

NATIONAL SCIENCE FOUNDATION

Federal Funds

RESEARCH AND RELATED ACTIVITIES

For necessary expenses in carrying out the National Science Foundation Act of 1950 (42 U.S.C. 1861 et seq.), and Public Law 86–209 (42 U.S.C. 1880 et seq.); services as authorized by section 3109 of title 5, United States Code; maintenance and operation of aircraft and purchase of flight services for research support; acquisition of aircraft; and authorized travel; **[\$6,033,645,000]** \$6,079,430,000, to remain available until September 30, **[2017]** 2018, of which not to exceed **[\$540,000,000]** \$544,000,000 shall remain available until expended for polar research and operations support, and for reimbursement to other Federal agencies for operational and science support and logistical and other related activities for the United States Antarctic program: *Provided*, That receipts for scientific support services and materials furnished by the National Research Centers and other National Science Foundation supported research facilities may be credited to this appropriation. (*Science Appropriations Act, 2016.*)

4011	Outlays from discretionary balances	4,713	4,349	4,282
4020	Outlays, gross (total)	5,526	5,678	5,620
	Offsets against gross budget authority and outlays:			
	Offsetting collections (collected) from:			
4030	Federal sources	-109	-122	-122
4033	Non-Federal sources	-1		
4040	Offsets against gross budget authority and outlays (total)	-110	-122	-122
	Additional offsets against gross budget authority only:			
4050	Change in uncollected pymts, Fed sources, unexpired	-9		
4052	Offsetting collections credited to expired accounts	28		
4060	Additional offsets against budget authority only (total)	19		
4070	Budget authority, net (discretionary)	5,934	6,034	6,079
4080	Outlays, net (discretionary)	5,416	5,556	5,498
4180	Budget authority, net (total)	5,934	6,034	6,079
4190	Outlays, net (total)	5,416	5,556	5,498

Program and Financing (in millions of dollars)

Identification code 049–0100–0–1–999	2015 actual	2016 est.	2017 est.
Obligations by program activity:			
0001 Biological Sciences	736	744	746
0002 Computer and Information Science and Engineering	933	936	939
0003 Engineering	924	916	946
0005 Geosciences	1,320	1,325	1,320
0006 Mathematical and Physical Sciences	1,376	1,355	1,355
0007 Social, Behavioral and Economic Sciences	276	272	272
0008 Integrative Activities	471	450	451
0009 Office of International Science and Engineering	5	49	49
0013 Arctic Research Commission	1	1	1
0799 Total direct obligations	6,042	6,048	6,079
0801 Research and Related Activities (Reimbursable)	95	120	120
0900 Total new obligations	6,137	6,168	6,199
Budgetary resources:			
Unobligated balance:			
1000 Unobligated balance brought forward, Oct 1	58	12	
1021 Recoveries of prior year unpaid obligations	70		
1050 Unobligated balance (total)	128	12	
Budget authority:			
Appropriations, discretionary:			
1100 Appropriation	5,934	6,034	6,079
Spending authority from offsetting collections, discretionary:			
1700 Collected	82	122	122
1701 Change in uncollected payments, Federal sources	9		
1750 Spending auth from offsetting collections, disc (total)	91	122	122
1900 Budget authority (total)	6,025	6,156	6,201
1930 Total budgetary resources available	6,153	6,168	6,201
Memorandum (non-add) entries:			
1940 Unobligated balance expiring	-4		
1941 Unexpired unobligated balance, end of year	12		2
Change in obligated balance:			
Unpaid obligations:			
3000 Unpaid obligations, brought forward, Oct 1	9,174	9,672	10,162
3010 Obligations incurred, unexpired accounts	6,137	6,168	6,199
3011 Obligations incurred, expired accounts	62		
3020 Outlays (gross)	-5,526	-5,678	-5,620
3040 Recoveries of prior year unpaid obligations, unexpired	-70		
3041 Recoveries of prior year unpaid obligations, expired	-105		
3050 Unpaid obligations, end of year	9,672	10,162	10,741
Uncollected payments:			
3060 Uncollected pymts, Fed sources, brought forward, Oct 1	-117	-98	-98
3070 Change in uncollected pymts, Fed sources, unexpired	-9		
3071 Change in uncollected pymts, Fed sources, expired	28		
3090 Uncollected pymts, Fed sources, end of year	-98	-98	-98
Memorandum (non-add) entries:			
3100 Obligated balance, start of year	9,057	9,574	10,064
3200 Obligated balance, end of year	9,574	10,064	10,643
Budget authority and outlays, net:			
Discretionary:			
4000 Budget authority, gross	6,025	6,156	6,201
Outlays, gross:			
4010 Outlays from new discretionary authority	813	1,329	1,338

Summary of Budget Authority and Outlays (in millions of dollars)

	2015 actual	2016 est.	2017 est.
Enacted/requested:			
Budget Authority	5,934	6,034	6,079
Outlays	5,416	5,556	5,498
Legislative proposal, subject to PAYGO:			
Budget Authority			346
Outlays			69
Total:			
Budget Authority	5,934	6,034	6,425
Outlays	5,416	5,556	5,567

The Research and Related Activities appropriation enables the United States to provide leadership and promote progress across the expanding frontiers of scientific and engineering research and education.

The major research program activities of NSF are:

Biological Sciences.—This activity supports understanding how complex living systems function and interact with each other and with non-living systems, which has direct impact on issues of national importance related to the environment, economy, agriculture, and human welfare. Research in this activity also promotes scientific progress in biology through support of research across scales, from molecules, cells, organisms, to ecosystems. This activity's investment portfolio includes projects on understanding the changing dynamics of the biosphere, research on the fundamental characteristics of biological energy systems, infrastructure and research resources such as databases, centers, and observatories, and efforts to broaden participation and develop the next generation of biological researchers.

Computer and Information Science and Engineering.—This activity supports investigator initiated research in all areas of computer and information science and engineering, helps develop and maintain cutting-edge national computational and information infrastructure for research and education generally, and contributes to the education and training of the next generation of computer and computational engineers.

Engineering.—Research supported by this activity aims to increase U.S. engineering capability and strength, and focus that capability and strength on areas that are relevant to national problems and long-term needs. This activity also includes small business innovation research.

Geosciences.—This activity supports research and associated infrastructure to advance knowledge of the properties and dynamics of the planet on which we live. Research includes understanding the causes and implications of climate change, as well as disruptive processes such as earthquakes and storms. Additionally, this activity supports Arctic and Antarctic research and operational science support and other related activities for United States polar research programs, including the funding to reimburse Federal agencies for logistical and other related activities supported by the United States Antarctic Program.

Mathematical and Physical Sciences.—Research in this activity is directed at increasing understanding of natural laws and phenomena across

RESEARCH AND RELATED ACTIVITIES—Continued

the astronomical sciences, chemistry, materials sciences, mathematical sciences, and physics. Research support is available in multiple modalities ranging from multi-user facilities and mid-scale instrumentation to individual investigator awards, from sites for undergraduate research experiences to early career faculty development and collaborative and international efforts.

Social, Behavioral, and Economic Sciences.—This activity supports research, education, and infrastructure in the social, behavioral, cognitive, and economic sciences and funds the collection and dissemination of statistics on the science and engineering enterprise.

Office of International Science and Engineering.—This activity serves as the focal point of international activities at NSF. In addition to strategic funding and co-funding that targets catalytic partnerships and workforce-building international research opportunities, OISE advances NSF's global science leadership through extensive interactions with U.S. and global counterpart agencies and organizations.

Integrative Activities.—This activity supports emerging cross disciplinary research efforts and major research instrumentation. This activity also provides support for the Science and Technology Policy Institute. The Experimental Program to Stimulate Competitive Research broadens participation of States and regions in science and engineering by helping institutions expand their research capacity and competitiveness.

The *United States Arctic Research Commission (USARC)* is an independent agency, funded through NSF's appropriations. USARC promotes Arctic research and recommends national Arctic research policies to guide Federal agencies in developing and implementing their research programs in the Arctic region.

Object Classification (in millions of dollars)

Identification code 049-0100-0-1-999	2015 actual	2016 est.	2017 est.
Direct obligations:			
21.0 Travel and transportation of persons	15	15	15
25.1 Advisory and assistance services	121	123	130
25.2 Other services from non-Federal sources	9	9	9
25.3 Other goods and services from Federal sources	78	78	78
25.4 Operation and maintenance of facilities	273	270	275
25.5 Research and development contracts	6	6	5
26.0 Supplies and materials	1	1	1
31.0 Equipment	1		
41.0 Grants, subsidies, and contributions	5,538	5,546	5,566
99.0 Direct obligations	6,042	6,048	6,079
99.0 Reimbursable obligations	95	120	120
99.9 Total new obligations	6,137	6,168	6,199

Employment Summary

Identification code 049-0100-0-1-999	2015 actual	2016 est.	2017 est.
1001 Direct civilian full-time equivalent employment	3	3	3

RESEARCH AND RELATED ACTIVITIES

(Legislative proposal, subject to PAYGO)

Program and Financing (in millions of dollars)

Identification code 049-0100-4-1-999	2015 actual	2016 est.	2017 est.
Obligations by program activity:			
0001 Biological Sciences			45
0002 Computer and Information Science and Engineering			56
0003 Engineering			56
0005 Geosciences			79
0006 Mathematical and Physical Sciences			82
0007 Social, Behavioral and Economic Sciences			16
0008 Integrative Activities			9
0009 Office of International Science and Engineering			3
0900 Total new obligations (object class 41.0)			346

Budgetary resources:

Budget authority:			
Appropriations, mandatory:			
1200	Appropriation		346
1930	Total budgetary resources available		346

Change in obligated balance:

Unpaid obligations:			
3010	Obligations incurred, unexpired accounts		346
3020	Outlays (gross)		-69
3050	Unpaid obligations, end of year		277
Memorandum (non-add) entries:			
3200	Obligated balance, end of year		277

Budget authority and outlays, net:

Mandatory:			
4090	Budget authority, gross		346
Outlays, gross:			
4100	Outlays from new mandatory authority		69
4180	Budget authority, net (total)		346
4190	Outlays, net (total)		69

MAJOR RESEARCH EQUIPMENT AND FACILITIES CONSTRUCTION

For necessary expenses for the acquisition, construction, commissioning, and upgrading of major research equipment, facilities, and other such capital assets pursuant to the National Science Foundation Act of 1950 (42 U.S.C. 1861 et seq.), including authorized travel, **[\$200,310,000]** \$193,120,000, to remain available until expended. (*Science Appropriations Act, 2016.*)

Program and Financing (in millions of dollars)

Identification code 049-0551-0-1-251	2015 actual	2016 est.	2017 est.	
Obligations by program activity:				
0001	Major Research Equipment and Facilities Construction	145	258	193
0900	Total new obligations (object class 41.0)	145	258	193

Budgetary resources:

Unobligated balance:				
1000	Unobligated balance brought forward, Oct 1		58	
Budget authority:				
Appropriations, discretionary:				
1100	Appropriation	201	200	193
Spending authority from offsetting collections, discretionary:				
1700	Collected	2		
1900	Budget authority (total)	203	200	193
1930	Total budgetary resources available	203	258	193
Memorandum (non-add) entries:				
1941	Unexpired unobligated balance, end of year	58		

Change in obligated balance:

Unpaid obligations:				
3000	Unpaid obligations, brought forward, Oct 1	287	174	315
3010	Obligations incurred, unexpired accounts	145	258	193
3020	Outlays (gross)	-258	-117	-155
3050	Unpaid obligations, end of year	174	315	353
Memorandum (non-add) entries:				
3100	Obligated balance, start of year	287	174	315
3200	Obligated balance, end of year	174	315	353

Budget authority and outlays, net:

Discretionary:				
4000	Budget authority, gross	203	200	193
Outlays, gross:				
4010	Outlays from new discretionary authority		12	12
4011	Outlays from discretionary balances	258	105	143
4020	Outlays, gross (total)	258	117	155
Offsets against gross budget authority and outlays:				
Offsetting collections (collected) from:				
4033	Non-Federal sources	-2		
4180	Budget authority, net (total)	201	200	193
4190	Outlays, net (total)	256	117	155

The Major Research Equipment and Facilities Construction activity supports the acquisition, construction, and commissioning of unique national research platforms and major research facilities and equipment. Performance

of each construction project is measured against an established baseline at regular intervals and at major milestones.

AGENCY OPERATIONS AND AWARD MANAGEMENT

For agency operations and award management necessary in carrying out the National Science Foundation Act of 1950 (42 U.S.C. 1861 et seq.); services authorized by section 3109 of title 5, United States Code; hire of passenger motor vehicles; uniforms or allowances therefor, as authorized by sections 5901 and 5902 of title 5, United States Code; rental of conference rooms in the District of Columbia; and reimbursement of the Department of Homeland Security for security guard services; **[\$330,000,000] \$373,020,000: Provided,** That not to exceed \$8,280 is for official reception and representation expenses: *Provided further,* That contracts may be entered into under this heading in fiscal year **[2016] 2017** for maintenance and operation of facilities and for other services to be provided during the next fiscal year: *Provided further,* That of the amount provided for costs associated with the acquisition, occupancy, and related costs of new headquarters space, not more than **[\$30,770,000] \$40,700,000** shall remain available until expended. (*Science Appropriations Act, 2016.*)

Program and Financing (in millions of dollars)

Identification code 049-0180-0-1-251	2015 actual	2016 est.	2017 est.
Obligations by program activity:			
0001 Agency Operations and Award Management	307	348	373
0801 Agency Operations and Award Management (Reimbursable)	6	10	10
0900 Total new obligations	313	358	383
Budgetary resources:			
Unobligated balance:			
1000 Unobligated balance brought forward, Oct 1		18	
Budget authority:			
Appropriations, discretionary:			
1100 Appropriation	325	330	373
Spending authority from offsetting collections, discretionary:			
1700 Collected	5	10	10
1701 Change in uncollected payments, Federal sources	1		
1750 Spending auth from offsetting collections, disc (total)	6	10	10
1900 Budget authority (total)	331	340	383
1930 Total budgetary resources available	331	358	383
Memorandum (non-add) entries:			
1941 Unexpired unobligated balance, end of year	18		
Change in obligated balance:			
Unpaid obligations:			
3000 Unpaid obligations, brought forward, Oct 1	83	90	108
3010 Obligations incurred, unexpired accounts	313	358	383
3011 Obligations incurred, expired accounts	6		
3020 Outlays (gross)	-305	-340	-403
3041 Recoveries of prior year unpaid obligations, expired	-7		
3050 Unpaid obligations, end of year	90	108	88
Uncollected payments:			
3060 Uncollected pymts, Fed sources, brought forward, Oct 1		-1	-1
3070 Change in uncollected pymts, Fed sources, unexpired	-1		
3090 Uncollected pymts, Fed sources, end of year	-1	-1	-1
Memorandum (non-add) entries:			
3100 Obligated balance, start of year	83	89	107
3200 Obligated balance, end of year	89	107	87
Budget authority and outlays, net:			
Discretionary:			
4000 Budget authority, gross	331	340	383
Outlays, gross:			
4010 Outlays from new discretionary authority	252	281	316
4011 Outlays from discretionary balances	53	59	87
4020 Outlays, gross (total)	305	340	403
Offsets against gross budget authority and outlays:			
Offsetting collections (collected) from:			
4030 Federal sources	-5	-10	-10
Additional offsets against gross budget authority only:			
4050 Change in uncollected pymts, Fed sources, unexpired	-1		
4060 Additional offsets against budget authority only (total)	-1		
4070 Budget authority, net (discretionary)	325	330	373
4080 Outlays, net (discretionary)	300	330	393
4180 Budget authority, net (total)	325	330	373

4190 Outlays, net (total)	300	330	393
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This account funds NSF's scientific, professional, and administrative workforce, the physical and technological infrastructure necessary for a productive, safe and secure work environment, and the essential business operations critical to NSF's administrative processes.

Object Classification (in millions of dollars)

Identification code 049-0180-0-1-251	2015 actual	2016 est.	2017 est.
Direct obligations:			
Personnel compensation:			
11.1 Full-time permanent	142	154	155
11.3 Other than full-time permanent	10	10	10
11.5 Other personnel compensation	2	2	2
11.8 Special personal services payments	1	1	1
11.9 Total personnel compensation	155	167	168
12.1 Civilian personnel benefits	45	49	51
21.0 Travel and transportation of persons	6	5	5
23.1 Rental payments	34	34	32
23.3 Communications, utilities, and miscellaneous charges	2	4	5
25.1 Advisory and assistance services	43	47	54
25.2 Other services from non-Federal sources	12	10	12
25.3 Other goods and services from Federal sources	6	9	11
25.7 Operation and maintenance of equipment	1		2
26.0 Supplies and materials	1	3	4
31.0 Equipment	2	20	29
99.0 Direct obligations	307	348	373
99.0 Reimbursable obligations	6	10	10
99.9 Total new obligations	313	358	383

Employment Summary

Identification code 049-0180-0-1-251	2015 actual	2016 est.	2017 est.
1001 Direct civilian full-time equivalent employment	1,285	1,352	1,352

OFFICE OF THE NATIONAL SCIENCE BOARD

For necessary expenses (including payment of salaries, authorized travel, hire of passenger motor vehicles, the rental of conference rooms in the District of Columbia, and the employment of experts and consultants under section 3109 of title 5, United States Code) involved in carrying out section 4 of the National Science Foundation Act of 1950 (42 U.S.C. 1863) and Public Law 86-209 (42 U.S.C. 1880 et seq.), **[\$4,370,000] \$4,380,000: Provided,** That not to exceed \$2,500 shall be available for official reception and representation expenses. (*Science Appropriations Act, 2016.*)

Program and Financing (in millions of dollars)

Identification code 049-0350-0-1-251	2015 actual	2016 est.	2017 est.
Obligations by program activity:			
0001 Office of the National Science Board (Direct)	4	4	4
Budgetary resources:			
Budget authority:			
Appropriations, discretionary:			
1100 Appropriation	4	4	4
1930 Total budgetary resources available	4	4	4
Change in obligated balance:			
Unpaid obligations:			
3000 Unpaid obligations, brought forward, Oct 1	1	1	1
3010 Obligations incurred, unexpired accounts	4	4	4
3020 Outlays (gross)	-4	-4	-4
3050 Unpaid obligations, end of year	1	1	1
Memorandum (non-add) entries:			
3100 Obligated balance, start of year	1	1	1
3200 Obligated balance, end of year	1	1	1
Budget authority and outlays, net:			
Discretionary:			
4000 Budget authority, gross	4	4	4
Outlays, gross:			
4010 Outlays from new discretionary authority	3	3	3

OFFICE OF THE NATIONAL SCIENCE BOARD—Continued
Program and Financing—Continued

Identification code 049-0350-0-1-251	2015 actual	2016 est.	2017 est.
4011 Outlays from discretionary balances	1	1	1
4020 Outlays, gross (total)	4	4	4
4180 Budget authority, net (total)	4	4	4
4190 Outlays, net (total)	4	4	4

This appropriation provides policy-making and related responsibilities for NSF and provides guidance on significant national policy issues in science and engineering research and education, as required by law.

Object Classification (in millions of dollars)

Identification code 049-0350-0-1-251	2015 actual	2016 est.	2017 est.
Direct obligations:			
11.1 Personnel compensation: Full-time permanent	2	2	2
12.1 Civilian personnel benefits	1	1	1
25.1 Advisory and assistance services	1	1	1
99.9 Total new obligations	4	4	4

Employment Summary

Identification code 049-0350-0-1-251	2015 actual	2016 est.	2017 est.
1001 Direct civilian full-time equivalent employment	18	19	19

OFFICE OF INSPECTOR GENERAL

For necessary expenses of the Office of Inspector General as authorized by the Inspector General Act of 1978, **[\$15,160,000]** \$15,200,000, of which \$400,000 shall remain available until September 30, **[2017]** 2018. (*Science Appropriations Act, 2016.*)

Program and Financing (in millions of dollars)

Identification code 049-0300-0-1-251	2015 actual	2016 est.	2017 est.
Obligations by program activity:			
0001 Office of Inspector General (Direct)	15	15	15
Budgetary resources:			
Unobligated balance:			
1000 Unobligated balance brought forward, Oct 1	1		
Budget authority:			
Appropriations, discretionary:			
1100 Appropriation	14	15	15
1930 Total budgetary resources available	15	15	15
Change in obligated balance:			
Unpaid obligations:			
3000 Unpaid obligations, brought forward, Oct 1	3	2	3
3010 Obligations incurred, unexpired accounts	15	15	15
3011 Obligations incurred, expired accounts	1		
3020 Outlays (gross)	-15	-14	-15
3041 Recoveries of prior year unpaid obligations, expired	-2		
3050 Unpaid obligations, end of year	2	3	3
Memorandum (non-add) entries:			
3100 Obligated balance, start of year	3	2	3
3200 Obligated balance, end of year	2	3	3
Budget authority and outlays, net:			
Discretionary:			
4000 Budget authority, gross	14	15	15
Outlays, gross:			
4010 Outlays from new discretionary authority	12	12	12
4011 Outlays from discretionary balances	3	2	3
4020 Outlays, gross (total)	15	14	15
4180 Budget authority, net (total)	14	15	15
4190 Outlays, net (total)	15	14	15

This appropriation provides agency-wide audit and investigative functions to identify and correct management and administrative deficiencies which

create conditions for existing or potential instances of fraud, waste, and mismanagement consistent with the Inspector General Act of 1978, as amended (5 U.S.C. App. 3).

Object Classification (in millions of dollars)

Identification code 049-0300-0-1-251	2015 actual	2016 est.	2017 est.
Direct obligations:			
11.1 Personnel compensation: Full-time permanent	9	9	9
12.1 Civilian personnel benefits	3	3	3
25.2 Other services from non-Federal sources	3	3	3
99.9 Total new obligations	15	15	15

Employment Summary

Identification code 049-0300-0-1-251	2015 actual	2016 est.	2017 est.
1001 Direct civilian full-time equivalent employment	68	75	69

EDUCATION AND HUMAN RESOURCES

For necessary expenses in carrying out science, mathematics and engineering education and human resources programs and activities pursuant to the National Science Foundation Act of 1950 (42 U.S.C. 1861 et seq.), including services as authorized by section 3109 of title 5, United States Code, authorized travel, and rental of conference rooms in the District of Columbia, **[\$880,000,000]** \$898,870,000, to remain available until September 30, **[2017]** 2018. (*Science Appropriations Act, 2016.*)

Program and Financing (in millions of dollars)

Identification code 049-0106-0-1-251	2015 actual	2016 est.	2017 est.
Obligations by program activity:			
0001 Education and Human Resources	886	886	899
0100 Total Disc obligations	886	886	899
0302 Low income scholarship program	109	155	75
0303 ITEST grants for Mathematics, Science, or Engineering enrichment courses	30	61	25
0391 Total Mandatory Obligations (H-1B)	139	216	100
0799 Total direct obligations	1,025	1,102	999
0801 Education and Human Resources (Reimbursable)	5	15	15
0900 Total new obligations	1,030	1,117	1,014
Budgetary resources:			
Unobligated balance:			
1000 Unobligated balance brought forward, Oct 1	125	122	
1001 Discretionary unobligated balance brought fwd, Oct 1	16	6	
1021 Recoveries of prior year unpaid obligations	13		
1050 Unobligated balance (total)	138	122	
Budget authority:			
Appropriations, discretionary:			
1100 Appropriation	866	880	899
Appropriations, mandatory:			
1201 Appropriation (special or trust fund)	141	100	100
1203 Appropriation (previously unavailable)	10	7	7
1232 Appropriations and/or unobligated balance of appropriations temporarily reduced	-7	-7	
1260 Appropriations, mandatory (total)	144	100	107
Spending authority from offsetting collections, discretionary:			
1700 Collected	4	15	15
1701 Change in uncollected payments, Federal sources	1		
1750 Spending auth from offsetting collections, disc (total)	5	15	15
1900 Budget authority (total)	1,015	995	1,021
1930 Total budgetary resources available	1,153	1,117	1,021
Memorandum (non-add) entries:			
1940 Unobligated balance expiring	-1		
1941 Unexpired unobligated balance, end of year	122		7
Change in obligated balance:			
Unpaid obligations:			
3000 Unpaid obligations, brought forward, Oct 1	1,971	2,104	2,329
3010 Obligations incurred, unexpired accounts	1,030	1,117	1,014
3011 Obligations incurred, expired accounts	3		

3020	Outlays (gross)	-867	-892	-891
3040	Recoveries of prior year unpaid obligations, unexpired	-13		
3041	Recoveries of prior year unpaid obligations, expired	-20		
3050	Unpaid obligations, end of year	2,104	2,329	2,452
Uncollected payments:				
3060	Uncollected pymts, Fed sources, brought forward, Oct 1	-6	-5	-5
3070	Change in uncollected pymts, Fed sources, unexpired	-1		
3071	Change in uncollected pymts, Fed sources, expired	2		
3090	Uncollected pymts, Fed sources, end of year	-5	-5	-5
Memorandum (non-add) entries:				
3100	Obligated balance, start of year	1,965	2,099	2,324
3200	Obligated balance, end of year	2,099	2,324	2,447

Budget authority and outlays, net:

Discretionary:				
4000	Budget authority, gross	871	895	914
Outlays, gross:				
4010	Outlays from new discretionary authority	110	138	141
4011	Outlays from discretionary balances	686	662	649
4020	Outlays, gross (total)	796	800	790
Offsets against gross budget authority and outlays:				
Offsetting collections (collected) from:				
4030	Federal sources	-6	-15	-15
Additional offsets against gross budget authority only:				
4050	Change in uncollected pymts, Fed sources, unexpired	-1		
4052	Offsetting collections credited to expired accounts	2		
4060	Additional offsets against budget authority only (total)	1		
4070	Budget authority, net (discretionary)	866	880	899
4080	Outlays, net (discretionary)	790	785	775
Mandatory:				
4090	Budget authority, gross	144	100	107
Outlays, gross:				
4100	Outlays from new mandatory authority		11	12
4101	Outlays from mandatory balances	71	81	89
4110	Outlays, gross (total)	71	92	101
4180	Budget authority, net (total)	1,010	980	1,006
4190	Outlays, net (total)	861	877	876

Summary of Budget Authority and Outlays (in millions of dollars)

	2015 actual	2016 est.	2017 est.
Enacted/requested:			
Budget Authority	1,010	980	1,006
Outlays	861	877	876
Legislative proposal, subject to PAYGO:			
Budget Authority			54
Outlays			8
Total:			
Budget Authority	1,010	980	1,060
Outlays	861	877	884

The Education and Human Resources (EHR) appropriation funds and manages a comprehensive set of programs that further NSF's goals of ensuring a diverse, globally competitive U.S. science, technology, engineering, and mathematics (STEM) workforce, as well as a scientifically literate population. To advance those goals, EHR collaborates with other NSF research units, federal agencies, and promotes public-private partnerships. EHR supports research on STEM teaching and learning to provide the evidence base for improvements in education at all levels in the STEM disciplines. Supporting development and effective implementation of new learning technologies is also a priority. EHR's pre-K-12 education-research programs, for example, develop and test new instruction materials for students and teachers, which incorporate the latest advances in teaching, learning, and education technologies. STEM teacher-education opportunities occur throughout the full continuum, from pre-service and in-service, through life-long learning. Research programs at the undergraduate level improve curricula, strengthen laboratory courses, enhance faculty effectiveness and lead education reforms in STEM disciplines. Advanced technological education programs strengthen student preparation for the high-technology workforce. Support of graduate-level STEM education primarily includes fellowships and traineeships to sustain U.S. leadership in global science and technology. All EHR programs aim to broaden participation of groups underrepresented in STEM fields by, for example, im-

proving infrastructure and academic programs at minority-serving institutions. STEM-education evaluation activities ensure accountability by developing indicators that measure program impact and informing the education community of best practices and other relevant findings. EHR activities also include programs supported by H-1B non-immigrant visa fees, which provide undergraduate and graduate scholarships in STEM disciplines, improve educational opportunities for students, and provide research opportunities for STEM teachers and students.

Object Classification (in millions of dollars)

Identification code 049-0106-0-1-251	2015 actual	2016 est.	2017 est.	
Direct obligations:				
21.0	Travel and transportation of persons	2	2	2
25.1	Advisory and assistance services	20	20	20
25.2	Other services from non-Federal sources	4	4	4
25.3	Other goods and services from Federal sources	2	2	2
41.0	Grants, subsidies, and contributions	997	1,074	971
99.0	Direct obligations	1,025	1,102	999
99.0	Reimbursable obligations	5	15	15
99.9	Total new obligations	1,030	1,117	1,014

EDUCATION AND HUMAN RESOURCES
(Legislative proposal, subject to PAYGO)

Program and Financing (in millions of dollars)

Identification code 049-0106-4-1-251	2015 actual	2016 est.	2017 est.	
Obligations by program activity:				
0401	Mandatory Programs (Non-H1B)			54
0492	Total Mandatory Obligations (Non-H1B)			54
0900	Total new obligations (object class 41.0)			54

Budgetary resources:

Budget authority:				
Appropriations, mandatory:				
1200	Appropriation			54
1930	Total budgetary resources available			54

Change in obligated balance:

Unpaid obligations:				
3010	Obligations incurred, unexpired accounts			54
3020	Outlays (gross)			-8
3050	Unpaid obligations, end of year			46
Memorandum (non-add) entries:				
3200	Obligated balance, end of year			46

Budget authority and outlays, net:

Mandatory:				
4090	Budget authority, gross			54
Outlays, gross:				
4100	Outlays from new mandatory authority			8
4180	Budget authority, net (total)			54
4190	Outlays, net (total)			8

Trust Funds

DONATIONS

Special and Trust Fund Receipts (in millions of dollars)

Identification code 049-8960-0-7-251	2015 actual	2016 est.	2017 est.	
0100	Balance, start of year			
Receipts:				
Current law:				
1130	Donations, National Science Foundation	35	35	35
2000	Total: Balances and receipts	35	35	35
Appropriations:				
Current law:				
2101	Donations	-35	-35	-35
5099	Balance, end of year			

DONATIONS—Continued
Program and Financing (in millions of dollars)

Identification code 049–8960–0–7–251	2015 actual	2016 est.	2017 est.
Obligations by program activity:			
0001 Atacama Large Millimeter Array	1	6	1
0002 Gemini Telescope	11	22	11
0003 B&M Gates Foundation	1	5	1
0004 International Ocean Drilling	22	29	22
0005 General Trust Fund		2	
0900 Total new obligations (object class 41.0)	35	64	35
Budgetary resources:			
Unobligated balance:			
1000 Unobligated balance brought forward, Oct 1	28	29	
1021 Recoveries of prior year unpaid obligations	1		
1050 Unobligated balance (total)	29	29	
Budget authority:			
Appropriations, mandatory:			
1201 Appropriation (special or trust fund)	35	35	35
1930 Total budgetary resources available	64	64	35
Memorandum (non-add) entries:			
1941 Unexpired unobligated balance, end of year	29		
Change in obligated balance:			
Unpaid obligations:			
3000 Unpaid obligations, brought forward, Oct 1	25	36	65
3010 Obligations incurred, unexpired accounts	35	64	35
3020 Outlays (gross)	-23	-35	-46
3040 Recoveries of prior year unpaid obligations, unexpired	-1		
3050 Unpaid obligations, end of year	36	65	54
Memorandum (non-add) entries:			
3100 Obligated balance, start of year	25	36	65
3200 Obligated balance, end of year	36	65	54
Budget authority and outlays, net:			
Mandatory:			
4090 Budget authority, gross	35	35	35
Outlays, gross:			
4100 Outlays from new mandatory authority		21	21
4101 Outlays from mandatory balances	23	14	25

4110 Outlays, gross (total)	23	35	46
4180 Budget authority, net (total)	35	35	35
4190 Outlays, net (total)	23	35	46

This account consists of contributions from foreign governments, organizations, and individuals to fund various cooperative efforts in science, research, and education. These efforts include major international projects, such as operation of the Gemini telescopes, and the NSF ocean discovery program. Other smaller activities supported include cooperative research, joint seminars, exchange of senior scientists, short-term research development visits, international conferences, and support for certain special functions of NSF and the National Science Board. These funds are not otherwise available.

ADMINISTRATIVE PROVISION

Not to exceed 5 percent of any appropriation made available for the current fiscal year for the National Science Foundation in this Act may be transferred between such appropriations, but no such appropriation shall be increased by more than **[10]** 15 percent by any such transfers. Any transfer pursuant to this section shall be treated as a reprogramming of funds under section 505 of this Act and shall not be available for obligation except in compliance with the procedures set forth in that section. (*Science Appropriations Act, 2016.*)

GENERAL FUND RECEIPT ACCOUNTS

(in millions of dollars)

	2015 actual	2016 est.	2017 est.
Offsetting receipts from the public:			
049–320000 Collections of Receivables from Canceled Accounts	1	1	1
049–322000 All Other General Fund Proprietary Receipts Including Budget Clearing Accounts	2	2	2
General Fund Offsetting receipts from the public	3	3	3