Programs, \$109,800,000.
- (3) National Research Centers, \$60,200,000.
- (4) Research Applied to National Needs, \$70,500,000.
- (5) Science Education Innovation, \$39,800,000.
- (6) Science Education Support, \$35,300,000.
- (7) Graduate Student Support, \$16,400,000.
- (8) Science Information Activities, \$6,600,000.
- (9) International Cooperative Scientific Activities, \$8,000,000.
- (10) Intergovernmental Science and R. & D. Incentives Program,
\$10,000,000.
- (11) Science Assessment, Policy, and Advisory Activities,
\$11,100,000.
- (12) Program Development and Management, \$41,700,000.

SEC. 2. (a) Notwithstanding any other provision of this or any other
Act—

(1) of the total amount authorized under section 1, not less than
~~\$39,800,000~~ shall be available for the purpose of "Science Educa-
tion Innovation";

(2) of the total amount authorized under section 1, not less than
\$35,300,000 shall be available for the purpose of "Science Educa-
tion Support";

(3) of the total amount authorized under section 1, not less than
\$16,400,000 shall be available for the purpose of "Graduate Stu-
dent Support";

(4) of the total amount authorized under section 1, category (6),
not less than \$3,000,000 shall be available for "Undergraduate
Research Participation";

(5) of the total amount authorized under section 1, category (6),
not less than \$2,500,000 shall be available for "Secondary School
Student Science Projects";

(6) of the total amount authorized under section 1, category (6),
not less than \$2,000,000 shall be available for "Science Faculty
Fellowships";

(7) of the total amount authorized under section 1, not less than
\$6,600,000 shall be available for "Science Information Activities";

(8) of the total amount authorized under section 1, category (4),
not less than \$25,000,000 shall be available for environmental
research, including \$5,500,000 for earthquake engineering;

(9) of the total amount authorized under section 1, category
(4), not less than \$23,000,000 shall be available for "Applied
Social Research" and for "Policy-Sciences Research" directed
toward increasing the cost-effectiveness of policies and programs
dealing with urban and human service problems at the Federal,

State, and local government levels. Such funds shall not be available for use with respect to any program or activity if such use would result in a substantial duplication of any program or activity which is receiving other Federal financial assistance. Such funds may be used to identify, analyze, and contribute knowledge to improve productivity in the public sector; identify, analyze, and evaluate more effective, efficient, and equitable ways to deliver human services; and develop the data base and analytical techniques required for improving applied research on municipal systems and human service delivery;

(10) of the total amount authorized under section 1, category (4), not less than \$1,000,000 shall be available for the purpose of "Fire Research." The transfer of this program to the Fire Research Center of the National Bureau of Standards (15 U.S.C. 278 f.) during the fiscal year ending June 30, 1976, is authorized;

(11) of the total amount authorized under section 1, category (4), not less than 7.5 per centum of such amount shall be expended to small business concerns;

(12) of the total amount authorized under section 1, category (6), not less than \$7,000,000 shall be available for "Ethnic Minorities and Women in Science Program"; and not less than \$1,500,000 thereof shall be available to develop and test methods of increasing the flow of women into careers in science;

(13) of the total amount authorized under section 1, category (10), not less than \$8,000,000 shall be available for the "Intergovernmental Science Program";

(14) of the total amount authorized under section 1, category (11), not less than \$1,500,000 shall be available for programs related to the ethical and human value implications of science and technology; and

(15) the amount of \$5,500,000 for "Institutional Improvement for Science" which was authorized and appropriated to the National Science Foundation for the fiscal year ending June 30, 1975, and which remains unobligated as of the close of the fiscal year ending June 30, 1975, shall be merged with and added to the amount authorized under section 1, category (6) ("Science Education Support"), of this Act.

(b) After the date of enactment of this Act the Director of the National Science Foundation, shall require, as a condition of any award made by the National Science Foundation for the purpose of precollege science curriculum development activities, that the awardee, and any subcontractors involved in the distribution, marketing, or selling of such science curricula, shall include in any testing agreement, sales contract, or other comparable legal instrument a provision requiring that all instructional materials, including teacher's manuals, films, tapes, or other supplementary instructional materials developed or provided under such award, subcontract, or other legal instrument, will be made available within the school district using such materials for inspection by parents or guardians of children engaged in educational programs or projects of that school district. In addition, the Director of the National Science Foundation shall take such action as may be necessary and feasible to modify awards made for the purpose of precollege science curriculum development and implementation activities on or before the date of enactment of this Act to include such a provision in all possible cases.

(c) The National Science Foundation is authorized and directed to conduct a Research Initiation and Support program, referred to hereinafter as RIAS. RIAS shall have the purpose of strengthening programs of training and research for young scientists at the graduate and postgraduate levels at educational institutions. Awards under this program may include support for exploratory research by such young scientists, the acquisition of instruments, equipment, and facilities for research and training, and other programs and activities aimed at meeting departmental, interdepartmental, or institutionwide training and research needs, or a combination thereof. Awards under RIAS shall be made on a competitive basis and may cover periods not to exceed four years. Notwithstanding any provisions of this or any other Act, of the total amount authorized under section 1, category (6), not less than \$5,000,000 shall be available for RIAS.

(d) The National Science Foundation is authorized and directed to conduct a Comprehensive Assistance to Undergraduate Science Education program, referred to hereinafter as CAUSE. CAUSE shall have the purpose of strengthening the science education capabilities of predominantly undergraduate educational institutions and departments or groups of departments thereof through awards to four-year colleges, to two-year colleges, to the undergraduate component of advanced degree institutions, and to groups of such institutions. Notwithstanding any provisions of this or any other Act, of the total amount authorized under section 1, category (6), not less than \$15,000,000 shall be available for CAUSE and not less than \$3,500,000 thereof shall be awarded to two-year institutions. Awards within each category of CAUSE shall be made on a competitive basis.

(e) As used in this Act, "Science Education Innovation" means projects aimed at the development of new approaches to the teaching of science to students, teachers, and professionals, including but not limited to new curricula, new technologies, new methods, and retraining or other efforts to make the existing scientific manpower pool better able to fulfill the Nation's manpower needs. As used in this Act, "Science Education Support" means projects aimed at building a capability to teach science, including but not limited to awards for equipment, conferences, and institutional development.

Sec. 3. The Director of the National Science Foundation is authorized and directed to prepare a comprehensive plan for the establishment and conduct of a "Science for Citizens Program". Such program shall be designed—

- (1) to improve public understanding of public policy issues involving science and technology;
- (2) to facilitate the participation of experienced scientists and engineers as well as graduate and undergraduate students in public activities, including community and citizen group activities, aimed at the resolution of public policy issues having significant scientific and technical aspects;
- (3) to enable nonprofit citizens public interest groups to acquire necessary technical expertise to assist them in dealing with the scientific and technical aspects of public policy issues; and
- (4) to provide grants and contracts to academic and other nonprofit organizations for the conduct of applied research designed to improve the effectiveness of the programs conducted under paragraphs (1), (2), and (3) of this section.

The comprehensive plan provided for in this section shall be submitted to the Committee on Science and Technology of the House of Representatives and the Committee on Labor and Public Welfare of the Senate within six months from the date of enactment of this Act.

SEC. 4. The Director of the National Science Foundation is authorized and directed to prepare a comprehensive plan to facilitate the participation of members of the public in the formulation, development, and conduct of the National Science Foundation's programs, policies, and priorities and to submit the resulting recommendations, plans, and other findings to the Committee on Science and Technology of the House of Representatives and the Committee on Labor and Public Welfare of the Senate within one hundred and twenty days from the date of enactment of this Act.

SEC. 5. In the conduct of the energy research and development activities under the "Research Applied to National Needs" category, the National Science Foundation shall coordinate all new project awards with the Administrator of the Energy Research and Development Administration or his designee.

SEC. 6. (a) The National Science Foundation is authorized to establish the Alan T. Waterman Award for research or advanced study in the mathematical, physical, medical, biological, engineering, social, or other sciences. The award authorized by this section shall consist of a suitable medal and a grant not to exceed \$50,000 per year for a period not to exceed three years to support further research or study by the recipient.

(b) Awards under this section shall be made to recognize and encourage the work of younger scientists whose capabilities and accomplishments show exceptional promise of significant future achievement.

(c) No more than one award shall be made under this section in any one fiscal year.

SEC. 7. Appropriations made pursuant to this Act may be used, but not to exceed \$5,000, for official consultation, representation, or other extraordinary expenses upon the approval or authority of the Director of the National Science Foundation, and his determination shall be final and conclusive upon the accounting officers of the Government.

SEC. 8. In addition to such sums as are authorized by section 1, not to exceed \$4,000,000 is authorized to be appropriated for the fiscal year ending June 30, 1976, for expenses of the National Science Foundation incurred outside the United States to be paid for in foreign currencies which the Treasury Department determines to be excess to the normal requirements of the United States.

SEC. 9. Appropriations made pursuant to authority provided in sections 1 and 8 shall remain available for obligation, for expenditure, or for obligation and expenditure, for such period or periods as may be specified in the Acts making such appropriations.

SEC. 10. No funds may be transferred from any particular category listed in section 1 to any other category or categories listed in such section if the total of the funds so transferred from that particular category would exceed 10 per centum thereof, and no funds may be transferred to any particular category listed in section 1 from any other category or categories listed in such section if the total of the funds so transferred to that particular category would exceed 10 per centum thereof, unless—

(A) a period of thirty legislative days has passed after the Director of the National Science Foundation or his designee has

H.R. 4723—5

transmitted to the Speaker of the House of Representatives and to the President of the Senate and to the Committee on Science and Technology of the House of Representatives and to the Committee on Labor and Public Welfare of the Senate a written report containing a full and complete statement concerning the nature of the transfer and the reason therefor, or

(B) each such committee before the expiration of such period has transmitted to the Director written notice to the effect that such committee has no objection to the proposed action.

SEC. 11. Notwithstanding any other provision of this or any other Act, the Director of the National Science Foundation shall keep the Committee on Science and Technology of the House of Representatives and the Committee on Labor and Public Welfare of the Senate fully and currently informed with respect to all of the activities of the National Science Foundation.

SEC. 12. This Act may be cited as the "National Science Foundation Authorization Act, 1976".

Speaker of the House of Representatives.

*Vice President of the United States and
President of the Senate.*

August 2, 1975

Dear Mr. Director:

The following bills were received at the White House on August 2nd:

H.R. 83 ✓ ✓	H.R. 7716 ✓ ✓
H.R. 1553 ✓ ✓	H.R. 9091 ✓ ✓
H.R. 4241 ✓ ✓	S. 409 ✓
H.R. 4723 ✓ ✓	S. 1531 ✓
H.R. 5405 ✓ ✓	S. 1716 ✓
H.R. 7710 ✓ ✓	S. 2073 ✓

Please let the President have reports and recommendations as to the approval of these bills as soon as possible.

Sincerely,

Robert D. Linder
Chief Executive Clerk

The Honorable James T. Lynn
Director
Office of Management and Budget
Washington, D. C.