

CONTENTS

	Page
Letter of Transmittal	III
The Director's Statement	IX
PROGRAM ACTIVITIES OF THE NATIONAL SCIENCE FOUNDATION	1
SUPPORT OF SCIENTIFIC RESEARCH	3
Research Programs	4
Biological and Medical Sciences	4
Current Research Support	4
Significant Research Developments in the Biological and Medical Sciences	20
Mathematical, Physical, and Engineering Sciences	26
Current Research Support	26
Significant Research Developments in the Mathematical, Physical, and Engineering Sciences	39
Social Sciences	44
Current Research Support	44
Antarctic Research	51
Program Operations	51
Current Research Support	54
Facilities	56
Specialized Biological and Medical Sciences Research Facilities	56
University Computing Facilities	57
Oceanographic Research Vessels	57
Hawaii Institute of Geophysics	58
National Research Centers	58
Graduate Research Laboratories	60
Research-Related Activities	61
Scientific Conferences and Symposia	61
Support of Travel to International Meetings	65
Training Aspects of Research Grants	65
Patents Resulting from NSF-Supported Research	65
Fiscal Analysis of Research Program	66
INSTITUTIONAL GRANTS	68
EDUCATION IN THE SCIENCES	85
Fellowship Programs	86
Graduate Fellowships	87
Cooperative Graduate Fellowships	87
Summer Fellowships for Graduate Teaching Assistants	87
Postdoctoral Fellowships (Regular)	87
Senior Postdoctoral Fellowships	88
Science Faculty Fellowships	88
Summer Fellowships for Secondary School Teachers of Science and Mathematics	88

EDUCATION IN THE SCIENCES—Continued	
Fellowship Programs—Continued	
Extramural Fellowship Programs	88
Special Report on the Cooperative Graduate Fellowship Program	89
Institute Programs	91
Summer Institutes	92
Academic Year Institutes	94
In-Service Institutes	95
Special Projects in Science Education	96
Programs for Secondary School Students	96
Undergraduate Science Education Programs	99
Advanced Science Education Programs	101
Public Understanding of Science	104
Course Content Improvement Program	104
Course Content Improvement Studies in Science and Engineering	105
Supplementary Teaching Aids	107
Special Report on Studies in Mathematics	108
Scientific Personnel and Education Studies	111
The National Register of Scientific and Technical Personnel	112
Scientific Manpower Studies	115
DISSEMINATION OF SCIENTIFIC INFORMATION	120
Major Problem Areas	120
Grants and Proposals	120
Coordination of Scientific Information Activities	121
Overall Federal Scientific Information Pattern	122
Education and Training	123
Documentation Research	124
Studies of Information Needs of Scientists	124
Information Organization and Searching	125
Mechanical Translation and Linguistic Analysis	126
Linguistic Analysis for Other Purposes	126
State-of-the-Art Surveys	127
Coordination and Exchange of Information	127
Support of Scientific Publications	128
Continuation of Conventional Publication Support	128
Strengthening Abstracting and Indexing Services	128
Scientific Communication Studies and Experiments	129
Foreign Science Information	130
Translation of Soviet Scientific Literature	131
Translation of Other Languages	131
Public Law 480 Translation Activities	132
Exchanges and Clearinghouses	132
Conferences, Area Studies, and Reference Aids	133
Research Data and Information Services	135
Dissemination of Government Research Results	135
Specialized Information and Data Centers	137
SPECIAL INTERNATIONAL PROGRAMS	138
International Science Program	138
Development of International Science Policy	138
Establishment and Operations of the NSF-Tokyo Office	138
International Science Support Projects	139
U.S.—U.S.S.R. Exchanges	140

	Page
SPECIAL INTERNATIONAL PROGRAMS—Continued	
International Science Education Program.....	141
Course Content Improvement Program.....	141
Science Teacher and Student Training Programs.....	142
Liaison and Backstopping Activities.....	142
MEASURING AND APPRAISING THE NATIONAL INVESTMENT IN SCIENCE	144
Science and Technology in Relation to Economic Growth.....	144
Financing and Performance of Research and Development....	148
Basic Research.....	150
Study of All Scientific Activities.....	150
Policy Implications.....	151
A PHOTOGRAPHIC SAMPLING OF FOUNDATION-SUPPORTED ACTIVITIES.....	71
APPENDICES.....	155
A. National Science Board, Staff, Committees, and Advisory Panels.....	157
B. Financial Report for Fiscal Year 1961.....	173
C. Grants for Basic Research.....	175
D. Other than Basic Research Grants.....	223
E. Fellowship Awards offered.....	272
F. Publications of the National Science Foundation.....	324